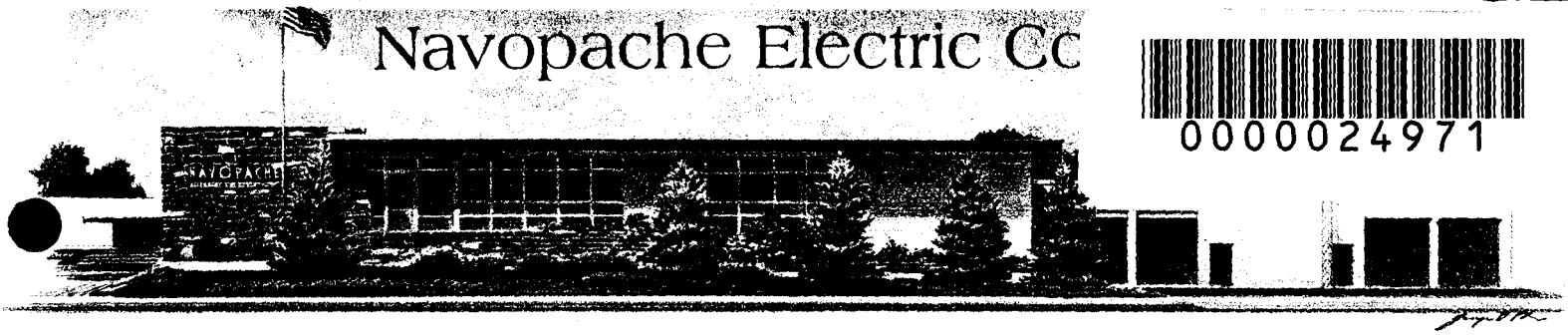

BOARD RESOLUTION
FOUR YEAR WORK PLAN

BE IT RESOLVED, by the Board of Directors of Navopache Electric Cooperative, Inc. that we have reviewed the Four Year Work Plan covering the period 2000 and 2003, prepared by SGS Witter, Inc. for our Cooperative.

This Plan is hereby approved by the Directors, and it is recognized as the construction and loan fund requirements for the planning period.

BE IT FURTHER RESOLVED, that the Directors recognize the loan funds outlined in the Work Plan are to be expended for those designated items and projects within the planning period; that management is directed to complete the projects on a timely basis, and to use sub-contractors when necessary; that any deviations from this Plan have prior approval and be in accordance with REA Bulletin 40-6, Construction Methods and Purchase of Materials and Equipment.

NOW, THEREFORE, BE IT RESOLVED that the Directors recognize the Four Year Work Plan shall be updated on an annual basis thus providing a continuous Plan on a four year funding and construction guideline, and hereby directs management to use this Plan as a working tool, in construction and operation of the system.

I, Joseph W. Kay, Jr. Secretary of Navopache Electric 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 that organization held on the 24th day of May, 2000

Joseph W. Kay, Jr.
Joseph W. Kay, Jr., Secretary

1878 W. White Mountain Blvd. · P. O. Box 308 Lakeside, Arizona 85929
520-368-5118 · 1-800-543-6324 · FAX 520-368-6038

Navopache Electric Cooperative, Inc.
Arizona 13 Navajo
Lakeside, Arizona

FOUR YEAR CONSTRUCTION WORK PLAN
2000 - 2003

SGS Witter, Inc.
Albuquerque, New Mexico
June 2000

I hereby certify that this 2000-2003 Construction Work Plan was prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the State of Arizona.

6/26/2000
Date

Michael L. Smith

Registered Professional Engineer (Electrical)
CERTIFICATE NO.
28688
MICHAEL L.
SMITH
Date Signed 6/26/00
ARIZONA U.S.A.

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I. EXECUTIVE SUMMARY

This Construction Work Plan has been prepared at the request of the management of the Navopache Electric Cooperative, Inc. (Arizona 13 Navajo) of Lakeside, Arizona. The primary purpose of this Work Plan is to provide the Cooperative with estimated construction costs, as well as, an overall construction program. Navopache is a member of the Plains Electric Generation and Transmission Cooperative, Inc. and contractually receives all of its power requirements from them. This Construction Work Plan will recommend changes that are necessary in order to provide continued efficient and adequate electric service to all the Cooperative's consumers throughout the planning period. This Work Plan will also provide basic data for use in the preparation of the annual budget and to support a request for additional loan funds that might be required from an outside source.

A. Losses

At the end of 1999, Navopache's electric system had 2,855 miles of energized line and total system kWh sales of 299,823,612 for the calendar year, which equates to 105,017 kWh/mile. RUS Bulletin 45-4, "Guidelines for Distribution System Energy Losses" indicates that 8.5% system losses are average for kWh sales per mile in this range. Cooperative records indicate that system losses for 1999 were 7.15% and less than the RUS guideline. Table 1 shows losses for the past six year period starting in 1999. Several projects proposed in this work plan will reduce losses on the system.

Table 1 - Energy Losses

Year	1994	1995	1996	1997	1998	1999
Energy Losses %	7.79%	7.31%	8.13%	7.56%	7.14%	7.15%

B. Outages

The average outage hours per consumer over the past five years are 3.77. This figure is under the RUS recommended guideline of 5.00. The year 1995 was the worst of the five years with an average of 9.09 outage hours per consumer. A storm hit the area that created 6.65 of these outage hours. The storm took out distribution lines on the westen system due to icing and trees falling on the lines from heavy snows. It took five days with the help of crews from other cooperatives to get service restored to all consumers.

Table 2 - Outage Hours per Consumer

Year	1995	1996	1997	1998	1999	Average
Power Supplier	0.29	0.47	0.35	0.38	0.09	0.32
Extreme Storm	6.65	0.29	1.24	0.02	0.61	1.76
Scheduled	0.13	0.15	0.19	0.12	0.09	0.14
All Other	2.02	1.26	1.04	1.43	2.04	1.56
Total	9.09	2.17	2.82	1.95	2.83	3.77

C. Summary of Loan Funds

Table 3 is a summary of costs for construction proposed in this work plan for Navopache Electric Cooperative. Construction costs are separated into six categories, member extensions, ordinary replacements, distribution construction, substation construction, transmission construction, and a total of all construction by year and for all four years.

Table 3 – 2000-2003 Construction Work Plan Summaries

Year	Member Extensions	Ordinary Replacements	Distribution Cost	Substation Cost	Transmission Cost	Totals
2000	$2,845,698	$23,495	$969,828	$0	$4,483,501	$8,322,522
2001	$2,845,698	$23,495	$556,028	$0	$83,503	$3,508,724
2002	$2,845,698	$23,495	$401,628	$0	$83,503	$3,354,324
2003	$2,845,698	$23,495	$296,628	$0	$83,503	$3,249,324
Total	$11,382,792	$93,980	$2,224,112	$0	$4,734,010	$18,434,894

II. HISTORICAL SYSTEM DATA

This section of the report will provide a review of past experiences in regard to consumer growth, power usage and costs, substation capacity, system losses, and outages and service reliability. Navopache Electric Cooperative provided this data. Other sections of the report will detail voltage drop, feeder losses, power factor, system coordination, and construction costs.

A. Consumer, kW, and kWh Data

In 1999, Navopache Electric Cooperative provided electric service to an average of 29,682 consumers using an average of 558 kWh per month, 205 irrigation consumers, 178 commercial consumers, 13 large commercial users, and 23 street lighting consumers. For the past two year period, the Cooperative has connected 2,632 new services or about 1316 new services per year. The net gain in consumers is 2,225 consumers or 1,113 consumers per year. The 1998 Power Requirements Study is showing an average net increase of 1,157 consumers per year. Appendix A contains four graphs which show average consumers on the system, average new consumers connected each year, new services, and net gain services versus average new consumers. These graphs cover a seven-year period beginning in 1993 and ending in 1999.

Purchases and sales of electric power have steadily increased over the past seven-year period. Purchases in 1994 were 268 GWh and in 1999 were 324 GWh. Appendix A contains four graphs showing purchases, purchases versus sales, cost of purchases, and mills per kWh for the years from 1993 to 1999.

Losses on the system have reached a high of 8.13% in 1996 and the low occurred in 1993 (7.07%) and in 1999 it was 7.15%. Since 1996, losses on the system have been declining. Table 1 in the previous section shows the percent losses over the past six year period. Several corrective measures have been implemented by the Cooperative to help reduce losses on their system. Typical measures are listed below:

1. Disconnecting or removing distribution transformers that are not serving loads if it is economical to do so.

2. Transformers are prevented from being over-excited by maintaining proper voltage and correct tap connections.

3. Good load balancing on three-phase lines is maintained to keep losses at a minimum.

4. Capacitors are used to provide voltage support, power factor correction and reduces line losses due to a reduction in line current.

5. Metering for commercial and industrial consumers is checked for proper connections, registration, and multipliers. Employees are alert for bypassing or tampering with meters.

6. Conductors and transformers are sized to properly serve loads economically.

Increasing power costs will make losses an important factor in overall operations of electric systems. Reducing these losses should remain a primary concern to the Cooperative.

The system peak of 58.26 MW occurred during the month of December in 1999. The projected number of consumers and usage has been determined using actual history. This study projects new consumer growth at 1,250 new services per year. At the end of this planning period, the Cooperative is expected to have 34,988 consumers. This equates to 34,557 electric consumers using an average of 522 kWh per month, 211 irrigation consumers, 183 commercial users, 13 large commercial users, and 23 street lighting loads.

B. Substation Load Data

The system historically peaks in the winter months, usually December or January. Chart 1 lists the peak loading data for December 1999. It shows present transformer capacities and voltages at each substation. Loads are shown in kW, power factor, and kVA. Percents are shown for the amount of capacity used at each substation.

Chart 1 - Present Peak Substation Loading

	VOLTAGE kV	TRANSFORMER RATINGS MVA	BASE CAPACITY kVA	PEAK kW	PEAK PF	PEAK kVA	BASE CAPACITY USED
CORONADO DELIVERY SUBSTATIONS							
Alpine	69-24.94/14.4	3.00	3,000	845	99.5%	849	28.31%
Concho	69-24.94/14.4	5.00	5,000	2,736	-99.7%	2,744	54.88%
Frisco Ridge	69-14.4	0.10	100	22	90.0%	24	24.44%
Green's Peak	69-14.4	0.25	250	95	95.0%	100	40.13%
Greer	69-24.94/14.4	5.00	5,000	3,182	96.0%	3,315	66.29%
Jenk's Ranch	69-13.8	0.10	100	19	90.0%	21	21.11%
Luna	69-24.94/14.4	1.00	1,000	165	97.9%	169	16.85%
Nutrioso	69-24.94/14.4	2.50	2,500	809	90.0%	899	35.96%
Round Valley	69-24.94/14.4	7.50	7,500	6,804	99.2%	6,859	91.45%
Saffel Canyon	69-24.94/14.4	7.50	7,500	2,794	-91.4%	3,058	40.77%
St. John's	69-24.94/14.4	7.50	7,500	3,816	99.8%	3,824	50.98%
Steven's	69-24.94/14.4	7.50	7,500	1,442	-99.2%	1,454	19.38%
Totals				22,729		23,315	
Metered Demand	500-69	100.00	100,000	20,160			
LINDEN DELIVERY POINT							
Linden	69-24.94/14.4	6.00	6,000	4,819	-99.9%	4,824	80.40%
Totals				4,819		4,824	
Metered Demand	69	--	--	4,819			
SHOW LOW DELIVERY SUBSTATIONS							
Alchesay	69-24.94/14.4	7.50	7,500	2,304	98.5%	2,339	31.19%
Drumbeat	69-24.94/14.4	10.00	10,000	8,179	-97.9%	8,354	83.54%
Pinetop Lakes	69-24.94/14.4	10.00	10,000	5,261	-99.7%	5,277	52.77%
Springer Mountain	69-24.94/14.4	10.00	10,000	8,148	99.5%	8,189	81.89%
Wagon Wheel	69-24.94/14.4	10.00	10,000	7,063	97.8%	7,222	72.22%
Totals				30,955		31,381	
Metered Demand	69	--	--	28,000			
ZENIFF DELIVERY POINT							
Heber	69-24.94/14.4	7.50	7,500	4,363	-99.9%	4,367	58.23%
Totals				4,363		4,367	
Metered Demand	69	--	--	4,406			

Alchesay's - McNary Step-down Transformer							
McNary	24.94-2.4	0.50	500	226	98.8%	229	45.75%
Totals				226		229	

C. Load Current and Voltage Measurements

The Cooperative provided substation and circuit metering data for all substations by month for the years 1997, 1998, and 1999. At this time, a few of the circuits do not have metering. The Cooperative's SCADA system provides real-time voltage measurements on the transmission and distribution systems.

D. System Outages and Reliability

The Cooperative has maintained an average of 3.77 outage-hours per consumer over the past five years. The year 1995 exceeded the RUS guideline of 5.00 outage hours per consumer with a value of 9.09. This was due to a storm with heavy wet snows hitting the western system. It took the Cooperative, with the help of other Cooperative's crews, five days to restore service to all consumers on the system. Trees falling into the distribution lines and heavy icing breaking crossarms were the major causes of the outages. Outage hours for the remaining years are less than 3.0 hours per consumer.

Appendix A of this report contains a graph that depicts outage hours per consumer. The outage hours per consumer are broken out into four categories. These categories are power supplier, extreme storm, scheduled, and all other. The all other category accounts for 41% of all outages over the past five years. Table 2 in the Executive Summary also shows the outage hours in numerical format for the past five-year period ending in 1999.

III. STATUS OF CURRENT REPORTS

A. Status of Previous 1995-1998 CWP Items

Code	Description	Total Cost	Status
	Conversions and Line Changes - Series 300		
300.21	Convert 0.6 miles, 3-ph #3/0 to 477 ACSR, Drumbeat - Ft. Apache Ckt.	$30,660	(1) Not Needed
300.23	Convert 5.3 miles, 4.16/2.4 to 24.9/14.4 kV, Round Valley - Ckt. 182	$204,050	(2) Carryover
300.24	Inset 15 poles, Linden - Lakeside Ckt.	$13,500	Complete
300.25	Replace existing get-aways with 500 MCM Al UG, Drumbeat Sub.	$23,000	Complete
300.26	Replace existing get-aways with 4/0 Al UG, Wagon Wheel - Ckts. 151 & 152	$34,500	Complete
300.27	Inset 70 poles, Springer Mountain - Ckt. 71	$63,000	(3) Carryover
300.28	Inset 63 poles, Concho - Ckt. 163	$56,700	(3) Carryover
300.29	Inset 118 poles, Stevens - Ckt. 141	$106,200	Complete
300.30	Inset 80 poles, Stevens Ckt. 142	$72,000	Complete
300.31	Replace 6.9 miles, HMW cable with new cable, Pinetop Lakes - Ckts. 1 & 3	$936,000	(4) Not Needed
300.32	Convert 5.2 miles, 3-ph line to 4/0 ACSR, Greer - Greer Ckt.	$223,080	Complete
	New Substations & Switching - Series 400		
400.02	Nutrioso Substation, 69-24.9/14.4 kV, 2,500 kVA	$500,000	Complete
	Miscellaneous Distribution Equipment - Series 600		
607	Conversion Transformers - 66 for Round Valley 4.16/2.4 kV project	$52,008	(2) Carryover
	Line and Station Changes - Series 1000		
1000.5	Inset 8 poles, 69 kV line between Alpine and Stevens Substations	$26,400	Complete
1000.6	Add breaker and relays to Alpine Metering Station	$100,000	Complete
1000.7	Add six fault locating distance relays to various points on 69 kV system	$120,000	(5) Partial
	Total 1995-1998 CWP	$ 2,561,098	

Completed Items	$ 1,158,680	45.24%
Carryover Items	$ 375,758	14.67%
Not Needed	$ 1,026,660	40.09%
Totals	$ 2,561,098	100.00%

(1) - Change in power costs have made this conversion not economically sound.
(2) - Safety hazard on the step-down transformer, existing system does not meet RUS specifications and plan to complete in first year of new work plan.
(3) - New conversion in this area will change the scope of project and locations of some of the pole replacements.
(4) - Partially completed when Cooperative decided to use injections to correct problems with cable.
(5) - Three of six installations installed and the other three were deemed not needed.

B. Status of Current Long Range Plan

Navopache Electric Cooperative's 1986 Long Range Plan (LRP) was prepared by Robert Witter & Associates, Inc. of Albuquerque, New Mexico in 1986 and approved by RUS.

The LRP covered an estimated time frame of 35 years with load levels starting at 49 MW in 1985 and ending with 152 MW in 2011. The LRP projected a 1999 load level of 90 MW and a 2003 load level of 110 MW. The actual 1999 peak was 58 MW and 63 MW in 2003. Consumer growths as projected in the LRP are 37,384 for 1999 and 43,867 for 2003. The actual number of consumers in 1999 was 30,103 and the 2003 projection is 34,988 consumers. The average usage for 1999 in the LRP was 637 kWh per month and the actual usage in 1999 was 558 kWh per month. Load growth in the LRP is 55% high, consumer growth is high by 24.2%, and kWh usage is high by 14.2%.

None of the major facilities as proposed in this plan have been built. One change has occurred to the recommended plan. The Sunrise Ski Resort was proposed in the LRP to be fed from a 69 kV line out of Alchesay Substation. Loads and expansion at the resort have been reduced dramatically from those projected in the LRP. Therefore, the Cooperative has rebuilt the #6 Cu line out of Greer Substation with 477 MCM ACSR for most of the way and used 4/0 ACSR in the town of Greer. These changes are considered adequate for serving the revised loading at the ski resort.

This CWP proposes a second change to the LRP. A new delivery point is proposed at the Springerville Power Plant about 20 miles northeast of Springerville, Arizona. This will require building a step-up substation at the power plant to take 34.5 kV to 69 kV and use a 30/40/50 MVA transfomer. A transmission line will be built from this point to Round Valley Substation, a distance of about 20 miles. The new line will use 795 MCM ACSR conductors. Round Valley Substation will be modified to accept the new 69 kV circuit. This is a slight variation of alternative Plan 2 in the LRP. This plan became a better choice when we discovered we could take delivery at 34.5 kV instead of 345 kV at the power plant.

The Cooperative has experienced less consumer growth and a reduction in overall load growth than projected in the LRP. Their SCADA system has allowed the Cooperative to control their peaks through some load management and voltage reduction at peak load intervals.

It is the opinion of this firm that the LRP remains a valid document for construction planning. Load and consumer growth are below LRP projections but area growth patterns are very similar to those used in the LRP. Therefore, new facilities will still be needed at the proposed locations when loads reach the appropriate level.

C. Operations and Maintenance Report

A copy of RUS's Form 300 - Review Rating Summary is included at the end of this section. The Cooperative provided an Operations and Maintenance report to include with this study and it is in Appendix B of this report.

D. Sectionalizing Study

Robert Witter and Associates, Inc. did the last sectionalizing study done on the entire system in October 1991. This study has been continuously updated as changes to the system have occurred. Most of the recent changes to sectionalizing equipment on the system are to add SCADA control or replace existing devices with ones that do have SCADA capabilities. A new study is recommended once the 69 kV line from Springerville Power Plant to Round Valley is under construction. The new delivery point will significantly impact sectionalizing on the eastern system.

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 comments 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.
You are not required to respond to this collection of information unless this form displays the currently valid OMB control number.

UNITED STATES DEPARTMENT OF AGRICULTURE
RURAL UTILITIES SERVICE

REVIEW RATING SUMMARY

BORROWER DESIGNATION: ARIZONA 13 NAVAJO

DATE PREPARED: AUGUST, 1999

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

PART I. TRANSMISSION and DISTRIBUTION FACILITIES

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

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

PART II. OPERATIONS and MAINTENANCE

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

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)
1994	0.53	2.69	0.21	2.24	5.67	2
1995	0.29	6.65	0.13	2.02	9.09	2
1996	0.47	0.29	0.16	1.26	2.18	3
1997	0.35	1.24	0.19	1.04	2.82	3
1998	0.38	0.02	0.12	1.43	1.95	3

b. Emergency Restoration Plan: 2

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

PART III. ENGINEERING

		(Rating)
11. System Load Conditions and Losses		
a. Annual System Losses	7.10%	3
b. Annual Load Factor	64.0%	3
c. Power Factor at Monthly Peak	99.0%	3
d. Ratios of Individual Substation Annual Peak kW to kVA		3
12. Voltage Conditions		
a. Voltage Surveys		3
b. Substation Transformer Output Voltage Spread		3

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

PART IV. OPERATION AND MAINTENANCE BUDGETS

YEAR	For Previous 2 Years		For Present Year	For Future 3 Years		
	1997	1998				
	Actual $ Thousands	Actual $ Thousands	Budget $ Thousands	Budget $ Thousands	Budget $ Thousands	Budget $ Thousands
Normal Operation	1265.5	2266.8	1293.3	1282.6	1321.2	1368.7
Normal Maintenance	976	1255	1125.1	1418.9	1564.4	1608.2
Additional (Deferred) Maintenance						
Total	$2,242	$3,522	$2,364	$2,702	$2,886	$2,977

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

15. Date Discussed with Board of Directors 8/25/99 *(Date)*

EXPLANATORY NOTES

ITEM NO.	COMMENTS
7.	In 1994 we experienced two major snow storms with very heavy, wet snows. One storm took out the 69 KV line from Saffel Canyon Substation to the Stevens substation for several hours resulting in 2.7 consumer/hours. In 1995 a major snow storm, consisting of extremely heavy snows, hit the system resulting in 6.65 consumer/hours.
2.	The existing Emergency Restoration Plan will be updated in accordance with Bulletin 1730-1, Section 2.2.

		TITLE	DATE
RATED BY:	D. Kent Rhoton James O. Watson	Mgr. Of Engr. Services Mgr. Of Operations	8/24/99 8/24/99
REVIEWED BY:	Wayne A. Retzlaff	MANAGER	8/24/99
REVIEWED BY:	Larry McGraw	RUS GFR	9/1/99

E. Borrower's Statistical Profile

The following items are the comments provided by the Cooperative on the high and low flags on the 1998 Borrower's Statistical Profile. The numbers in front of the comments are the numbers listed for a particular ratio that was flagged.

United States
Department of
Agriculture

Rural Utilities Service

Washington, DC 20250-1500

September 3, 1999

Mr, Wayne Retzlaff, General Manager
Navopache Electric Cooperative, Inc.
P.O. Box 308
Lakeside, AZ 85929

Dear Wayne,

In accordance with RUS Bulletin 1730-1, I made a review and evaluation of the cooperative's electric system and facilities as related to system operations and maintenance during my recent visit to the cooperative.

The objectives of this review are to carry out RUS's responsibilities for loan security to assure that the cooperative's electric plant is being operated and maintained in a safe and satisfactory condition, and that the cooperative is providing an acceptable quality of service to its members.

My review indicates that the cooperative's facilities are being adequately operated and maintained, and that the cooperative has an effective operations and maintenance program. As a result, I have only the following recommendations at this time:

1. Update the emergency restoration plan to provide current personnel and other current data.

2. I compliment you on the pole inspection/treatment program the cooperative has accomplished and recommend that the cooperative continue that program.

I would also like to compliment you, your staff, and the Board of Directors on the excellent job you are doing in carrying out the cooperative's overall maintenance program. I express my appreciation to you, Mr. Kent Rhoton and Mr. Jim Watson for assisting me with this review and for providing transportion to visit the system's facilities.

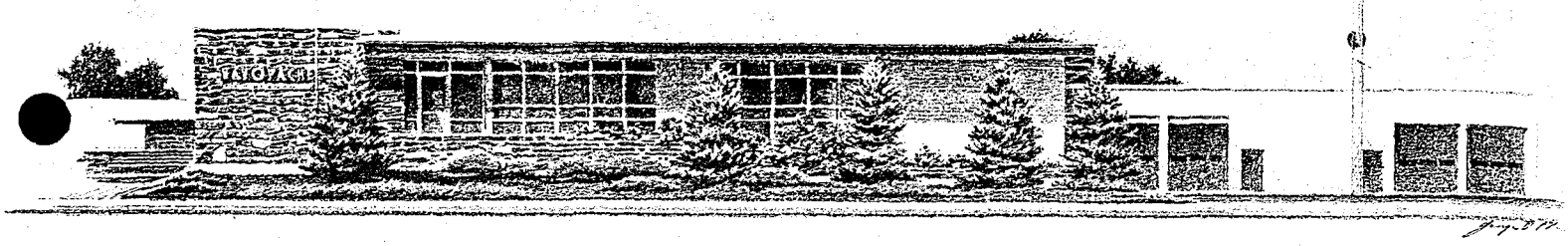
A copy of this letter and your response along with RUS Form 300 will be forwarded to the Southern Regional Division for their information and records and for inclusion in the work plan. I look forward to working with you, your staff and the board in the future to accomplish our objectives.

Sincerely,

Larry W. McGraw
General Field Representative
Rural Utilities Service

cc: Lou Riggs, Deputy Director, SRD

Navopache Electric Co-op



October 14, 1999

Mr. Larry McGraw
General Field Representative
Rural Utilities Service

RE: Letter to Wayne Retzlaff pertaining to your review and evaluation of the Cooperative's electric system, dated September 3, 1999. Copy enclosed.

In response to items #1 & 2, I can tell you that Navopache has a 24 hour dispatch service on duty 5 days a week. The dispatchers have at their command a list of all management and employees names, phone numbers and who is to be called in case of emergency. A management person in addition to a lineman in all five of our service areas are on call 24 hours a day, seven days a week. Although an answering service is utilized to take calls on weekends and holidays, a dispatcher is always on call to take over in case of a so called major outage, i.e. snow storm, lightning damage, public danger, etc., usually involving more than a half dozen consumers without power.

Our SCADA system keeps updated data for all of our substations and many down stream devices. This system is also operated by our dispatchers.

Our communications equipment and vehicles are maintained in house and are always ready in case of an emergency.

This restoration system seems to work very well for our consumers.

I agree with your recommendation in item #2, we should continue our pole inspection/treatment program, at least until such time when poles are replaced by steel or composite poles. Feasibility and economics are always a consideration.

1878 W. White Mountain Blvd. · P. O. Box 308 Lakeside, Arizona 85929
520-368-5118 · 1-800-543-6324 · FAX 520-368-6038

Thank you for your positive comments. As always, they are passed along to our field employees.

Sincerely,

Jim Watson
Manager of Operations

pc: Mr. Retzlaff, General Manager
Kent Rhoton, Manager of Engineering Services

enclosure

REPORT NO. 168.1 BORROWER STATISTICAL PROFILE 9/23/99

AZ 13 SUPPLIED BY: PLAINS ELEC G & T COOP INC

ITEM	BORROWER DATA 1996	1997	1998	MEDIAN VALUES U.S.	PEER GROUP	STATE	STATE VALUES MAX	Q3	Q1	MIN	FLAG
FINANCIAL RATIOS											
1. TIER (ONE YEAR)	1.53	1.27	0.63	2.36	2.42	2.34	220.29	3.12	0.63	0.42	
2. AVERAGE TIER	1.92	1.62	1.40	2.56	2.61	2.40	154.18	2.84	1.50	1.40	LO
3. MTIER (ONE YEAR)	1.49	0.90	0.58	2.02	2.04	2.34	220.26	3.10	0.58	0.39	
4. DSC (ONE YEAR)	1.75	1.61	1.19	2.21	2.05	2.42	98.73	3.38	1.19	1.03	
5. AVERAGE DSC	2.00	1.80	1.68	2.33	2.24	2.15	71.09	4.43	1.74	1.68	LO
6. MDSC (ONE YEAR)	1.73	1.36	1.16	2.01	2.01	2.39	98.72	3.38	1.16	1.01	
7. PRR (ONE YEAR)	5.17	5.38	5.68	6.09	6.11	5.70	8.85	6.07	5.48	5.42	
8. CONTRI.AID/PLANT+CONTRI.AID%	10.39	10.04	9.87	2.39	7.56	6.85	14.62	14.10	4.40	0.93	
9. EQUITY RATIO %	31.66	26.31	24.35	43.55	38.61	34.27	79.36	58.63	24.35	20.63	
10. OPERATING REVENUE / MILE $	10224.76	10250.29	10201.21	6112.56	6198.06	13535.92	108163.31	36752.33	8604.30	6423.00	
11. GENERAL FUNDS/TOTAL PLANT %	8.20	4.36	3.03	4.92	8.36	7.98	75.42	17.39	3.03	1.14	
12. CURRENT RATIO	2.00	1.58	1.13	1.71	2.32	2.61	3.43	3.40	1.13	0.49	
13. OPERATING MARGINS/RATE BASE%	1.40	0.34	-1.33	2.27	2.02	-0.55	4.85	3.71	-2.45	-3.50	
14. RATE OF RETURN ON RATE BASE%	5.73	4.45	2.71	5.37	5.36	2.88	7.26	7.08	1.38	-3.30	
15. PAT.CAP.RETIRED/ TOT P.CAP.%	14.91	20.20	21.38	18.73	8.47	21.38	36.17	35.55	0.00	0.00	
16. PAT.CAP.RETIRED/NET MARGINS%	22.76	49.84	16.47	26.60	0.18	16.47	81.64	25.00	0.00	0.00	
CONSUMER RATIOS											
17. AVG. TOTAL CONSUMERS SERVED	27135.00	28142.00	29163.00	10270.00	10407.00	28206.00	39742.00	30006.00	3088.00	2210.00	
18. CONSUMERS / MILE (DENSITY)	10.02	10.29	10.43	5.47	5.81	9.65	23.66	11.26	5.10	4.92	
19. CONSUMERS / EMPLOYEE	259.83	270.24	268.94	254.65	268.94	256.20	366.31	298.24	185.58	93.06	
20. LONG TERM DEBT / CONSUMER $	1018.84	1018.00	1006.80	1344.54	1011.73	1212.36	1651.94	1490.73	1006.80	53.12	
21. DIST+GENERAL PLT/ CONSUMER $	1726.56	1759.99	1815.61	2718.22	2368.67	2519.71	4283.52	3296.83	1815.61	1763.04	
22. NET MARGINS / AVG.CONSUMER $	29.08	14.67	-20.31	87.67	63.81	77.54	653.32	150.43	-20.31	-44.28	
23. AVG.MO.KWH/RESD CONS EX SEAS	567.45	586.32	607.98	1088.15	439.58	620.70	799.08	743.06	605.36	407.28	
24. AVG.MO.KWH/RESD CONS	440.96	454.94	463.91	1043.95	439.58	620.70	799.08	743.06	463.91	407.28	
25. CONS. ACCT. EXP./ AVG.CONS $	46.28	46.74	60.20	40.01	57.12	59.31	66.97	66.90	41.79	36.12	
26. ADM. & GEN. EXP./ AVG.CONS $	108.46	113.18	94.94	79.48	94.42	137.11	176.98	169.81	94.94	88.88	
27. CUST SERV &INFORM/AVG.CONS $	5.06	4.96	8.40	9.56	2.96	6.41	16.94	8.95	2.76	0.17	
28. O+M+A&G+CON ACCT/ AVG.CONS $	229.97	239.42	273.91	260.79	226.13	319.14	437.90	341.07	273.91	174.17	
29. PWR COST+TAX+DEP+INT/AVGCON$	777.83	761.60	725.99	919.36	762.52	1054.22	20474.23	1396.95	873.04	725.99	LO
EMPLOYEE COSTS											
30. NUMBER OF EMPLOYEES	106.00	106.00	110.00	41.00	33.00	86.00	161.00	110.00	33.00	12.00	
31. AVERAGE RATE PER HOUR $	18.37	19.86	20.40	18.19	15.83	18.41	30.70	20.40	15.28	14.35	
32. OVERTIME HOURS/TOTAL HOURS %	3.17	5.66	5.00	5.25	4.09	5.00	7.99	5.52	3.14	1.75	
33. CAPITLZD PAYROLL/TOTAL PAY %	17.30	22.05	22.35	23.11	22.35	18.24	27.90	22.35	10.23	8.79	

REPORT NO. 168.1
AZ 13

BORROWER STATISTICAL PROFILE
SUPPLIED BY: PLAINS ELEC G & T COOP INC

9/23/99

	ITEM	BORROWER DATA 1996	1997	1998	MEDIAN VALUES U.S.	PEER GROUP	STATE	STATE VALUES MAX	Q3	Q1	MIN	FLAG
	MWH SOLD											
34.	MWH SOLD / 1000	262.74	282.46	297.90	184.37	140.01	476.30	1015.95	815.64	297.90	72.63	
35.	ANNUAL % CHANGE IN KWH SOLD%	1.60	7.51	5.46	4.72	2.49	3.66	10.66	10.38	-22.97	-37.36	
36.	MWH / MILE OF LINE	95.57	101.42	105.04	83.47	56.90	137.62	2384.85	675.29	105.04	96.87	
37.	REVENUE / MWH(RESD EX SEAS)$	108.06	103.30	99.60	74.92	117.63	86.50	103.89	101.78	79.03	76.95	
38.	OP.REV / MWH(TOTAL SALES) $	106.98	101.07	97.12	71.55	94.25	71.28	98.36	97.12	54.42	45.35	
39.	OP.REV LESS COST POWER/MWH $	41.82	39.75	38.09	29.79	38.09	29.97	44.57	38.09	11.99	1.02	
40.	COST OF POWER / MWH SOLD $	65.17	61.32	59.03	41.63	58.36	44.33	59.03	53.79	41.67	36.34	HI
41.	COMM+IND+IRR MWH/TOTAL MWH %	50.85	51.01	50.80	30.25	51.88	50.80	96.10	75.90	47.83	26.80	
42.	O+M+A&G+CON ACCT EXP/ MWH $	23.75	23.85	26.81	15.17	20.07	15.98	27.26	26.81	6.02	0.95	
	PLANT INVESTMENT											
43.	TOTAL PLANT / 1000 $	56752.97	60433.73	64412.49	32324.95	29487.92	64412.49	158942.00	116226.37	12561.77	5610.79	
44.	TOTAL PLANT / MWH SOLD $	216.01	213.95	216.23	183.27	215.14	212.95	265.20	244.02	72.78	5.52	
45.	TOTAL PLANT / MILE OF LINE $	20644.95	21699.72	22712.44	15352.79	11389.70	25690.58	49146.14	33581.75	20877.13	13170.86	
46.	O+M EXP/ $1000 TOTAL PLANT $	35.97	37.02	53.77	44.33	39.12	40.72	76.42	53.77	23.37	17.76	
47.	TAXES / $1000 TOTAL PLANT $	12.78	12.15	0.18	5.40	1.99	12.37	20.74				
48.	ACCUM. DEPREC/PLANT IN SVC %	39.82	40.64	40.86	30.84	37.67	33.59	52.97	40.86	31.60	21.37	
49.	NET NEW PLANT/TOTAL PLANT %	6.20	6.49	6.58	5.43	5.86	6.58	13.87	7.89	5.69	3.42	
50.	LINE TRANSFORMER/CONSUMER $	323.65	339.91	353.68	432.09	393.97	474.15	606.02	573.48	405.94	353.68	LO
51.	GENERAL PLANT / CONSUMER $	268.60	276.49	275.30	311.51	281.78	318.72	737.92	563.89	256.46	229.78	
52.	HEADQTR PLANT / CONSUMER $	48.21	51.35	49.73	96.54	58.97	94.69	277.59	171.50	68.61	49.73	LO
	LONG TERM DEBT											
53.	LONG TERM DEBT/TOTAL ASSETS%	58.64	63.71	63.29	47.36	49.17	51.52	63.67	63.29	27.28	1.28	
54.	INTEREST L.T. /AVG L.T.DEBT%	5.44	5.30	5.47	5.28	5.32	5.34	5.92	5.78	5.13	4.68	
55.	REA DEBT / TOTAL L.T. DEBT %	67.99	70.14	71.56	69.65	75.71	71.33	82.34	72.28	69.75	69.26	
	REVENUE											
56.	INTEREST EXP. / OP.REVENUE %	5.34	5.31	5.57	5.36	5.24	4.36	6.51	6.34	4.23	0.01	
57.	INT. EXP./OP.REV-POWER COST%	13.67	13.51	14.21	13.16	13.25	14.21	19.33	15.33	9.65	0.64	
58.	COST OF POWER / OP.REVENUE %	60.91	60.67	60.78	58.04	61.37	58.61	97.75	77.96	54.80	54.69	
	OPERATING RATIOS											
59.	ELEC.INV. TURNOVER RATIO	0.97	1.15	1.41	1.54	0.80	1.01	3.91	1.43	0.61	0.45	
60.	ELEC.INVENTORY/TOTAL PLANT %	1 65	1.97	1.82	1.22	1.79	1.82	3.63	2.21	0.95	0.34	
61.	CONSTR W.I.P./PLT ADDITIONS%	34.22	54.65	57.83	23.33	26.30	28.73	199.67	57.83	14.50	10.94	
62.	NET NEW SERVICE/TOTAL SERV %	2.87	4.16	3.54	2.04	3.06	3.37	6.56	3.55	2.55	1.22	
63.	IDLE SERVICE/TOTAL SERVICE %	4.26	4.27	4.06	8.33	5.62	7.84	15.41	10.37	4.06	0.18	
64.	ANNUAL LOAD FACTOR %	67.32	63.73	76.84	51.35	69.26	63.10	76.84	73.34	56.38	52.56	HI
65.	SYSTEM LOSS %	8.13	7.56	7.14	6.82	6.33	6.16	10.53	9.32	3.10	0.21	
66.	TOT.HRS.OUTAGE PER CONS(1YR)	2.17	2.82	1.95	4.03	3.35	2.51	7.14	4.46	1.57	1.27	
67.	A/R OVER 60 DAYS /OPER.REV %	0.04	0.02	0.03	0.23	0.53	0.18	6.75	1.50	0.03	0.01	
68.	AMT. WRITTEN OFF /OPER.REV %	0.08	0.09	0.12	0.18	0.12	0.16	1.10	0.28	0.12	0.00	
69.	OTHER INTR INC-EXP/$1000 PLT	4.27	2.92	2.26	3.12	4.17	4.02	44.58	8.45	1.50	0.44	
70.	MODIFIED EQUITY %	23.15	23.45	21.54	35.77	32.80	32.48	78.23	58.63	21.54	19.19	
71.	OTIER (ONE YEAR)	1.34	1.13	0.69	1.86	1.65	0.91	3.02	2.15	0.33	-23.34	
72.	AVERAGE OTIER	1.70	1.44	1.24	2.07	1.88	2.15	52.22	2.41	1.25	1.24	LO
73.	ODSC (ONE YEAR)	1.64	1.52	1.23	1.91	1.84	2.26	2.99	2.77	1.23	0.97	
74.	AVERAGE ODSC	1.86	1.69	1.58	2.05	1.85	2.08	30.33	4.03	1.58	1.52	

May 8, 2000

NAVOPACHE ELECTRIC COOPERATIVE, INC.

Borrowers Statistical Profile

2. AVERAGE TIER – average highest 2 of last 3 years
Average TIER is low because Navopache has experienced growth of 3 to 4% annually for the last few years generally increasing our costs, and our last rate adjustment was in 1992. Our plan is to file a rate case in 2000 with the Arizona Corporation Commission (ACC).

5. AVERAGE DSC - average of highest 2 of last 3 years
Average DSC is low because Navopache has experienced 3 to 4% annual growths for the last few years, this has required additional new plant and increased loans from RUS. NEC has also not filed for a rate increase since 1992. Our plan is to file a rate case in 2000 with the Arizona Corporation Commission (ACC).

29. PWR COST+TAX+DEP+INT/AVGCON$
Navopache's average consumer base has grown over 1,000 per year for the last few years lowering our average costs. Also, property taxes are no longer shown in line 13 of RUS form 7, part A, per RUS.

40. COST OF POWER / MHW SOLD $
Navopache has a different and more expensive power supplier than the other cooperatives in Arizona.

50. LINE TRANSFORMER/CONSUMER $
Navopache's average consumer base has grown over 1,000 per year for the last few years lowering our average cost of line transformers per consumer.

51. HEADQTR PLANT/CONSUMER $
Navopache has older headquarters and no immediate plans to build or remodel our existing headquarters. Also, Navopache's consumer base has grown by over 1,000 per year for the last few years,

64. ANNUAL LOAD FACTOR

Navopache implements and uses a SCADA system to monitor and control demand throughout our service territory. The peak demand shown on RUS Form 7, part R, line 19 is directly form our Plains power bill.

71. AVERAGE OTIER

Navopache needs a rate adjustment and is planning to apply to the ACC in 2000 to increase operating revenues.

IV. PROJECTED SYSTEM

A. Design Criteria

In 2003, Navopache Electric Cooperative is expected to provide electric service to 34,988 consumers. This number consists of 34,557 domestic consumers using an average of 522 kWh per month, 211 irrigation, 183 commercial users, 13 large commercial users, and 23 street lights. The projected number of consumers and usage has been determined using actual history, as well as, the current Power Requirements Study (PRS), dated August 1998. This CWP is projecting a net gain of 1,250 consumers per year that requires building to about 1,450 consumers per year. The Work Plan Design Data sheet depicts the projected load additions anticipated during the planning period. It is shown on page IV - 4.

B. Member Extensions and Ordinary Replacements

Actual historical cost data associated with member extension and ordinary replacement requirements of the system was gathered for a 24-month period from November 1996 to October of 1998. The table on page IV - 5 shows a breakdown of the costs used in ordinary replacements for distribution and page IV – 6 is transmission. A breakdown of poles and crossarms, as well as, other miscellaneous items in the ordinary replacement category are shown. Original costs and loan fund costs are shown for each of these items. An average cost is also given for each of the categories shown. All of the data has been summarized from a tabulation of completed work orders and special equipment records for the historical period.

Page IV - 7 shows the projected Member Extension money from the 2000-2003 CWP. The chart on page IV - 8 "Actual Experience - May 1992 to April 1994" is a summary which lists the costs that are associated with member extensions for the referenced period. Projections for the 1995-1998 Construction Work Plan can be seen on page IV - 9. These charts also show the breakdown of member extension money into overhead and underground requirements for line and transformers, as well as, meter, ordinary replacement and security light projections and requirements.

A net gain of 5,000 consumers is projected for the four year period. Actual records indicate a construction/net gain ratio of 1.16:1. This ratio has been used for the projections in this planning study. This will require building to 5,800 consumers. UG transformers to consumers are 2.72 consumers per transformer and OH transformers are 1.48 consumers per

transformer. These ratios were used in projecting future transformer needs. Meters are projected at a 1:1 ratio.

C. Substation Area Analysis and System Improvements

This section of the report will examine voltage drop, losses, and conductor loading experienced on the system during the peak month of December 1999. These same conditions will be examined for the projected peak demand in 2003. Potential new large power loads and new consumer growth were added to the December 1999 system to develop the expected peak demand in 2003.

Chart 2, on page IV - 10, lists the peak loading data for 2003 on each substation. It shows transformer capacities and rated voltages at each substation. Loads are shown in kW, kVAR, and kVA. Percents are shown for the amount of capacity used.

Appendix C of this report contains a chart that summarizes the voltage conditions, load flows, losses, and conductor loading for each circuit on the distribution system. These quantities are given for the present system (1999) and the projected system (2003). This provides a side-by-side comparison of consumer growth, loading, losses, conductor loading, and voltage drop. The chart shows the number of consumers that are not kW metered and circuit loading in kW and kVAR. It shows circuit losses, heaviest loaded conductors, maximum voltage drop, and the furthest point on the circuit from the substation. This provides a good indication of the economics of line conversion. Lines loaded to 55% of their ampacity ratings may be economical to convert on Navopache's system. This is mainly determined by the cost of construction and power losses. Voltage drops on the chart show the maximum regulated and unregulated drops on the circuit determined by power flow analyses. Regulated voltage drop should be 8.0 volts or less for each circuit. The last item on the chart is the farthest point on the circuit from the substation.

Sample power flows for the existing system with projected loading and projected system and loading are in Appendix C following the summary chart. The first sample is projected system loading on the existing system. The second sample reflects projected system loading with the recommended system improvements in place.

Work Plan Design Data

Consumer Classification	Actual 1999 Data (Year Ending) of Cons.	kWh/Mo/ Cons.	kWh per Year	Projected 2003 Requirements of Cons.	kWh/Mo/ Cons.	kWh per Year	2003 New Cons.
Residential	16,851	601	121,535,716	19,673	572	135,095,100	2,887
Seasonal	10,179	229	27,928,011	12,021	209	30,174,480	1,886
Commercial <= 50 kVA	2,652	1,552	49,405,550	2,863	1,486	51,047,400	216
Domestic Sub-Total	29,682	558	198,869,277	34,557	522	216,316,980	4,990
Irrigation	205	3,007	7,408,279	211	3,500	8,862,000	6
Commercial > 50 kVA <= 1 M\	178	30,335	64,794,925	183	33,014	72,499,496	5
Commercial > 1 MVA	13	178,637	27,867,400	13	199,878	31,181,029	0
Street Lighting	23	3,202	883,731	23	3,198	882,648	0
Borrowers Own Use	1	75,897	910,763	1	82,667	992,000	0
Non Domestic Sub-Total	420		101,865,098	431		114,417,173	11
Total Sales			300,734,375			330,734,153	
System Losses			21,036,704			26,816,300	
Grand Totals	30,103		321,771,079	34,988		357,550,453	5,000
Percent System Losses			6.54%			7.50%	
System Peak kW Demand			58,260			63,446	

NAVOPACHE ELECTRIC COOPERATIVE, INC.
Arizona 13 Navajo

REPLACEMENTS - Distribution
Actual Experience from 11/96 to 10/98

Item	Number	Total Cost	Average Total Cost
Poles			
35' Poles and Under	41	$12,752	$311
40' and 45' Poles	27	$11,959	$443
Totals	68	$24,711	$363
Crossarms			
8' Crossarms	110	$12,150	$110
10' Crossarms	14	$1,702	$122
Totals	124	$13,851	$112
Arresters & Cutouts			
Arresters	4	$464	$116
Cutouts	1	$107	$107
Combination Cutouts	8	$1,690	$211
Totals	13	$2,262	$174
Miscellaneous Units			
Cluster Mount	1	$141	$141
Epox. String Insulators	58	$4,039	$70
Anchors	2	$169	$84
Totals	61	$4,349	$71
GRAND TOTALS		$45,173	

NAVOPACHE ELECTRIC COOPERATIVE, INC.
Arizona 13 Navajo

REPLACEMENTS - Transmission
Actual Experience from 11/96 to 10/98

Item	Number	Total Cost	Average Total Cost
Poles			
40' Poles	2	$2,831	$1,415
45' Poles	21	$29,724	$1,415
55' Poles	8	$24,565	$3,071
Totals	31	$57,120	$1,843
Crossarms			
12' to 16' Crossarms	35	$26,829	$767
22' to 26' Crossarms	7	$14,494	$2,071
Totals	42	$41,323	$984
Miscellaneous Units			
String Insulators 10"	44	$18,096	$411
Horizontal Post Insulators	61	$26,066	$427
Totals	105	$44,162	$421
GRAND TOTALS		$142,604	

NAVOPACHE ELECTRIC COOPERATIVE, INC.
ARIZONA 13 NAVAJO
COMPARISONS OF MEMBER EXTENSION & ORDINARY REPLACEMENTS
1995-1998 FOUR YEAR WORK PLAN PROJECTIONS

			Loan Funds Requested		Total Cost		Contributions
Member Extensions	Cons.	Quan.	Avg. Cost	Total	Avg. Cost	Total	Total
New UG 1 phase	608	19.80	$16,857	$333,769	$28,038	$555,152	$221,383
New UG 3 phase	20	0.71	$166,399	$118,143	$166,399	$118,143	$0
UG Consumers	628	20.51	$22,034	$451,912	$32,828	$673,295	$221,383
New OH 1 phase	2,723	88.68	$26,038	$2,309,050	$28,607	$2,536,869	$227,819
New OH 3 phase	15	14.12	$27,504	$388,356	$35,211	$497,179	$108,823
OH Consumers	2,738	102.80	$26,239	$2,697,406	$29,514	$3,034,048	$336,642
Sub-Total - Line	3,366	123.31		$3,149,318		$3,707,343	$558,025
Avg. per Consumer		0.037		$936		$1,101	
Special Equipment							
Transformers - URD		122	$2,434	$296,948	$2,434	$296,948	$0
Transformers - OH		1,256	$788	$989,728	$788	$989,728	$0
Meters - Regular		2,448	$85	$208,080	$85	$208,080	$0
Meters - Special		1,918	$247	$473,746	$247	$473,746	$0
Meters - VT's & CT's		220	$415	$91,300	$415	$91,300	$0
Increased Capacity		130	$845	$109,850	$845	$109,850	$0
Security Lights		380	$784	$297,920	$784	$297,920	$0
Sub-Total - Equipment				$2,467,572		$2,467,572	$0
Ordinary Replacements							
Distribution Poles		280	$156	$43,680	$329	$92,120	$48,440
Distribution Crossarms		240	$71	$17,040	$131	$31,440	$14,400
Arresters & Cutouts		80	$11	$880	$240	$19,200	$18,320
EPOX-STG Insulators		110.0	$22	$2,420	$68	$7,480	$5,060
				$64,020		$150,240	$86,220
Transmission Poles		15	$1,794	$26,910	$1,794	$26,910	$0
Transmission Crossarms		160	$774	$123,840	$774	$123,840	$0
Transmission Anchors/Guys		5	$698	$3,490	$698	$3,490	$0
Transmission Anchors/Guys		6	$431	$2,586	$431	$2,586	$0
				$156,826		$156,826	$0
Sub-Total - Replacements				$220,846		$307,066	$86,220
GRAND TOTAL				$5,837,736		$6,481,981	$644,245

"Quan." shown for line construction is measured in miles, including Primary, Secondary and Services.

NAVOPACHE ELECTRIC COOPERATIVE, INC.
ARIZONA 13 NAVAJO
COMPARISONS OF MEMBER EXTENSION & ORDINARY REPLACEMENTS
NOVEMBER 1996 TO OCTOBER 1998 ACTUAL CONSTRUCTION (24 MONTHS)

			Loan Funds Requested		Total Cost		Contributions
Member Extensions	Cons.	Quan.	Avg. Cost	Total	Avg. Cost	Total	Total
New UG 1 phase	937	20.88	$17,648	$368,536	$27,268	$569,428	$200,892
New UG 2 phase	1	0.01	$312,004	$3,058	$312,004	$3,058	$0
New UG 3 phase	29	1.05	$154,365	$162,438	$216,672	$228,003	$65,565
UG Consumers	967	21.94	$24,336	$534,032	$36,478	$800,489	$266,457
New OH 1 phase	1,749	87.21	$18,781	$1,637,951	$21,240	$1,852,369	$214,418
New OH 3 phase	26	2.95	$57,462	$169,358	$58,423	$172,189	$2,831
OH Consumers	1,775	90.16	$20,046	$1,807,309	$22,455	$2,024,558	$217,249
Sub-Total - Line	2,742	112.10		$2,341,341		$2,825,047	$483,706
Avg. per Consumer		0.041		$854		$1,030	
Special Equipment							
Transformers - URD		356	$1,549	$551,333	$1,549	$551,333	$0
Transformers - OH		1,202	$739	$888,822	$739	$888,822	$0
Meters - Regular		3,438	$132	$453,312	$132	$453,312	$0
Meters - Special		229	$587	$134,473	$587	$134,473	$0
V.T.'s and P.T.'s		214	$131	$28,070	$131	$28,070	$0
Increased Capacity Services		146	$450	$65,681	$450	$65,681	$0
Security Lights		328	$813	$266,716	$813	$266,716	$0
Sub-Total - Equipment				$2,388,406		$2,388,406	$0
Ordinary Replacements							
Distribution Poles		68	$206	$13,986	$363	$24,711	$10,725
Distribution Crossarms		124	$46	$5,696	$112	$13,851	$8,155
Miscellaneous		61	$24	$1,493	$71	$4,349	$2,856
				$21,175		$42,911	$21,736
Transmission Poles		31	$948	$29,392	$1,843	$57,120	$27,728
Transmission Crossarms		42	$506	$21,263	$984	$41,323	$20,060
Transmission Insulators		105	$216	$22,724	$421	$44,162	$21,438
				$73,379		$142,604	$69,225
GRAND TOTAL				$4,824,301		$5,398,969	$574,668

"Quan." shown for line construction is measured in miles, including Primary, Secondary and Services.

NAVOPACHE ELECTRIC COOPERATIVE, INC.
ARIZONA 13 NAVAJO
COMPARISONS OF MEMBER EXTENSION & ORDINARY REPLACEMENTS
2000 - 2003 FOUR YEAR PROJECTIONS

Inflation Rate (Yearly) = 3.00% 4 Year Average Inflation Rate Used = 7.73%

			Loan Funds Requested		Total Cost		Contributions
Member Extensions (*)	Cons.	Quan.	Avg. Cost	Total	Avg. Cost	Total	Total
New UG 1 phase	1,982	44.17	$19,012	$839,760	$29,376	$1,297,538	$457,778
New UG 1 phase	2	0.02	$336,117	$6,722	$336,117	$6,722	$0
New UG 3 phase	61	2.21	$166,295	$367,512	$233,417	$515,852	$148,340
UG Consumers	2,045	46.40		$1,213,994		$1,820,112	$606,118
New OH 1 phase	3,700	184.50	$20,233	$3,732,989	$22,881	$4,221,545	$488,556
New OH 3 phase	55	6.23	$61,903	$385,656	$62,938	$392,104	$6,448
OH Consumers	3,755	190.73		$4,118,645		$4,613,649	$495,004
Sub-Total - Line (*)	5,800	237.13		$5,332,639		$6,433,761	$1,101,122
Avg. per Consumer		0.041		$919		$1,109	
Special Equipment							
Transformers - URD (1)		753	$1,668	$1,256,004	$1,668	$1,256,004	$0
Transformers - OH (1)		2,543	$797	$2,026,771	$797	$2,026,771	$0
Meters - Regular		5,684	$142	$807,128	$142	$807,128	$0
Meters - Special		116	$633	$73,428	$633	$73,428	$0
V.T.'s and P.T.'s		440	$141	$62,040	$141	$62,040	$0
Increased Capacity Services		300	$485	$145,500	$485	$145,500	$0
Security Lights		660	$876	$578,160	$876	$578,160	$0
Sub-Total - Equipment				$4,949,031		$4,949,031	$0
Ordinary Replacements							
Distribution Poles		140	$222	$54,740	$391	$54,740	$0
Distribution Crossarms		250	$49	$30,000	$120	$30,000	$0
Arresters/Cutouts/Anchors/Guys		120	$26	$9,240	$77	$9,240	$0
Sub-Total - Dist. Replacements				$93,980		$93,980	$0
Transmission Poles		70	$1,021	$138,950	$1,985	$138,950	$0
Transmission Crossarms		90	$545	$95,400	$1,060	$95,400	$0
Transmission Insulators		220	$233	$99,660	$453	$99,660	$0
Sub-Total - Dist. Replacements				$334,010		$334,010	$0
GRAND TOTAL				$10,375,650		$11,476,772	$1,101,122

"Quan." shown for line construction is measured in miles, including Primary, Secondary and Services.
Average cost of all units are inflated by 3.5% per year over actual construction and equipment costs.
(*) - Total Connects projected at 1450/year, net gain projected at 1250/year, connects to net gain ratio = 1.16:1
(1) - UG Consumers/Transformer Ratio = 2.72:1, OH Consumers/Transformers = 1.48:1

Projected Peak Substation Loading

	VOLTAGE kV	TRANSFORMER RATINGS MVA	BASE CAPACITY kVA	PEAK kW	PEAK PF	PEAK kVA	BASE CAPACITY USED
CORONADO DELIVERY SUBSTATIONS							
Alpine	69-24.94/14.4	3.00	3,000	996	99.5%	1,001	33.37%
Concho	69-24.94/14.4	5.00	5,000	2,890	99.8%	2,896	57.92%
Frisco Ridge	69-14.4	0.10	100	29	92.4%	31	31.39%
Green's Peak	69-14.4	0.25	250	111	94.3%	118	47.08%
Greer	69-24.94/14.4	5.00	5,000	3,323	96.2%	3,454	69.09%
Jenk's Ranch	69-13.8	0.10	100	19	90.0%	21	21.11%
Luna	69-24.94/14.4	1.00	1,000	200	98.0%	204	20.41%
Nutrioso	69-24.94/14.4	2.50	2,500	891	92.9%	959	38.36%
Round Valley	69-24.94/14.4	7.50	7,500	4,683	99.3%	4,716	62.88%
Saffel Canyon	69-24.94/14.4	7.50	7,500	3,309	99.0%	3,342	44.57%
St. John's	69-24.94/14.4	7.50	7,500	4,126	99.5%	4,147	55.29%
Steven's	69-24.94/14.4	7.50	7,500	1,615	99.4%	1,625	21.66%
Totals				22,192		22,514	
Projected kW	500-69	100.00	100,000	19,655			
LINDEN DELIVERY POINT							
Linden	69-24.94/14.4	6.00	6,000	6,263	99.4%	6,301	105.01%
Totals				6,263		6,301	
Projected kW	69	--	--	6,263			
SHOW LOW DELIVERY SUBSTATIONS							
Alchesay	69-24.94/14.4	7.50	7,500	2,583	98.5%	2,622	34.96%
Drumbeat	69-24.94/14.4	10.00	10,000	9,101	97.1%	9,373	93.73%
Pinetop Lakes	69-24.94/14.4	10.00	10,000	6,854	99.3%	6,902	69.02%
Springer Mountain	69-24.94/14.4	10.00	10,000	8,721	99.9%	8,730	87.30%
Wagon Wheel	69-24.94/14.4	10.00	10,000	9,477	98.7%	9,602	96.02%
Totals				36,736		37,229	
Projected kW	69	--	--	33,229			
ZENIFF DELIVERY POINT							
Heber	69-24.94/14.4	7.50	7,500	5,841	99.3%	5,882	78.43%
Totals				5,841		5,882	
Projected kW	69	--	--	5,841			

Alchesay's - McNary Step-down Transformer							
McNary	24.94-2.4	0.50	500	29	95.5%	30	6.07%
Totals				29		30	

The remaining paragraphs in this report will discuss the problem areas and proposed system improvements. These discussions are in alphabetical order.

Appendix E of this report contains several present worth analysis sheets for economic conductor sizing and option analysis for proposed projects. The investment rate is assumed to be 7% for these analyses.

1. Alchesay Substation Area

A portion of the McNary 2.4 delta system will be converted to 24.94/14.4 kV operation and served from this feeder. The McNary step-down transformer is served from this feeder. It will move about 200 kW off of the McNary step-down transformer. This will entail the conversion of 2.0 miles of line and require the purchase and installation of 30 distribution transformers. No voltage problems drop problems are expected on the circuit.

Summary of Construction, Alchesay Substation

300.33 - Year 2003

Convert 2.0 miles of 2.4 kV delta line to 24.94/24.4 kV operation.
This will include all of the line running north of node 2914.
2.0 miles @ $41,700/mile $83,400

608 - Year 2003

Replace 30 distribution transformers needed in 2.4 kV delta to 24.94/14.4 kV conversion.
30 transformers @ $797 each $23,910

2. Concho Substation Area

The Cooperative will install 63 inset poles in the Vernon area on Circuit 163. These poles will be used to reduce span lengths and provide greater reliability in ice loading conditions. It will involve line sections 6551 and 6553 of this circuit. This is a carryover project from the previous work plan. New conversion of single-phase to three-phase line changed the scope of project and locations of poles to be replaced.

Voltage drops on the Concho Valley circuit are excessive. Under projected load conditions voltage drop reached 15.4 volts and total uncorrected voltage drop on the circuit is 22.6 volts. This is due to the unbalance caused by the heavily loaded single-phase line at the end of the circuit. It has about 1000 kW on it and the entire circuit has 2300 kW. We are recommending the conversion of 8.8 miles of single-phase line to three-phase using 1/0 ACSR conductor. The existing single-phase regulator at node 6536 will be removed. A set of three single-phase regulators will be placed at node 6532. Corrected voltage drop will be reduced to 5.8 volts and uncorrected voltage drop on the circuit will be reduced to 8.8 volts. Losses will be reduced by 100 kW and these savings will justify about 67% of the projects cost.

Summary of Construction, Concho Substation

300.28 - Year 2000-2003

Inset 63 poles on line sections 6551 and 6553 to reduce span lengths.

63 poles @ $984 each $62,000

300.34 - Year 2000

Convert 8.8 miles of single-phase to three-phase using 1/0 ACSR, Nodes 6536 to 6542.

8.8 miles @ $44,000/mile $387,200

605 - Year 2000

Install a set of three single-phase regulators at node 6532. Remove a single-phase regulator at node 6536.

3 Regulators @ $11,000 each $33,000

3. Heber Substation Area

The first 1.6 miles of the Overgaard circuit is heavily loaded. We are recommending the conversion of this 1/0 ACSR and #6 Cu line to 477 MCM ACSR. The first four line sections that make up this distance have an average loading of 41.5%, 75.8%, 71.7%, and 68.4%. The worst phase is loaded to 92.8% of it ampacity rating. Voltage drop on the circuit is not excessive, 7.2 volts under projected loading conditions.

In addition, the Cooperative will convert the v-phase line from nodes 2644 to 2648 to three-phase operation using #2 ACSR conductor, a distance of 1.72 miles. These changes will reduce the voltage drop on the circuit to 4.7 volts. Circuit losses will be reduced by 70 kW. Loss savings on the circuit will justify about 92% of both projects.

Summary of Construction, Heber Substation

300.35- Year 2001

Convert 1.6 miles of three phase 1/0 ACSR and #6 Cu line to 477 MCM ACSR, substation to node 2616.

1.6 miles @ $75,000/mile $120,000

300.36 - Year 2001

Convert 1.72 miles of v-phase line to three-phase line using #2 ACSR conductor, nodes 2644 to 2648.

4. Pinetop Lakes Area

The Cooperative will convert 0.8 miles of v-phase line to three-phase operation. Nodes 7006 to 7008. This conversion will provide better balance to the circuit. Voltage drops on the circuit are low with the worst case being 0.7 volts before conversion and 0.6 volts after conversion. The conversion is required to serve new three-phase loads near the end of the line.

Summary of Construction, Pinetop Lakes Substation

300.37 - Year 2002

Convert 0.8 miles of v-phase line to #2 ACSR three-phase, nodes 7006-7008.

0.6 miles @ $50,000/mile $40,000

5. Saffel Canyon Substation Area

This substation was primarily built to serve the sawmill in Eagar. This facility was recently shutdown. The Cooperative will use the existing feeder from this substation to pick up load, about 2800 kW, from Circuit 182 of Round Valley Substation. It will serve the load on the south and east of Eagar and Springerville. No new construction is

required for this move. It will reduce the load on Round Valley and keep the Saffel Canyon Substation at the MW level it was prior to the sawmill shutting down.

The Cooperative will convert the remainder of the 4.16/2.4 kV lines in the Eagar area to 24.94/14.4 kV operation. This project is a carryover from the previous work plan. The step-down transformer is considered a safety hazard and the existing lines do not meet RUS specifications. This project will be completed in the first year of the workplan. It will entail converting 5.3 miles of line and changing out 66 distribution transformers. Voltage drop on the system will improve marginally and loss savings are minimal.

Summary of Construction, Saffel Canyon Substation

300.23 - Year 2000

Convert 5.3 miles of 4.16/2.4 kV line to 24.94/24.4 kV operation.
This will eliminate this voltage from the area.
5.3 miles @ $41,700/mile $221,000

608 - Year 2000

Replace 30 distribution transformers needed in 41.6/2.4 to 24.94/14.4 kV conversion.
66 transformers @ $797 each $52,602

6. Springer Mountain Substation Area

The Cooperative will inset 70 poles from nodes 1948 to 1950 of Circuit 71 to reduce span lengths for the Vernon area. The line improvement will improve reliability on this circuit under icing conditions. This is a carryover project from the previous workplan. The need for line conversion in the Vernon area delayed the project and changed the location of some of the insets. Voltage levels on this circuit are adequate and no other changes are needed.

A highway relocation project will require moving about 1.5 miles of distribution line in the Woodland area, nodes 1966 to 1984. No funding from the highway department is expected on the project.

Summary of Construction, Springer Mountain Substation

300.27 - Year 2000-2003

Inset 70 poles to reduce span lengths, section 1949.

70 poles @ $971 each $68,000

300.38 - Year 2002

Relocate 1.5 miles of three-phase distribution line in the Woodland area, nodes 1966 to 1984.

1.5 miles @ $30,000/mile $45,000

7. Stevens Substation Area

The Glenwood Circuit does show slight voltage problems with projected loading. Voltage drop reaches 8.4 volts in front of first regulator on the circuit, total uncorrected voltage drop on the circuit is 10.4 volts. This condition can be corrected by moving loading from the more heavily loaded phase to the other phases. No construction is required. Voltage drop is reduced to 7.4 volts and total uncorrected voltage drop is reduced to 9.0 volts. Losses are reduced minimally by 2 kW.

8. Wagon Wheel Substation Area

Cibecue Circuit (153) does have line sections with more than an eight volt drop in voltage. The circuit uses two set of line regulators in series to keep voltage levels up. Roughly 70% of the load on this circuit, including a sawmill, is located in the last two miles and the circuit is about 36 miles long. Voltage drop on the circuit does remain under 8 volts where consumers are located. No consumers are expected to connect in those areas where voltage drop does exceed 8 volts. The worst voltage drop on the circuit occurs in front of the first set of line regulators with a value of 16.0 volts with projected loading. Total unregulated voltage drop on this circuit under projected loading is 24.0 volts. There are two sets of SCADA controlled capacitors on the circuit. These need to be placed in service whenever the sawmill is on line. Voltage drop on the circuit with the capacitors on line is reduced to 11.1 volts and unregulated voltage drop is 16.4 volts. No construction is required for this circuit.

D. Transmission Analysis

The Cooperative is presently in the middle of changing its power supplier. Plains Electric G&T (PEGT) is being bought out by Tri-State G&T and Public Service of New Mexico (PNM). Navopache elected to go with PNM as their power supplier. This transition prevented several projects that PEGT was going to build for Navopache, namely the delivery point at Springerville Power Plant.

1. Cholla 69 kV Transmission System

This system serves the three delivery points on the western part of Navopache's transmission system. The three points are Zeniff that serves Heber Substation, Linden, and Show Low that serves the remaining substations, Wagon Wheel, Springer Mountain, Pinetop Lakes, Alchesay, and Drumbeat. There are two 336.4 MCM ACSR lines from Cholla to the Show Low delivery point and six Arizona Public Service (APS) substations served on these APS lines in addition to Navopache's western load.

The western transmission system of Navopache is experiencing low voltage conditions. New load on this system will increase these problems. Power flow analyses under projected load conditions show voltage levels at the end of the system reaching 0.918 per-unit. The line from Cholla to Zeniff is shown to be 85% loaded and the other line from Cholla to Woodruff will be 80% loaded. The delivery voltage at Show Low will be 0.942 per-unit. The output voltage at Cholla generating plant is 1.06 per-unit.

APS does not at this time have any plans to upgrade this part of the system. They are planning on adding 4.8 MVAR of capacitors on the distribution side of Show Low Substation. A total of 21.6 MVAR of capacitance is presently on the transmission side of Show Low Substation.

2. Coronado 69 kV Transmission System

One delivery point serves the entire eastern 69 kV transmission system of Navopache. This system supplies power to Navopache's St. Johns, Concho, Greer, Green's Peak, Round Valley, Saffel Canyon, Nutrioso, Alpine, Jenk's Ranch, Luna, Frisco Ridge, and Stevens Substations. The first 43 miles of line uses 477 MCM ACSR, the next 25 miles of line uses 266.8 MCM ACSR, and the last 48 miles is #2F CWC.

Voltage levels on the 69 kV system under projected load conditions drop below 0.95 per-unit for Alpine, Jenks Ranch, Luna, Frisco Ridge, and Stevens. Losses on the transmission system are 845 kW. Voltage drop and losses would be higher but the large sawmill load at Eagar went out of service this reduced load on this side of the system by about 3 MW. Essentially new load on the eastern system equals the load loss of the sawmill.

A new delivery point is proposed at the Springerville Power Plant that is about 20 miles northeast of the towns of Springerville/Eagar. The new Springerville Substation will be the delivery point. It will take 34.5 kV and step it up to 69 kV using a 30/40/50 MVA transformer. Then a 69 kV line using 795 MCM ACSR conductors will be built from Springerville to the Round Valley Switching Station, a distance of 20 miles. Round Valley Switching Station will be modified to accommodate the new feed from Springerville Substation. Voltage levels on the system will improve dramatically, worst voltage condition on the system will be 1.004 and losses will be reduced to 183 kW. The loss savings of 662 kW will justify about 47% of the total project.

The new line and delivery point are sized to help feed the western system of Navopache under emergency conditions. It may be looped with the western system in order to keep voltage levels up on that system until facility upgrades can be made to improve voltage levels. As the previous discussion on the Cholla 69 kV lines show, this line will be necessary to provide adequate voltages to the western system, if APS does no system improvements on their 69 kV system out of Cholla.

Summary of Construction, Coronado 69 kV System

800.01 - Year 2001

Build 20 miles of 795 MCM ACSR 69 kV line from Springerville Substation to Round Valley Switching Station.

20 miles @ $110,000/mile $2,200,000

900.01 - Year 2001

Build Springerville Substation, a 34.5 to 69 kV substation using a 30/40/50 MVA transformer. It will be a new delivery point for Navopache.

Springerville Substation @ $1,600,000 $1,600,000

1000.8 - Year 2001

Modify Round Valley Switching Station to accomodate new line from Springerville Substation.

Modify Round Valley @ $600,000 $600,000

E. Sectionalizing and SCADA

The Cooperative will be adding several sectionalizing devices and SCADA controlled sectionalizing devices to the system over the next several years. A total of 350 tap fuses will be added to the system, 125 units spread throughout system and 225 in the Drumbeat and Round Valley Substation areas.

A total of 10 VFI padmounted vacuum fault interrupters will be installed to isolate single phase URD lines from the main lines. They will be installed in the Heber Substation area.

The Cooperative will replace 15 existing E type reclosers with VXE single-phase electronic reclosers. The new VXE reclosers will be SCADA controlled. These will be placed in various areas of the system.

Four SCADA controlled oil circuit reclosers will be added to the lines running between Heber and Linden Substations. They will be used to separate the Heber circuits and the Linden circuits.

The Cooperative needs an additional 10 type E reclosers with by-pass switches. They will be placed in various areas of the system as needed.

A new sectionalizing study is recommended for the system once the new delivery point at Springerville Power Plant is under construction. This will significantly impact fault currents on the eastern half of the system.

604 - Year 2000-2003

350 tap fuses @ $460 each $161,000

604 - Year 2000-2003

Add 10 VFI interrupters on 1-ph UG taps off of main lines out of Heber substations.

10 VFI' s @ $5,500 each $55,000

604 - Year 2000-2003

Add 10 type E reclosers with bypass switches at various locations.

10 E's @ $4,400 each $44,000

604 - Year 2000-2003

Install 15 VXE single-phase electronic reclosers with SCADA controls in various locations.

15 VXE @ $13,000 each $195,000

V. SUMMARY OF SYSTEM IMPROVEMENTS

This section of the report lists the proposed construction anticipated for the 2000-2003 Construction Work Plan period. Construction items are found in the same order as found on RUS form 740c in "Cost Estimates and Loan Budget for Electric Borrowers". This is done to facilitate ease in identifying construction items in the loan application. Identifying numbers relate to the construction items and they are noted in this section of the report, on the form 740c, and the 740c Attachment. The three plastic inserts on the following pages contain the 740c Attachment form and the 740c form. The pages following these inserts provide greater detail on all construction items proposed in this work plan. Construction costs shown are totals.

Public reporting burden for this collection of information is estimated to average 17 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 comments 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, OIRM, Room 404-W, Washington, DC 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB #0572-0032), Washington, DC 20503. OMB FORM NO. 0572-0032, Expires 05/31/92.

This data will be used by RUS to review your financial situation. Your response is required (7 USC 901 et seq.) and is not confidential.

USDA-RUS

COST ESTIMATES AND LOAN BUDGET

FOR ELECTRIC BORROWERS

To: U.S. Dept. of Agriculture, RUS, Washington, D. C. 20250

INSTRUCTIONS *See EOM-4 Guideline for the Implementation of 7 CFR 1711.1*

Form Approved
OMB No. 0572-0032

BORROWER AND LOAN DESIGNATION

Arizona 13 Navajo

COST ESTIMATES AS OF: (Month, Year)

Apr-00

SECTION A. COST ESTIMATES

LOAN PERIOD 4 YEARS

					BORROWER'S COST ESTIMATES	RUS USE ONLY
1. DISTRIBUTION						
100	a. New Line: (Excluding Tie-Lines)					
Construction		Consumers		Miles		
101	Underground	2045		46.40	$1,820,112	
102	Overhead	3755		190.73	4,613,649	
	Total Consumer	5800	Total Miles	237.13		
			Less Contributions		1,101,122	
	Subtotal (New Line)				$5,332,639	
	a.(1) Major Development : (site specific code 100)					
					$0	
					0	
	Subtotal (Major Development)				$0	
	Subtotal All code 100				$5,332,639	
200	b. New Tie-Lines					
	Line Designation			Miles		
	Subtotal from page 1A		Miles	0.00	0	
			Less Contributions			
	Subtotal (Includes subtotals from pages 1A)		Miles	0.00	$0	
300	c. Conversion and Line Changes					
	Line Designation			Miles		
*300.23	Convert 4.16/2.4 to 24.94/14.4, Saffel Canyon Ckt 185			5.30	$221,000	
*300.27	Inset 70 Poles, Springer Mtn Ckt 171			0.00	68,000	
*300.28	Inset 63 Poles, Concho Ckt 163			0.00	62,000	
300.33	Convert 2.4 kV Delta, McNary Ckt 111			2.00	83,400	
300.34	Convert 1-ph to 3-ph 1/0 ACSR, Concho Ckt 163			8.80	387,200	
300.35	Convert 3-ph 1/0 ACSR to 477 MCM ACSR, Heber Ckt 192			1.60	120,000	
300.36	Convert 2-ph to 3-ph #2 ACSR, Heber Ckt 192			2.00	90,000	
300.37	Convert 2-ph to 3-ph #2 ACSR, Pinetop Lakes Ckt 2			0.80	40,000	
300.38	Relocate 3-ph line in Woodland Area, Lakeside Ckt 71			1.50	45,000	
	Subtotal . (Includes subtotals from pages 1A)		Miles	22.00	$1,116,600	
400	d. New Substations, Switching Stations, Metering Points, etc.					
	Station Designation	kVA		kV to kV		
	Subtotal				$0	

*- Carryover from previous Construction Work Plan (92-93)

SECTION A. COST ESTIMATES *(cont.)*	BORROWER'S COST ESTIMATES	RUS USE ONLY
500 e. Substation, Switching Station, Metering Point Changes		
Station Designation / Description of Changes		
Subtotal	$0	
600 f. Miscellaneous Distribution Equipment		
601 (1) Transformers and Meters		
Construction / Transformers / Meters		
Underground 753 $1,256,004 / 5684 $807,128	$2,063,132	
Overhead 2543 $2,026,771 / 116 $73,428	$2,100,199	
Subtotal code 601 . . . (included in total of all 600 codes below)	$4,163,331	
602 (2) Sets of Service Wires to increase Capacity - 300	145,500	
603 (3) VT's and CT's - 440	62,040	
604 (4) Sectionalizing Equipment - Assorted Equipment	563,000	
605 (5) Regulators - Various locations	77,000	
606 (6) Capacitors - Various locations	0	
607 (7) Ordinary Replacements - Poles, Crossarms, Cutouts, Arresters	93,980	
608 (8) Conversion & Step-down transformers - 30 for Mcnary and 66 for Saffel Canyon	76,512	
609 (9) Cable Cure - 7.4 miles of UG line	391,000	
(10)	0	
(11)	0	
Subtotal ***ALL*** *600 codes*	$5,572,363	
700 g. Other Distribution Items		
701 (1) Engineering Fees	$0	
702 (2) Security Lights - 660	578,160	
703 (3) Reimbursement of General Funds		
(4)	0	
Subtotal	$578,160	
TOTAL DISTRIBUTION.....	**$12,599,762**	
800 2. Transmission		
a. New Line		
Line Designation / Voltage / Wire Size / Miles		
800.01 Springerville Power Plant 69 kV 795 MCM 20.00	$2,200,000	
to Round Valley Substation	0	
Total Miles 20.00		
Subtotal	$2,200,000	

SECTION A. COST ESTIMATES *(cont.)*			BORROWER'S COST ESTIMATES	RUS USE ONLY
900 b. New Substation, Switching Station, etc.				
Station Designation	kVA	kV TO kV		
900.01 Springerville Substation	30/40/50 MVA	34.5-69	$1,600,000	
			0	
			0	
			0	
			0	
			0	
			0	
Subtotal			$1,600,000	
1000 c. Line and Station Changes				
Line/Station Designation	Description of Changes			
1000.0 Round Valley Substation	Modify to accommodate new feed from Springerville Power Plan		$600,000	
			0	
			0	
			0	
			0	
			0	
			0	
			0	
			0	
Subtotal			$600,000	
1100 d. Other Transmission Items				
1101 (1) R/W Procurement			$0	
1102 (2) Engineering Fees			0	
1103 (3) Ordinary Replacements - All Transmission Units: Poles, Crossarms, Bells & Grounds			334,010	
1104 (4) Reimbursement of General Funds			0	
Subtotal			$334,010	
TOTAL TRANSMISSION.....			**$4,734,010**	
1200 3. GENERATION (including Step-up Station at Plant)				
1201 a Fuel	Nameplate Rating	kW	$0	
1202 b.			0	
TOTAL GENERATION.....			**$0**	
1300 4. HEADQUARTERS FACILITIES				
1301 a. New or additional Facilities	(Attach RUS Form 740g)		$0	
1302 b.			0	
TOTAL HEADQUARTERS FACILITIES			**$0**	

SECTION A. COST ESTIMATES (cont.)	BORROWER'S COST ESTIMATES	RUS USE ONLY
1400 5. ACQUISITIONS		
a. _____ Consumers _____ Miles	$0	
b.	0	
TOTAL ACQUISITIONS.....	**$0**	
1500 6. ALL OTHER		
a.	$0	
b.	0	
c.	0	
TOTAL ALL OTHER.....	**$0**	

SECTION B. SUMMARY OF AMOUNTS AND SOURCES OF FINANCING

			BORROWER'S COST ESTIMATES	RUS USE ONLY
1. GRAND TOTAL - ALL COSTS			$17,333,772	
2. FUNDS AND MATERIALS AVAILABLE FOR FACILITIES				
a. Loan Funds		$0		
b. Materials and Special Equipment		0		
c. General Funds ..... Purpose 1	$0.00			
Purpose 2	0.00			
Purpose 3	0.00			
Purpose 4	0.00			
		$0		
d. Total Available Funds and Materials			$0	
3. NEW FINANCING REQUESTED FOR FACILITIES			$17,333,772	
4. RUS LOAN REQUESTED FOR FACILITIES		100%	$17,334,000	
5. TOTAL SUPPLEMENTAL LOAN REQUESTED		0%	$0	
Name of Supplemental Lender				
6. CAPITAL TERM CERTIFICATE PURCHASES (CFC Loan only)		0%	$0	
7. SUPPLEMENTAL LOAN REQUESTED FOR FACILITIES			$0	
8. 100% SUPPLEMENTAL LOANS (SEE RUS Bulletin 20-40,Att. C)*			$0	

** Identify in section A by budget purpose and separate subtotals.*

SECTION C. CERTIFICATION

We, the undersigned, certify that:

1. *Upon completion of the electrical facilities contained herein and any others uncompleted at this time but for which financing is available, the system will be capable of adequately and dependably serving the projected load for the loan period as contained in our current RUS approved Power Requirement Study and Construction Work Plan.*

2. *Negotiations have been or will be initiated with our power supplier, where necessary, to obtain new delivery points and/or additional capacity at existing ones to adequately supply the projected load upon which this loan application is based.*

3. *The data contained herein and all supporting documents have, to the best of my knowledge, been prepared correctly and in accordance with RUS Bulletin 20-2.*

_____ *Date* | _____ *Signature of Borrower's Manager*

_____ *Date* | _____ *Signature of Borrower's President*

Navopache Electric Cooperative, Inc.
Corporate Name of Borrower

GFR Initials _____

Supplemental 740c Attachment
Navopache Electric Cooperative, Inc
Arizona 13 Navajo
2000 - 2003 Four Year Construction Work Plan

		Loan Funds	Other Sources	General Funds	Total Costs
1. DISTRIBUTION FACILITIES					
	New Line: (Excluding Tie Lines) - Series 100				
101	URD service to 2045 consumers - 46.4 miles	$1,213,994	$606,118	$0	$1,820,112
102	OH service to 3755 consumers - 190.73 miles	$4,118,645	$495,004	$0	$4,613,649
	Conversions and Line Changes - Series 300				
• 300.23	Convert 5.3 miles, 4.16/2.4 kV to 24.9/14.4 kV, Saffel Canyon Ckt 185	$221,000	$0	$0	$221,000
• 300.27	Inset 70 poles, Springer Mountain Ckt 171	$68,000	$0	$0	$68,000
• 300.28	Inset 63 poles, Concho Ckt 163	$62,000	$0	$0	$62,000
300.33	Convert 2.0 miles, 2.4 kV Delta to 24.9/14.4 kV, McNary Ckt 111	$83,400	$0	$0	$83,400
300.34	Convert 8.8 miles, 1-ph to 3-ph 1/0 ACSR, Concho Ckt 163	$387,200	$0	$0	$387,200
300.35	Convert 1.6 miles, 1/0 ACSR and #6 Cu to 477 MCM ACSR, Heber Ckt 192	$120,000	$0	$0	$120,000
300.36	Convert 2.0 miles, V-ph to 3-ph #2 ACSR, Heber Ckt 192	$90,000	$0	$0	$90,000
300.37	Convert 0.8 miles, V-ph to 3-ph #2 ACSR, Pinetop Lakes Ckt 2	$40,000	$0	$0	$40,000
300.38	Relocate 1.5 miles, 3-ph line in Woodland area, Lakeside Ckt 71	$45,000	$0	$0	$45,000
	Miscellaneous Distribution Equipment - Series 600				
601.1a	UG consumers - 753 transformers,	$1,256,004	$0	$0	$1,256,004
601.1b	OH consumers - 2543 transformers	$2,026,771	$0	$0	$2,026,771
601.1c	Meters - 5684 regular & 116 three-phase	$880,556	$0	$0	$880,556
602	Increased Capacity Service Wire Sets - 300	$145,500	$0	$0	$145,500
603	VT's and CT's - 440	$62,040	$0	$0	$62,040
604	Sectionalizing Equipment - Assorted Equipment	$563,000	$0	$0	$563,000
605	Voltage Regulators - One regulator, and two sets of three regulators	$77,000	$0	$0	$77,000
606	Capacitors - None	$0	$0	$0	$0
+ 607	Ordinary Replacements - All distribution units	$93,980	$0	$0	$93,980
608	Conversion Transformers - 30 for McNary & 66 for Saffel Canyon	$76,512	$0	$0	$76,512
609	Cable Cure - 7.4 miles	$391,000	$0	$0	$391,000
	Other Distribution Items - Series 700				
702	Security Lights - 660 new installations	$578,160	$0	$0	$578,160
704	Reimbursement of General Funds	$0	$0	$0	$0
2. TRANSMISSION FACILITIES					
	New Line - Series 800				
800.01	Build 20 mi of 69 kV 795 MCM ACSR, Springerville to Round Valley	$2,200,000	$0	$0	$2,200,000
	New Substations, Switching Stations, etc. - Series 900				
900.01	Springerville Substation - 34.5-69 kV, 30/40/50 MVA	$1,600,000	$0	$0	$1,600,000
	Line and Station Changes - Series 1000				
1000.08	Modify Round Valley Substation for new feed from Spingerville	$600,000	$0	$0	$600,000
	Other Transmission Items - 1100				
1103	Ordinary Replacements - All transmission units	$334,010	$0	$0	$334,010
TOTALS: 2000 - 2003 CONSTRUCTION WORK PLAN		$17,333,772	$1,101,122	$0	$18,434,894

• - These projects are carryovers from 1995 - 1998 CWP.

+ - Loan funds for ordinary replacement items do not include original costs or cost of removal.

		Year 2000	Year 2001	Year 2002	Year 2003	Total
A. Distribution						
	1. New Member Line Extensions - 100					
101	a. Underground Consumers					
	1) 1-Ph Underground					
	1982 consumers, 44.17 miles of line, loan fund cost of $19,012 and an actual cost of $29,376 per mile					
	44.17 miles @ $29,376/mile	$324,385	$324,385	$324,385	$324,385	$1,297,538
	2) V-Ph Underground					
	2 consumers, 0.02 miles of line, loan fund cost and an actual cost of $336,117 per mile					
	0.02 miles @ $336,117/mile	$1,681	$1,681	$1,681	$1,681	$6,722
	3) 3-Ph Underground					
	61 consumers, 2.21 miles of line, loan fund cost of $166,295 and an actual cost of $233,417 per mile					
	2.21 miles @ $233,417/mile	$128,963	$128,963	$128,963	$128,963	$515,852
	b. Aerial Consumers					
102	1) 1-Ph Overhead					
	3700 consumers, 184.50 miles of line, loan fund cost of $20,233 and an actual cost of $22,881 per mile					
	184.50 miles @$22,881/mile	$1,055,386	$1,055,386	$1,055,386	$1,055,386	$4,221,545
	2) 3-Ph Overhead					
	5 consumers, 6.23 miles of line, loan fund cost of $61,903 and an actual cost of $62,938 per mile					
	6.23 miles @ $62,938/mile	$98,026	$98,026	$98,026	$98,026	$392,104
	c. Total - New Construction	$1,608,440	$1,608,440	$1,608,440	$1,608,440	$6,433,761
	2. New Tie Lines - 200					
	None	$0	$0	$0	$0	$0
	3. Conversion and Line Changes - 300					
	a. Convert 5.3 miles 4.16/2.4 kV to 24.9/14.4 kV,					
* 300.23	Eagar area, Saffel Canyon Circuit 185					
	5.3 miles @ $42,000/mile	$221,000				$221,000
	b. Inset 70 poles, Springer Mountain Circuit 171					
* 300.27	70 poles @ 972 each	$17,000	$17,000	$17,000	$17,000	$68,000
	c. Inset 63 poles, Concho Circuit 163					
* 300.28	63 poles @ 972 each	$15,500	$15,500	$15,500	$15,500	$62,000

* - Carryover project from previous Construction Work Plan.

		Year 2000	Year 2001	Year 2002	Year 2003	Total
	d. Convert 2.0 miles of 2.4 kV delta to 24.9/14.4 kV operation, north part of McNary, McNary Circuit					
300.33	111					
	2.0 miles @ $41,700/mile		$83,400			$83,400
	e. Convert 8.8 miles of 1-ph to 3-ph 1/0 ACSR,					
300.34	nodes 6532 to 6542					
	8.8 miles @ $44,000/mile	$387,200				$387,200
	f. Convert 1.6 miles of 3-ph 1/0 ACSR to 477					
300.35	MCM ACSR, Heber Circuit 192, sub to node 2610					
	1.6 miles @ $75,000/mile		$120,000			$120,000
	g. Convert 2.0 miles of V-Ph to 3-Ph #2 ACSR					
300.36	Heber Circuit 192, nodes 2644 to 2648					
	02.0 miles @ $45,000/mile			$90,000		$90,000
	h. Convert 0.8 miles of V-Ph to 3-Ph #2 ACSR line,					
300.37	Pinetop Lakes Circuit 2, nodes 7006 to 7008					
	0.8 miles @ $50,000/mile				$40,000	$40,000
	I. Relocate 1.5 miles, 3-ph line in Woodland area,					
300.38	Lakeside Circuit 71					
	1.5 miles @ $30,000/mile				$45,000	$45,000
	m. Total - Conversions, etc.	$640,700	$235,900	$122,500	$117,500	$1,116,600
	4. New Substations & Switching - 400					
	None	$0	$0	$0	$0	$0
	5. *Substation Changes - 500*					
	None	$0	$0	$0	$0	$0
	6. Miscellaneous Dist. Equip. - 600					
	a. Transformers and Meters					
	1) 753 URD Transformers					
	@ $1,668 each	$314,001	$314,001	$314,001	$314,001	$1,256,004
	2) 2543 OH Transformers					
	@ $797 each	$506,693	$506,693	$506,693	$506,693	$2,026,771
601	3) 5,684 Regular Meters					
	@ $142 each	$201,782	$201,782	$201,782	$201,782	$807,128
	4) 116 Special Meters					
	@ $633 each	$18,357	$18,357	$18,357	$18,357	$73,428
	5) Total - Transformers & Meters	$1,040,833	$1,040,833	$1,040,833	$1,040,833	$4,163,331
	b. Increased Capacity Services					
	1) 300 Increased Capacity Service Wire Sets					
602	@ $485 each	$36,375	$36,375	$36,375	$36,375	$145,500
	2) Total - Increased Capacity Services	$36,375	$36,375	$36,375	$36,375	$145,500

		Year 2000	Year 2001	Year 2002	Year 2003	Total
	c. VT's and CT's					
	1) 440 Service VT's and CT's					
603	@ $141 each	$15,510	$15,510	$15,510	$15,510	$62,040
	2) Total - VT's and CT's	$15,510	$15,510	$15,510	$15,510	$62,040
	d. Sectionalizing Equipment					
	1) 4 VWVE's @ $27,000 each	$27,000	$27,000	$27,000	$27,000	$108,000
604	2) 10 E reclosers @ $4,400 each	$11,000	$11,000	$11,000	$11,000	$44,000
	3) 350 Tap Fuses @ $460 each	$40,250	$40,250	$40,250	$40,250	$161,000
	4) 15 VXE's @ $13,000 each	$48,750	$48,750	$48,750	$48,750	$195,000
	5) 10 VFI's @ $5,500 each	$13,750	$13,750	$13,750	$13,750	$55,000
	6) Totals - Sectionalizing Equipment	$140,750	$140,750	$140,750	$140,750	$563,000
	e. Voltage Regulators					
	1) 7 Regulators @ $11, 000 each	$19,250	$19,250	$19,250	$19,250	$77,000
	2) Totals - Voltage Regulators	$19,250	$19,250	$19,250	$19,250	$77,000
	f. Capacitors					
	None	$0	$0	$0	$0	$0
	g. Ordinary Replacements					
	1) 140 Dist Poles @ $391 each	$13,685	$13,685	$13,685	$13,685	$54,740
607	2) 250 Crossarms @ $120 each	$7,500	$7,500	$7,500	$7,500	$30,000
	3) 120 Arresters @ $77 each	$2,310	$2,310	$2,310	$2,310	$9,240
	4) Total - Ordinary Replacements	$23,495	$23,495	$23,495	$23,495	$93,980
	h. Conversion Transformers					
	1) 99 Transformers on 24.94 conversion					
608	30 for McNary and 66 Saffel Canyon					
	99 Transformers @ $773 each	$19,128	$19,128	$19,128	$19,128	$76,512
	2) Total - Conversion Transformers	$19,128	$19,128	$19,128	$19,128	$76,512
	i. Cable Cure					
	1) Cable Cure about 7.4 miles of line in the					
609	various location on the system					
	7.4 miles @ $54,800/mile	$150,000	$141,000	$100,000		$391,000
	2) Total - Cable Cure	$150,000	$141,000	$100,000	$0	$391,000
	j. Total - Miscellaneous	$1,445,341	$1,436,341	$1,395,341	$1,295,341	$5,572,363
	7. Other Distribution Items - 700					
	a. Engineering Fees - Included in					
	line estimates	$0	$0	$0	$0	$0

		Year 2000	Year 2001	Year 2002	Year 2003	Total
2	b. Security Lights - 660 new installations @ $876 each	$144,540	$144,540	$144,540	$144,540	$578,160
	c. Total - Other Distribution	$144,540	$144,540	$144,540	$144,540	$578,160
	8. Grand Total Distribtuion	$3,839,021	$3,425,221	$3,270,821	$3,165,821	$13,700,884
B. Transmission						
	1. New Line - 800					
800.01	a. Build 20.0 miles of 795 MCM ACSR 69 kV line from Springerville Generation Plant to Round Valley Substation 20.0 miles @ $110,000 per mile	$2,200,000				$2,200,000
	b. Total - New Line	$2,200,000	$0	$0	$0	$2,200,000
	2. New Substations & Switching - 900					
900.01	a. Build Springerville Substation, 34.5 to 69 kV using a 30/40/50 MVA transformer, with one outgoing circuit, new delivery point Springerville Substation @ $1,600,000	$1,600,000				$1,600,000
	b. Total - New Substations & Switching	$1,600,000	$0	$0	$0	$1,600,000
	3. Line & Station Changes - 1000					
1000.08	a. Modify Round Valley Substation for new feed from Springerville Generation Plant Modifications @ $600,000	$600,000				$600,000
	b. Total - Line & Station Changes	$600,000	$0	$0	$0	$600,000
	4. Other Transmission Items - 1100					
	1) 70 Dist Poles @ $1,985 each	$34,738	$34,738	$34,738	$34,738	$138,950
1101	2) 90 Crossarms @ $1,060 each	$23,850	$23,850	$23,850	$23,850	$95,400
	3) 220 Insulators @ $453 each	$24,915	$24,915	$24,915	$24,915	$99,660
	4) Total - Ordinary Replacements	$83,503	$83,503	$83,503	$83,503	$334,010
	5. Grand Total Transmission	$4,483,503	$83,503	$83,503	$83,503	$4,734,010
C. Generation						
	None	$0	$0	$0	$0	$0
D. Warehouse & Associated Structures - 1300						
	None	$0	$0	$0	$0	$0
E. Grand Total - All Costs		$8,322,524	$3,508,724	$3,354,324	$3,249,324	$18,434,894

BORROWER'S ENVIRONMENTAL REPORT

NAVOPACHE ELECTRIC COOPERATIVE, INC.

Arizona 13 Navajo

Lakeside, Arizona

SGS WITTER, INC

Albuquerque, New Mexico

May 2000

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A. INTRODUCTION

The purpose of this Borrower's Environmental Report is to notify various agencies of proposed construction projects for the ensuing four years. This report is not intended to be and should not be considered an "Environmental Assessment", "Environmental Impact Statement", or in-depth study. Cooperative management is committed to construction practices that will maximize the preservation of cultural resources and protect environmentally sensitive areas within the electric service area.

This report was prepared for Navopache Electric Cooperative, Inc. (RUS designation Arizona 13 Navajo) for the purpose of planning construction activities and funds required for the 2000-2003 Construction Work Plan period. Additional distribution plant is required to provide adequate and dependable service for new consumer growth while ensuring adequate and reliable service to all existing consumers. The Cooperative expects to be serving 34,988 consumers at the end of 2003. These projected consumers will consist of 34,557 domestic, 211 irrigation, 183 commercial, 13 large commercial, and 23 public street lighting.

The new distribution facilities are expected to consist of 74.7 km (46.4 mi.) of new underground lines and 307.08 km (190.73 mi.) of new overhead lines. The new lines will utilize both single-phase and three-phase type of construction. An additional 33.01 km (20.5 mi.) of existing line will have its conductor converted or upgraded. Two three phase lines will be relocated which consist of 2.42 km (1.5 mi.) and .81 km (.5 mi.), and 133 poles will be inset in existing line. A new 32.2 km (20 mi.) of new transmission line will be constructed. One new substation will be built adjacent to the existing TEPCO Substation and modifications will be made to the Round Valley Substation.

Additional capacity will be provided to some existing service wires, meters, and transformers. Special equipment consisting of regulators and capacitors will also be installed on the existing system.

New facilities will be constructed using construction fund requirements established in this work plan. All construction will utilize standard RUS construction specifications which are compatible with existing construction. These facilities are not anticipated to adversely affect the quality of the environment.

B. GEOGRAPHICALLY SPECIFIC PROJECTS

The geographically specific portion of the new construction to be implemented in the work plan is as follows with the numbers used to reference the locations on the maps included with this report. Three of the conversion projects are carryovers from the previous work plan period. These projects are designated with an asterisk (*).

1. Line Conversions and Pole Insets

a. Saffel Canyon - Circuit 185 - 300.23*

A line conversion project is proposed for approximately 4.67 km (2.9 mi.) of three phase 4.16/2.4 kV circuit to be reinsulated for 24.9/14.4 kV operation, and approximately 3.86 km (2.4 mi.) of single phase, 2.4 kV, will be converted to 14.4 kV operation. There will be no sub-grade disturbance with this construction project since the structures are already in place. Work will include changing of crossarms, transformers, and insulators on existing poles. No clearing of the right-of-way will be required.

(EAGER QUADRANGLE)

b. Springer Mountain Substation - Circuit 171 - 300.27*

The Cooperative expects to inset 70 poles into an existing line in order to reduce span lengths. The construction process for installing the new poles will consist of drilling an auger hole by using a truck-mounted auger and installing the utility pole into the hole and backfilling. All construction will be contained within the existing right-of-way. Some disturbance to subsoil will occur at sites of pole insetting.

(SPONSELLER MOUNTAIN, LAKESIDE QUADRANGLES)

c. Concho Substation - Circuit 163 - 300.28*

The Cooperative proposes to inset 63 poles to reduce span lengths. The construction process will be similar to that described in 1.b. above.

(BOUNDARY BUTTE, ORTEGA MOUNTAIN, VERNON QUADRANGLES)

d. McNary Substation – Circuit 111 – 300.33

The Cooperative proposes to convert 3.22 km (2 mi.) of 2.4 kV delta circuit to be

reinsulated for 24.94/14.4 kV operation. There will be no-grade disturbance with this construction project since the structures are already in place. Work will include changing of insulators on existing poles. No clearing of the right-of-way will be required.

(McNARY QUADRANGLE)

e. Concho Substation - Circuit 163 - 300.34

A project is proposed to convert about 14.6 km (8.8 mi) of single-phase 1/0 and #6A CWC line to three-phase 1/0 ACSR line. The existing right-of-way will be used for the rebuilt three-phase line. The new line will be built adjacent to the existing energized line. Single wood poles about 12.2 m (40 ft) in length will be used. These poles will be spaced about 76.2 m (250 ft) apart depending upon the terrain. About 0.16m^2 (1.75 ft^2) of soil per pole will be disturbed below grade. A truck-mounted auger will drill an augur hole into the ground. The utility pole is inserted into the hole and the hole will then be backfilled with the excavated material. The conductor is later installed between the poles. New poles will be installed as close to the old pole locations as design allows, in order to minimize new ground disturbance. No clearing of the right-of-way is anticipated and construction review will be by motor vehicle. Existing right-of-way and access roads will be used.

(ORTEGA MOUNTAIN, VERNON QUADRANGLES)

f. Heber – Circuit 192 – 300.35

A project is proposed to convert about 2.57 km (1.6 mi.) of three-phase 1/0 ACSR and #6 Cu line to three-phase 477 MCM ACSR line. The existing right-of-way will be used for the rebuilt three-phase line. The new line will be built adjacent to the existing energized line. Single wood poles about 12.2 m (40 ft) in length will be used. These poles will be spaced about 76.2 m (250 ft) apart depending upon the terrain. About 0.16m^2 (1.75 ft^2) of soil per pole will be disturbed below grade. A truck-mounted auger will drill an augur hole into the ground. The utility pole is inserted into the hole and the hole will then be backfilled with the excavated material. The conductor is later installed between the poles. New poles will be installed as close to the old pole locations as design allows, in order to minimize

new ground disturbance. No clearing of the right-of-way is anticipated and construction review will be by motor vehicle. Existing right-of-way and access roads will be used.
(HEBER QUADRANGLE)

g. Heber – Circuit 192 – 300.36

A project is proposed to convert about 3.22 km (2.0 mi.) of v-phase line to three-phase #2 ACSR line. The existing right-of-way will be used for the rebuilt three-phase line. The new line will be built adjacent to the existing energized line. Single wood poles about 12.2 m (40 ft) in length will be used. These poles will be spaced about 76.2 m (250 ft) apart depending upon the terrain. About 0.16m^2 (1.75 ft^2) of soil per pole will be disturbed below grade. A truck-mounted auger will drill an augur hole into the ground. The utility pole is inserted into the hole and the hole will then be backfilled with the excavated material. The conductor is later installed between the poles. New poles will be installed as close to the old pole locations as design allows, in order to minimize new ground disturbance. No clearing of the right-of-way is anticipated and construction review will be by motor vehicle. Existing right-of-way and access roads will be used.
(HEBER QUADRANGLE)

h. Pinetop – Circuit 2 – 300.37

A project is proposed to convert about 1.29 km (0.8 mi.) of v-phase line to three-phase #2 ACSR line. The existing right-of-way will be used for the rebuilt three-phase line. The new line will be built adjacent to the existing energized line. Single wood poles about 12.2 m (40 ft) in length will be used. These poles will be spaced about 76.2 m (250 ft) apart depending upon the terrain. About 0.16m^2 (1.75 ft^2) of soil per pole will be disturbed below grade. A truck-mounted auger will drill an augur hole into the ground. The utility pole is inserted into the hole and the hole will then be backfilled with the excavated material. The conductor is later installed between the poles. New poles will be installed as close to the old pole locations as design allows, in order to minimize new ground disturbance. No clearing of the right-of-way is anticipated and construction review will be by motor vehicle. Existing right-of-way and access roads will be used.

(LAKESIDE QUADRANGLE)

i. Lakeside – Circuit 71 – 300.38

A project is proposed to relocate about 2.41 km (1.5 mi.) of three-phase due to a highway-widening project. The right-of-way of the highway will be used for the rebuilt three-phase line. Single wood poles about 12.2 m (40 ft) in length will be used. These poles will be spaced about 76.2 m (250 ft) apart depending upon the terrain. About 0.16m^2 (1.75 ft^2) of soil per pole will be disturbed below grade. A truck-mounted auger will drill an auger hole into the ground. The utility pole is inserted into the hole and the hole will then be backfilled with the excavated material. The conductor is later installed between the poles. No clearing of the right-of-way is anticipated and construction review will be by motor vehicle. (LAKESIDE QUADRANGLE)

2. New Transmission Lines

TEPCO Power Plant to Round Valley 69 kV Line – 800.01

The Cooperative will build about 32.18 km (20 mi.) of 69 kV transmission line from Tucson Electric Power Companies Springerville Power Plant to Round Valley Substation. The new line will be constructed using 795 MCM ACSR conductors. Structure locations will be drilled using a truck-mounted auger; the utility pole will be inserted into the hole and backfilled using the excavated material. The conductor will later be strung between the poles. Right-of-way clearing will be minimal and some new access roads may be necessary.

3. New Transmission Substation

Springerville Substation - 900.01

The Cooperative proposes to construct a 34.5-69 kV substation consisting of a 30/40/50 MVA transformer with associated switching, voltage regulating and source protection equipment. A control house and supports for the bus work and low voltage terminations will also be required for proper operation. All construction will take place within the existing TEPCO Substation. The transformer foundation will have oil containment features. Access to the project will be along existing access roads.

4. Line & Station Changes

Round Valley Substation - 1000.08

The Cooperative will modify this substation for an additional bay to tie in the new 69 kV transmission line from the Springerville Power Plant. It will be built entirely within the existing yard at this site.

C. GEOGRAPHICALLY UNSPECIFIC PROJECTS

1. Service Drops

In general, these projects consist of many small line extensions and new service drops that will be required to serve the new consumers who will request electric service, both small businesses and individual residences. The line extensions will be constructed throughout the service area. They cannot be geographically defined in detail and consist of system improvements made on existing lines. Approximately 5,800 new service drops and short line extensions are anticipated in the next four years. Lines will be strung between the nearest utility pole and the consumer or, in some cases, installed underground, depending on the area. These lines are short segments averaging 59 m (193 ft.) in length. For the anticipated 5,800 consumers, 379.4 km (237.1 mi.) of line will be constructed. Of this, 74.2 km (46.4 mi.) will be constructed underground and the remaining 192.3 km (190.7 mi.) will be constructed overhead. As described in the previous section, the underground construction will consist of excavating a trench .1.37 m x .46 m (4.5 ft. x 1.5 ft.). The cable will be direct buried or buried in conduit and the excavation will be backfilled for the required length. The overhead construction, in most cases, will utilize only one pole as a support for the wires from the existing line to the consumer connection. However, up to three poles are sometimes used. The pole installation will cause approximately 0.16 m^2 (1.75 $ft.^2$) of subsoil disturbance. The length of these poles will be in the range of 12.2 m (40 ft.). Common to both types of installations, work will be done primarily on the land of the consumer requesting electrical service and will attach to existing facilities.

2. Minor Construction

During this work plan period, a number of minor construction projects may surface which cannot be specifically planned at this time. These projects will become necessary as the requirements of our consumers evolve. A typical example is the conversion of single

phase line to three phase line to satisfy a request of a new consumer needing three phase service. These projects will consist of upgrades of less than one mile and will have little or no additional impact on the environment since the single phase facilities are already in existence. A project consisting of the upgrading of more than one mile in length or $100,000 in construction cost would not be considered minor. More advanced planning would be necessary, which would permit time to prepare a site specific supplement addressing the project. The supplement would be amended to this B.E.R.

3. Summary

A common factor in route selection for all geographically unspecific projects is that the line routes selected are generally the shortest possible routes to serve the loads. These projects involve the minimum number of poles and fixtures required for the convenience and safety of the public. In any given area, these new lines or upgrades of existing lines will be similar, if not identical, to those existing in the area. The addition of miscellaneous electric distribution equipment, which will be installed on existing poles will be necessary during the work plan in order to adequately serve our members.

All the projects defined in this section will be constructed in compliance with standard RUS guidelines. Should any previously undisclosed cultural or historical resource be discovered during construction, construction will immediately cease and the appropriate agencies will be contacted. During the construction process of these minor projects, efforts will be made to avoid or minimize any adverse impact on the environment.

D. ALTERNATIVES TO THE PROPOSED ACTION

1. No Action

The Cooperative might choose to take no action with regard to the construction described in the previous sections. Refusing service to the projected 34,988 new consumers anticipated to request service during the next four year work period would not be an acceptable solution. Governing bodies at the local, state, and federal level would not consider this an acceptable alternative. Under this plan, the existing equipment and distribution circuits would become overloaded from an electrical and structural standpoint. This would result in increasing line losses with lower voltage levels at points throughout the

system. These line losses, if not reduced, would then have to be absorbed by the consumer in higher electric bills. With a lower grade of service to all consumers, there would be many complaints of low voltage, burned out motors, and similar problems. The added equipment, power lines, and line conversions are needed to relieve this potential of overloading the existing system.

Another result in taking no action would be a decrease in the ability of the Cooperative to adequately serve its members, which is understandably unacceptable according to the standards set by the Public Service Commissions and RUS.

2. Alternate Routes

The proposed areas of construction that are line conversions are existing lines that are in need of improvement. All of the lines to be converted either follow existing roads or have designated right-of-way for access to the construction.

Any routing other than established centerlines would be more expensive, since new right-of-way would have to be acquired. As for the new lines, the routes selected are based on terrain and economics. Many of these new lines are routed with conservation in mind with appropriate contacts and consultation with the owner of the right-of-way of concern. In the areas of construction where the lines are in a town site, the routing is based on existing constraints, such as housing and roads. Overall, it is the intent of the Cooperative to route new lines in a manner consistent with the following criteria:

a. Keep construction costs under control.
b. Provide easy access for construction and future maintenance.
c. Cause minimal disturbance to the environment.

3. Other Methods to Provide Service

One method to provide adequate reliable service to the areas of line conversion would be to build more substations. These substations would have a greater impact on the environment because of the new transmission lines that would be required to serve them. The method of providing transmission lines to serve new substations is very expensive for the Cooperative and the expanse of land required for the facilities would be more obtrusive to

the aesthetics of the communities involved when compared to the short tie lines and line conversions mentioned in the previous sections.

An alternative to overhead construction in providing needed service would be to construct underground. This would result in a much higher construction cost. While underground construction in some situations is viable and practical, many areas are not conducive to underground construction because of rough terrain, trees, and rock that would be encountered. The overall result of the methods other than proposed would be increased costs to new consumers that would be a hardship to many.

4. Conservation

The construction proposed will utilize the minimum amount of construction materials and manpower to complete the project. Wear and tear on equipment, the use of petroleum products, and disturbance to the environment will all be kept to a minimum not only now with the new construction, but in the future during servicing and repairing of these lines under maintenance or emergency situations.

5. Environmental Affects of the Proposed Actions

The construction should not affect any known state or federally designated, threatened, or endangered species. The projects described in the previous section will not cross any flood plains or wetlands. No important farm lands will be crossed nor will erosion of the soil be caused. The outlined projects will not adversely affect the current land use surrounding the proposed facilities. Aviation will not be affected by the proposed lines. Water resources will not be affected in any manner by new power line construction.

E. DESCRIPTION OF THE ENVIRONMENT

1. Location and Physiography

The Navopache Electric Cooperative, Inc., service area covers portions of Apache, Navajo, Gila, and Greenlee counties in Arizona and Catron County in New Mexico. The service area is made up of lands administered by the United States Forest Service, Indian Reservation land, State Land, National Resource Land, and lands owned by private

individuals and corporations. The service area is located in the east central portion of Arizona and the west central portion of New Mexico along the Arizona border.

Of the villages and towns served by the Cooperative, the most western are Heber, Overgaard, Aripine, Clay Springs, Linden, Cibecue, Carrizo, and Cedar Creek. In the central area, Lakeside, Pinetop, McNary, Whiteriver, Ft. Apache, Vernon, Concho, St. Johns, Springerville, Eagar, Greer, Nutrioso, and Alpine receive service from the Cooperative. In the eastern area which is primarily New Mexico, the towns and villages are Luna, Reserve, Glenwood, Alma, Mogollon, Apache Creek, and Aragon.

The majority of the land in the service area lies at an elevation of 5500 to 8000 feet above sea level. Service to seasonal residences and special loads may extend to higher elevations.

Landforms in the service area are complex, varying from high mountains and valleys in the ski-run area southwest of Greer to the high and dry plateau country near St. Johns. The Mogollon Rim traverses the service area in a general south-southeasterly direction entering at a point about ten miles south of Heber. From that point it continues and passes about one mile south of McNary. Areas below this rim are generally quite rugged and contain many deep arroyos and canyons. Areas above and close to the rim contain a considerable amount of large fir, spruce, and pine trees. In the eastern portion of the system, mountainous terrain is still prevalent with open grassy areas between some of the higher ridges.

The lands involved in this construction period are identical to that where past constructions have occurred.

2. Soils and Vegetation

The soils and vegetation in the service area are variable with the elevation. In the alluvial valleys the soil may vary from shallow to deep loams on terraces and alluvial fans. In some of the foothills, the soils range from deep loams to clayey and very gravelly soils. On the high mesa, the soils may be very shallow loams and very cobbled. Because of past volcanic activity in some areas, malpais rock is prevalent under the surface and at the surface. Most of the area is well drained.

The grasses common to most of the area consist of wheat grass, grama, buffalo grass, and fescue. Some low growing forms include sagebrush, loco-weed, Indian wheat, and Russian thistle. Some trees and shrubs common in the area include big sagebrush, saltbrush, mountain-mahogany, rabbit brush, winterfat, snakeweed, cacti, mesquite, skunk brush, and yucca. The trees in the high country are the fir, spruce, pine, and aspen. In the foot hills are found pinon, juniper, willows, cottonwood, and oak. All construction will be planned to cause minimal disturbance to either indigenous or cultivated flora.

3. Climate

The lower elevations of the service area are subject to warm summers and mild to moderately cold winters. At the higher elevations the summers are cool with cold winters. Precipitation in the summer is generally rain with occasional hail from fast moving thunderstorms. In the wintertime, precipitation is in the form of sleet or snow.

In Navajo County, the average annual precipitation is 15.35 inches with an average snowfall of 38.2 inches. Apache County averages 10.5 inches of precipitation with an average of 25 inches of snow. a Catron County in New Mexico has an average annual precipitation of 13.24 inches.

4. Economic Factors

The service area of the Cooperative contains much beautiful landscape that is ideally suited for the development of recreational attractions. Large subdivisions including country clubs, attractive golf courses, and service-oriented businesses are prevalent, especially in the Linden, Pinetop, Concho, and Alpine areas of the system. Large numbers of people travel to the area from Phoenix and Tucson in the summertime to avoid the summer heat on the desert floor. Many city-dwellers maintain second homes in this area.

The development of the ski resort by the White Mountain Apache Tribe has helped bring winter recreational enthusiasts to the area, creating a better balance between the summer and winter influx of people.

Lumbering activities have been an important part of the economy in the past and at the present time sawmills are located at Cibecue, Whiteriver, Eagar, Aripine and Nutrioso. The

grazing of cattle and sheep is also practiced throughout much of the service area. Farming is not a major endeavor as the terrain and soils are not conducive to large farming operations.

5. Animal Life

The more common wildlife of the service area includes elk, deer, bobcat, mountain lion, coyote, antelope, bear, fox, rabbits, skunk, badger and porcupine. The year around bird population includes jays, magpies, quail, starlings, roadrunners, and turkeys. Migratory birds include ducks, geese, hawks, eagles, robins, and many kinds of small birds. Domestic animals such as horses, sheep, goats, and cattle are very common in the service area. Numerous lakes and streams containing different species of trout are also located in the service area.

6. General Organization

The Cooperative is incorporated under the laws of the states of Arizona and New Mexico. It is governed by eight elected directors who live within the service area. A manager is employed to manage the everyday operations of the Cooperative. Sufficient office and operating personnel are employed as necessary to provide for satisfactory operation and maintenance.

The Cooperative serves approximately 30,539 consumers, over 4,202km (2,626 mi.) of 2.4/4.16 and 14.4/24.9 kV electric distribution lines and 366 km (229 mi.) of 69 kV transmission line. The main office of the Cooperative is located in Lakeside, Arizona. Sub-offices are located in Whiteriver, Overgaard, St. Johns, and Springerville, Arizona. One sub-office is located at Reserve, New Mexico.

F. ENVIRONMENTAL IMPACT OF THE PROPOSED PROJECTS

1. Water Resources

The construction, operation, and maintenance of the power lines and associated substations are anticipated to have no significant effect on water resources in the project areas. Any rivers or small creeks crossed by individual projects would be spanned in such a manner as to preclude permanent damage or flow stoppage in their channels. There will be no run-diversion of surface water resources during the construction of the proposed lines

and related facilities. No construction of water wells is planned for the proposed projects. No chemical agents will be used for clearing. Storage of chemical and petroleum materials for line construction purposes and at substations will be undertaken in a manner which will prevent significant impacts on ground water resources.

2. Soils and Geology

The Cooperative's construction policies are based upon Environmental Criteria for Electric Transmission Lines published jointly by the U.S. Department of the Interior and the U.S. Department of Agriculture, and exhibit the goal of minimizing the impact on soils and geology in such projects being addressed in this report. The Cooperative will work closely with the USDA Soil Conservation Service and private land owners to seek guidance in avoiding significant impacts to soils. Grading will be confined to structure sites. When construction is complete, all graded areas will be re-graded as needed and erosion prevention measures will be taken to minimize soil erosion and thereby prevent significant impact on soils. The placement of power line structures may require the removal of a small amount of underlying rock material during construction. However, this activity is anticipated to have no measurable effect on the geologic features of the project areas.

3. Terrestrial Ecosystems

The impact on fauna and flora as a result of the construction of the previously outlined projects is expected to be minimal. The potential impact of the proposed and existing facilities can be viewed as short-term effects resulting from physical disturbance during construction. The proposed facilities should have minimal impact on both resident and migratory birds.

No federally listed or currently proposed rare, threatened, or endangered species are known to occur in the immediate vicinity of the proposed construction sites.

4. Aquatic Resources

Wetland habitats may occur in the study area along rivers and streams. Erosion control methods will be instituted by the Cooperative on areas disturbed during construction as needed to assure that aquatic habitats are protected from siltation and other soil erosion effects. No herbicides will be used for clearing or maintenance of the access routes and

rights-of way, thus precluding impacts on aquatic resources attributable to such practices. Herbicides are used at substation sites with Forest Service approval. It is anticipated that no significant impacts on aquatic ecosystems will occur as a result of the included projects and related facilities.

5. Socioeconomic Resources

The principal short-term economic factors of the proposed construction will result from payments for materials obtained locally and temporary use of a small amount of local labor for construction. Contractor purchases of major construction supplies will probably be from outside the service area. There will be some additional income to local merchants from the sale of goods and services to both local and imported labor used for these projects.

Because the construction crews would be temporary, no significant impacts to community facilities such as transportation, communication, housing, schools, health care, law enforcement, fire protection, water supply, and sewage is expected. Workers will be housed in local motels or trailer parks that are already included in the planning of the community infrastructure.

The long-term economic effects will be through providing a capability to supply added power to serve the needs of the communities involved. Availability of reliable and adequate electrical service for the recreational, commercial, and industrial base of the service area to meet the projected requirements will contribute to the local economic growth.

6. Land Use

Little adverse impact is anticipated from the projects that consist of converting existing lines within established right-of-ways. All new construction will be mostly in areas where there is no current cultivation evident. A significant decrease in land values is not expected as a result of the construction projects. Current studies indicate that the impact of the presence of a utility easement on the value of cultivated agricultural land is negligible. This result holds regardless of the voltage of the improvements.

7. Cultural Resources

The State Historical Preservation Officer in New Mexico and in Arizona will be furnished a copy of this BER and will provide a listing and the location of sites in the service area. No known construction activities will conflict with any known site locations. Should any sites inadvertently be encountered during construction activities, construction crews will be stopped immediately. Also, the State Historical Preservation Officer will be contacted for guidance in ensuing steps to be taken to ensure that the sites are documented and protected to the degree necessary.

8. Visual Resources

Impacts to visual resources will involve the addition of distribution lines. These new structures will not greatly impact the visual environment. In some areas, the new facilities will be almost entirely hidden from view when one considers the remoteness with which a rural cooperative deals. With the many line conversions included in the work plan, it is likely the visual impact will be enhanced with more modern construction methods and hardware. With any line changes included in this work plan, the visual impact will be enhanced with new modern construction.

9. Electromagnetic Fields

Considerable research is being performed to determine how much and what kind of impact the addition of 60 Hz. fields from household electric appliances, house wiring, power lines in the street, and transmission lines traversing the countryside might produce.

At this time, much of the evidence from research has been inconclusive or even conflicting. It appears likely that some changes in living things can result from exposure to these fields, but no cause and effect has been proven between proximity to power lines and significant adverse health effects. No scientific evidence exists as yet whereby a "safe" field standard can be established.

While further research is being undertaken, it would be reasonable to take steps to minimize exposure while avoiding procedures that would create great unjustified expense. That is, consider these factors when routing new power lines but continue to use established rights-of-way where possible.

G. CONCLUSION

The facilities recommended in the Construction Work Plan 2000-2003 are necessary to allow Navopache Electric Cooperative to connect the new members requesting service and continue to supply reliable electric service to the existing consumers within the Cooperative's service area.

All construction will be performed in accordance with applicable RUS specifications and in a manner that will minimize the marring and scarring of the landscape. The location of all lines will incorporate the guide-lines set forth in "Environmental Criteria for Electrical Transmission Systems" as published jointly by the U.S. Department of the Interior and the U.S. Department of Agriculture.

During the construction of the facilities proposed in this work plan, the Cooperative commits itself to the following:

1. Examine feasible alternatives for each project to include underground construction, alternate routes, and conservation of materials and natural resources.

2. Consult with the State Historic Preservation officer in siting of the project if avoidance of areas of concern is not practical and advise RUS if a project will affect a site listed or eligible for listing in the National Register of Historic Places. If during construction, an undisclosed cultural resource is discovered, then construction will cease and RUS and the SHPO will be notified.

3. Wetlands will be avoided, as well as critical habitat for threatened or endangered species, to the maximum extent practicable. Where avoidance is not practicable, the Cooperative will consult with the U.S. Fish and Wildlife Service for alternatives and suggestions.

4. The Cooperative will locate projects so as to minimize the impact on important farmland and prime range land. When avoidance is not practicable, consultation with the Soil

Conservation Service or State Conservationist will be made.

5. Efforts will be made to avoid flood plains when there is a practicable alternative and to consult with the U.S. Army Corps of Engineers or other appropriate agency where avoidance is not practicable.

6. The State Department of Natural Resources will be contacted when lines are located in areas of concern, and the Cooperative will follow reasonable recommendations.

7. Consultation with local planning agencies having jurisdiction over project impact areas if avoidance of the area of concern is impractical.

8. The State Air Quality Agency will be consulted if any project may be in violation of the EPA (Environmental Protection Agency) approved or prepared SIP (State Implementation Plan).

Navopache Electric Cooperative, Inc., believes that prudent choices have been made in selecting the facilities to be constructed during the next four years and hereby gives assurance that the construction of these facilities will be carried out so as to minimize the impact on the environment.

NAVOPACHE ELECTRIC COOPERATIVE, INC.

STATE LAND DEPARTMENT
STATE OF ARIZONA

RIGHT-OF-WAY
(DEFINITE)

R/W No. 18-102691

RIGHT-OF-WAY effective July 9, 1998, by and between the State of Arizona, hereinafter called the Grantor, and

NAVOPACHE ELECTRIC COOPERATIVE, INC., an Arizona corporation

of Lakeside, State of Arizona, hereinafter called the Grantee.

WITNESSETH; Grantor grants to Grantee a Right-of-Way on, over, through and across the State lands described on the supplement attached hereto and made a part hereof for the purpose of and subject to the payments, terms, conditions, reservations and exceptions hereinafter set forth, to all of which the Grantee agrees.

TO HAVE AND TO HOLD the same for the period ending July 8, 2008.

The purpose of this Right-of-Way is the location, construction, operation and maintenance of

an overhead 69 KV electric subtransmission line

Rental shall be payable in advance for the above mentioned period in such amount as determined to be due on the basis of appraisals made by the State Land Commissioner.

The application for this Right-of-Way, together with all maps and attachments thereto, are by this reference made a part hereof as if set forth in full herein.

EASEMENT CONDITIONS

1. Grantee shall not sublet or assign the Right-of-Way herein granted, or any part thereof, without the written consent of Grantor first obtained, nor shall Grantee grant any franchise, permit or other right-of-way on the lands described herein, or any part hereof.

2. Grantee will not permit any loss, nor commit or cause any waste in, to or upon said land; nor cut or remove nor allow to be cut or removed any timber or standing trees that may be upon said land, save and except only such as may be necessary for the authorized use herein.

3. Grantor excepts and reserves out of the grant hereby made, all oils, gases, coal, ores, limestone, minerals, fossils and fertilizers of every name and description that may be found in or upon the land herein described, or any part thereof.

4. Grantor reserves the right to execute Grants covering the land herein described for the purpose of agriculture, grazing, commercial, homesite and prospecting for, and the extraction of oil, gases, coal, ores, limestone, minerals, fossils and fertilizers.

5. Grantor reserves the right to grant easements and rights-of-way over and across the lands described, so long as the same do not interfere with the proper use of this Right-of-Way.

6. Grantor reserves the right to relinquish to the Federal Government the State's right or claim to any part of the land described herein, and thereupon this easement will be null and void insofar as it relates to the land the State has so relinquished.

7. If for any reason the State of Arizona does not have title to any of the land described herein, this easement shall be null and void insofar as it relates to the land to which the State has failed to receive title.

8. If the Grantee should fail to pay the rental when due, or fail to keep the covenants and agreements herein set forth, the State Land Commissioner, at his option, may cancel said easement or declare the same forfeited in the manner provided by law.

9. After any default has occurred, no structure, building or other equipment may be removed from the Right-of-Way without the written permission of the Grantor.

10. The State of Arizona shall be forever wholly absolved from any liability for damages which might result to the Grantee herein on account of this easement having been cancelled, forfeited, or terminated prior to the expiration of the full time for which it is issued.

11. Any lands included in this easement which are sold shall be subject to this easement, and rental shall be collected thereon until such time as the purchaser shall have completed his contract and secured patent to the land.

12. If the Grantee desires to place improvements on the land described herein, the approval of the State Land Commissioner must first be obtained.

13. The terms, conditions and covenants of this easement are subject to present laws relating to State lands, and the rights of both Grantor and Grantee hereunder are each and all subject to such modifications as may be consistent with such amendments, revisions or repeals of existing laws as may hereafter be made, and no provisions of this easement shall create any vested right in the Grantee herein.

14. Grantee agrees to indemnify, hold and save Grantor harmless against all loss, damage, liability, expense, costs and charges incident to or resulting in any way from any injuries to person or damage to property caused by or resulting from the use, condition, or occupation of the land.

15. With regard to the location, construction and maintenance of the Right-of-Way:

    (a) Grantee shall ensure full compliance with the terms and conditions of this grant by its agents, employees and contractors (including sub-contractors of any tier), and the employees of each of them.

    (b) Unless clearly inapplicable, the requirements and prohibitions imposed upon Grantee by these terms and conditions are also imposed upon Grantee's agents, employees, contractors, and sub-contractors, and the employees of each of them.

    (c) Failure or refusal of Grantee's agents, employees, contractors, sub-contractors, or their employees to comply with these terms and conditions shall be deemed to be the failure or refusal of Grantee.

    (d) Grantee shall require its agents, contractors or sub-contractors to include these terms and conditions in all contracts and sub-contracts which are entered into by any of them, together with a provision that the other contracting party, together with its agents, employees, contractors and sub-contractors, and the employees of each of them, shall likewise be bound to comply with these terms and conditions.

16. All access roads over State land outside the Right-of-Way must be applied for and authorized in accordance with applicable regulations.

17. No material may be removed by Grantee or its contractors without the written approval of the Commissioner.

18. Grantee shall promptly notify the Commissioner of the amount of flora, if any, which will be cut, removed, or destroyed in the construction and maintenance of the project and shall pay the State Land Department such sum of money as the Commissioner may determine to be the full value of the flora to be so cut, removed or destroyed. Grantee shall notify the State Land Department and the Arizona Department of Agriculture 30 days prior to any destruction or removal of native plants to allow salvage of those plants where possible.

19. Grantee shall conduct all construction and maintenance activities in a manner that will minimize disturbance to all land values including, but not limited to vegetation, drainage channels, and streambanks. Construction methods shall be designed to prevent degradation of soil conditions in areas where such degradation would result in detrimental erosion or subsidence. Grantee shall take such other soil and resource conservation and protection measures on the land under grant or permit as determined necessary by the State Land Department.

20. Grantee shall be required, upon completion of right-of-way construction, to make such rehabilitation measures on the State lands, including, but not limited to, restoration of the surface, revegetation, and fencing as determined necessary by the State Land Department.

21. Upon revocation or termination of the Right-of-Way, the Grantee shall remove all equipment or facilities and, so far as is reasonably possible, restore and/or rehabilitate the land to its original condition, to the satisfaction of the Commissioner.

22. Costs incurred by the Grantee in complying with restoration and rehabilitation requirements as determined by the State Land Department on State trust lands shall be borne by the Grantee.

23. Prior to surface disturbance, the Grantee hereof shall provide evidence of archaeological clearance to the Arizona State Land Department. Archaeological surveys and site mitigation must be conducted in accordance with rules and regulations promulgated by the Director, Arizona State Museum. In the event additional archaeological resources are detected by Grantee after receipt of archaeological clearance, all work shall cease and notification shall be given to the Director, Arizona State Museum.

24. THIS DOCUMENT is submitted for examination and shall have no binding effect on the parties unless and until executed by the Grantor (after execution by the Grantee), and a fully executed copy is delivered to the Grantee.

25. IN THE EVENT OF A DISPUTE between the parties to this Agreement, it is agreed to use arbitration to resolve the dispute but only to the extent required by A.R.S. §12-1518; and, in no event shall arbitration be employed to resolve a dispute which is otherwise subject to administrative review by the Department pursuant to statute or Department Administrative Rule.

26. Grantor reserves the right to relinquish to the United States pursuant to the U.S. Act of August 30, 1890, land needed for irrigation works in connection with a government reclamation project.

27. Notice of authority to cancel this contract:

This contract is subject to cancellation pursuant to A.R.S. § 38-511.

28. Native Plant Law:

If the removal of plants protected under the Arizona Native Plant Law is necessary to enjoy the privilege of this Document, the Grantee hereunder must previously acquire the written permission of the Arizona State Land Department and the Arizona Department of Agriculture to remove those plants.

29. The Department does not represent or warrant that access exists over other State lands which intervene respectively between the above Right-of-Way easement and the nearest public roadway.

ENVIRONMENTAL INDEMNITY

Grantee shall protect, defend, indemnity and hold harmless the Grantor from and against all liabilities, costs, charges and expenses, including attorneys' fees and court costs arising out of or related to the presence of or existence of any substance regulated under any applicable federal, state or local environmental laws, regulations, ordinances or amendments thereto because of: (a) any substance that came to be located on the Right-of-Way due to Grantee's use or occupancy of the lands by the Grantee before or after the issuance of the Right-of-Way; or (b) any release, threatened release or escape of any substance in, on, under or from said Right-of-Way that is caused, in whole or in part, by any conduct, actions or negligence of the Grantee, regardless of when such substance came to be located on the Right-of-Way.

For the purposes of this Right-of-Way, the term "regulated substances" shall include substances defined as "regulated substances", "hazardous waste", hazardous substances", "hazardous materials", "toxic substances" or "pesticides" in the Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments of 1984, the Comprehensive Environmental Response, Compensation and Liability Act, the Hazardous Materials Transportation Act, the Toxic Substance Control Act, the Federal Insecticide, Fungicide and Rodenticide Act, the relevant local and state environmental laws, and the regulations, rules and ordinances adopted and publications promulgated pursuant to the local, state and federal laws. This indemnification shall include, without limitation, claims or damages arising out of any violations of applicable environmental laws, regulations, ordinances or subdivisions thereof, regardless of any real or alleged strict liability on the part of Grantor. This environmental indemnity shall survive the expiration or termination of this Right-of-Way and/or any transfer of all or any portion of the Premises and shall be governed by the laws of the State of Arizona.

In the event any such action or claim is brought or asserted against the Grantor, the Grantee shall have the right, subject to the right of the Grantor to make all final decisions with respect to Grantor's liability for claims or damages, (i) to participate with Grantor in the conduct of any further required cleanup, removal or remedial actions and/or negotiation and defense of any claim indemnifiable under this environmental indemnity provision, having reasonable regard to the continuing conduct of the operation/business located on the Premises and (ii) to participate with the Grantor in negotiating and finalizing any agreement or settlement with respect to any such claim or cleanup.

ADDITIONAL CONDITIONS
FOR 18-102691

1) Permittee will notify the grazing lessee of construction or maintenance dates at least 30 days prior to beginning construction or maintenance.

2) Any grazing related improvements (i.e. fencing, gates, pipelines, earthen structures, etc.) removed or damaged due to construction, operation or maintenance of this Right-of-Way will be replaced and/or reconstructed immediately. Damaged improvements will be replaced or reconstructed with new material. Cost of replacement and reconstruction will be the responsibility of the permittee.

3) Material for road construction or maintenance (i.e. fill dirt, sand and gravel, etc.) may not be acquired from State lands without the proper permits and authorization.

4) Permittee will construct the necessary erosion control structures (waterbars, etc.) on any existing roads and/or any new roads utilized in connection with this Right-of-Way.

5) Disposal of construction related material on State land is prohibited.

6) Should the permittee, or his contractor, disturb areas outside the authorized Right-of-Way, the permittee will be responsible for any reclamation necessary to restore the disturbed areas to a natural condition.

IN WITNESS HEREOF, the parties hereto have signed this Document effective the day and year set forth previously herein.

STATE OF ARIZONA, GRANTOR
Arizona State Land Commissioner

By: Maria Mendoza 7-31-98
Date

(SEAL)

Navopache Electric Coop. Inc 7/26/98
GRANTEE **Date**

7/26/98
By: **Date**

P.O. Box 308
Address

Lakeside, AZ 85929
City **State** **Zip**

TATE OF ARIZONA LAND DEPARTMENT
616 W. ADAMS
HOENIX, AZ 85007

RUN DATE: 9-jul-1998
RUN TIME: 15:43:48

K EASE NUMBER: 018-102691-00-000
MENDMENT NUMBER: 0

AND#	LEGAL DESCRIPTION	C.C.	ACREAGE
8.0-N-28.0-E-01-01-053-9005	M&B THRU E2W2	0.0	5.830
8.0-N-28.0-E-12-01-053-9006	M&B THRU NENW	0.0	0.800
9.0-N-28.0-E-13-01-031-9001	M&B THRU E2E2 SWSE	0.0	4.050
9.0-N-28.0-E-24-01-031-9001	M&B THRU SECTION	0.0	6.920
9.0-N-28.0-E-25-01-031-9001	M&B THRU NW	0.0	1.920
9.0-N-28.0-E-26-01-031-9002	M&B THRU E2	0.0	4.900
9.0-N-28.0-E-35-01-053-9003	M&B THRU E2	0.0	6.140
9.0-N-29.0-E-05-01-031-9003	M&B THRU NW	0.0	2.170
9.0-N-29.0-E-06-01-031-9001	M&B THRU E2	0.0	4.520
9.0-N-29.0-E-07-01-031-9005	M&B THRU SECTION	0.0	6.770
9.0-N-29.0-E-18-01-031-9004	M&B THRU NW	0.0	2.820
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).0-N-29.0-E-02-01-030-9001	M&B THRU SESESE	0.0	0.340
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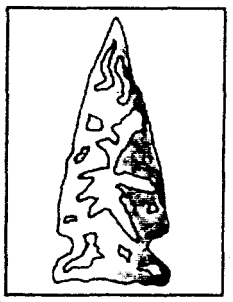
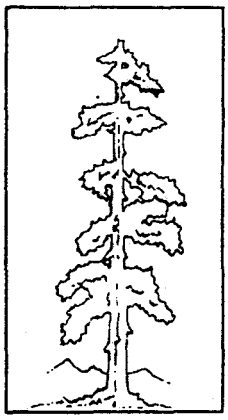
).0-N-29.0-E-28-01-053-9001	M&B THRU N2	0.0	5.870
).0-N-29.0-E-29-01-049-9001	M&B THRU E2	0.0	5.660
).0-N-29.0-E-32-01-030-9001	M&B THRU W2 NWNE	0.0	6.620
).0-N-30.0-E-06-01-031-9002	M&B THRU NW	0.0	2.390
	TOTALS:	0.0	91.350

A CULTURAL RESOURCES SURVEY ALONG A PROPOSED 69 KV POWERLINE RIGHT-OF-WAY BETWEEN THE ROUND VALLEY SWITCHING STATION AND THE SPRINGERVILLE GENERATING STATION, APACHE COUNTY, ARIZONA



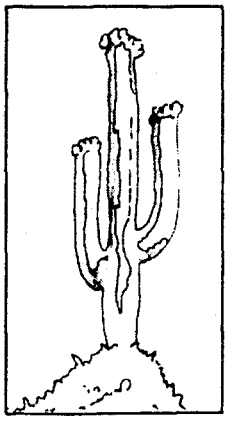
Prepared for

NAVOPACHE
ELECTRIC CO-OPERATIVE, INC.



Prepared by

SWCA, INC.
ENVIRONMENTAL CONSULTANTS



July 2, 1998

A Cultural Resources Survey along a Proposed 69 kV Powerline Right-of-Way between the Round Valley Switching Station and the Springerville Generating Station, Apache County, Arizona

Prepared for

Mr. Kent Rhoton
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Submitted to

Ms. Diane Crawford
Rights-of-Way Administrator
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Prepared by

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Arizona State Land Department Lease Application No. 14-102691
Arizona Antiquities Act Permit No. 98-03

SWCA Project No. 2398-13
SWCA Cultural Resource Report No. 98-19

July 2, 1998

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SHPO ABSTRACT

REPORT TITLE: A Cultural Resources Survey along a Proposed 69 kV Powerline Right-of-Way between the Round Valley Switching Station and the Springerville Generating Station, Apache County, Arizona

REPORT DATE: July 2, 1998

AGENCY: Arizona State Land Department (ASLD), Tucson Electric Power Co. (TEP)

PERMIT NO.: Arizona Antiquities Act Permit No. 98-03

PROJECT NUMBER: SWCA Project No. 2398-13

PROJECT DESCRIPTION: Navopache Electric Co-operative, Inc., proposes to build a 69 kV electric powerline linking the Springerville Generating Station to the Round Valley Switching Station east of Springerville/Eagar. A 66-foot (20-m) wide corridor was surveyed (the proposed 50-foot (15-m) wide right-of-way plus an 8-foot buffer on either side). Total length of the powerline corridor is 19.25 miles, resulting in a total survey area of 154 acres.

STATE LAND APPLICATION NO.: 14-102691

PROJECT LOCATION: The project area is located north and west of Springerville, Arizona, between the Round Valley Switching Station on State Route 260 and the Tucson Electric Power Co. Springerville Generating Station. The surveyed corridor passes through T8N, R28E, Secs. 1 and 12; T9N, R28E, Secs. 13, 24, 26, and 35; T10N, R29E, Secs. 1, 2, 10, 11, 15, 21, 22, 28, 29, and 32; T9N, R29E, Secs. 5, 6, 7, and 18; T10N, R30E, Sec. 6; and T11N, R30E, Secs. 31, 32, 33, and 34, on USGS 7.5 minute quadrangles Eagar, Arizona (1969, photorevised 1984), Springerville, Arizona (1969), Lyman Lake, Arizona (1971, photorevised 1984), and Voigt Ranch, Arizona (1971, photorevised 1984).

NUMBER OF ACRES SURVEYED: 154.0 acres: 122.80 acres of State Trust Land and 31.20 acres of private land (29.04 acres owned by TEP and 2.16 acres of other private land)

NUMBER OF SITES: None

LIST OF ELIGIBLE SITES: Not applicable

LIST OF INELIGIBLE SITES: Not applicable

RECOMMENDATIONS: A determination of no effect is recommended for this project, and clearance is recommended for powerline construction.

INTRODUCTION

On April 22 and 23, 1998, James Potter and Jim Hasbargen of SWCA, Inc., Environmental Consultants (SWCA) conducted an archaeological survey of 154 acres along a proposed 69 kV powerline right-of-way (ROW) north and east of Springerville, Arizona (Figure 1). The survey was requested by Navopache Electric Co-operative, Inc., (Navopache) of Lakeside, Arizona. The Arizona State Land Department (ASLD) is the reviewing agency, since most of the proposed ROW is on Arizona State Trust Lands. This survey was conducted under ASLD Application No. 14-102691 and Arizona Antiquities Act Permit No. 98-03. Three Isolated Occurrences (IOs) were identified during the survey.

DESCRIPTION OF UNDERTAKING

Navopache proposes to build a 69 kV electric powerline linking the Springerville Generating Station with the Round Valley Switching Station east of Springerville/Eagar. A preferred route and two alternative routes were identified by Navopache; however, only the preferred route was marked on the ground and surveyed in this project. The ROW will extend for 19.25 miles, crossing 15.35 miles of state land and 3.90 miles of private land (Figure 2). The majority of private land along the ROW, 3.63 miles, is owned by Tucson Electric Power Company (TEP). The surveyed corridor includes a 50 foot (15 meter) wide ROW plus an 8-foot (2.5-m) buffer on each side for a 66-foot (20-m) wide survey area. Total area surveyed is 154.0 acres.

LOCATION OF PROJECT AREA

The project area is in Apache County, north and west of Springerville, Arizona (Figure 2, in map pocket). The powerline ROW begins at the Round Valley Switching Station on State Route (SR) 260, in T8N, R28E, Sec 12. It ends at the Tucson Electric Power Co. Springerville Generating Station, in T1N, R30E, Sec 34. The powerline corridor is covered by USGS 7.5 minute maps Eagar, Arizona (1969, photorevised 1984), Springerville, Arizona (1969), Lyman Lake, Arizona (1971, photorevised 1984), and Voigt Ranch, Arizona (1971, photorevised 1984). The surveyed corridor passes through the following platted sections: T8N, R28E, Secs. 1 and 12; T9N, R28E, Secs. 13, 24, 26, and 35; T10N, R29E, Secs. 1, 2, 10, 11, 15, 21, 22, 28, 29, and 32; T9N, R29E, Secs. 5, 6, 7, and 18; T10N, R30E, Sec. 6; and T11N, R30E, Secs. 31, 32, 33, and 34.

ENVIRONMENTAL AND CULTURAL SETTING

The project area is on the southern Colorado Plateau in a region of lava flows dissected by the north-flowing Little Colorado River and its tributaries. Brown and Lowe (1980) classify the biotic community as Plains and Great Basin Grassland. Riparian vegetation is present along the Little Colorado River and Coyote Creek. Piñon-juniper woodland dominates the uplands.

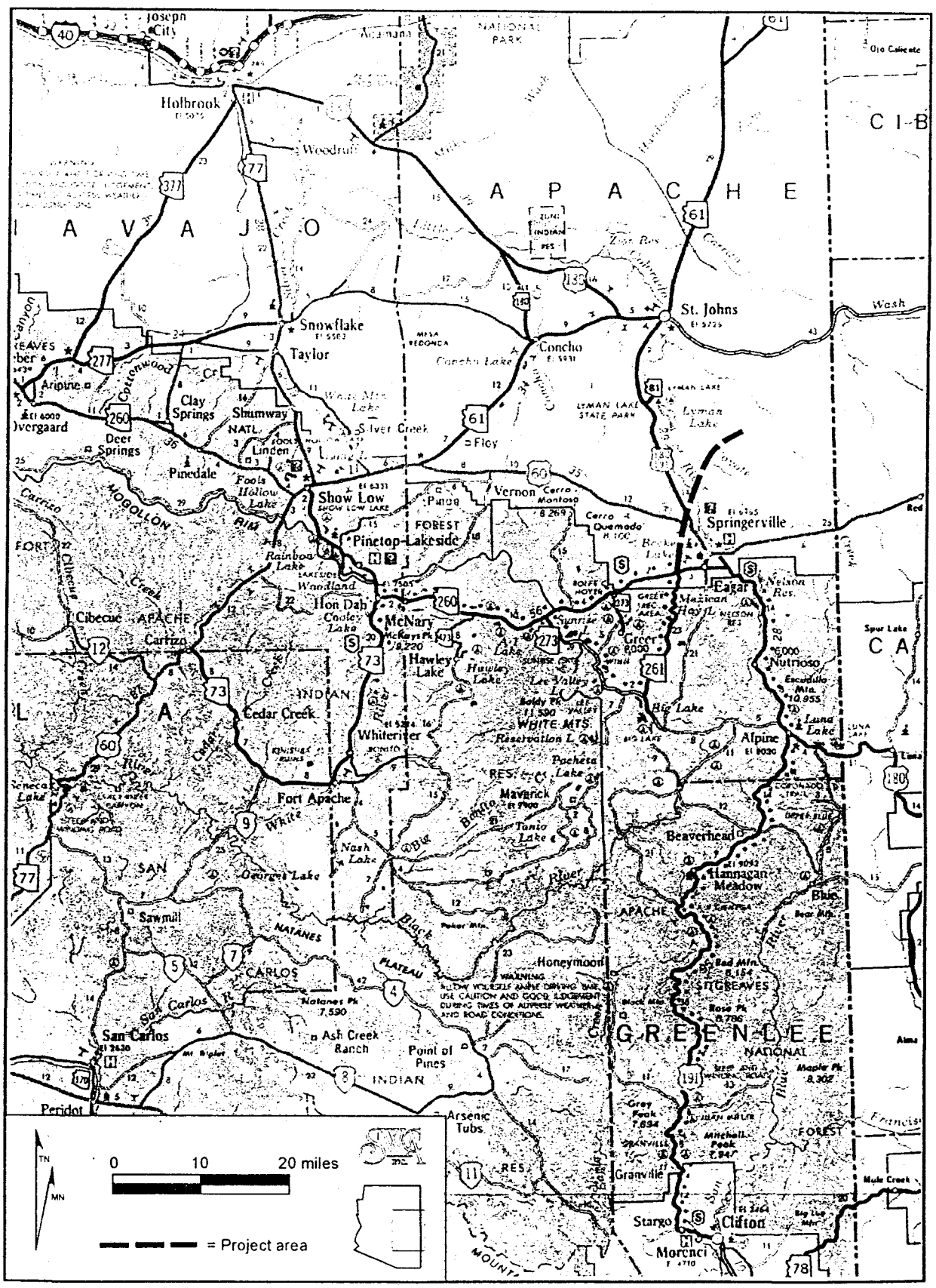

Figure 1. Location of study area.

The survey found only three IOs, requiring no culture history review or cultural interpretation. For thorough summaries of prehistoric and historic research and culture history in the region, refer to Gilpin 1996a and 1996b.

REVIEW OF EXISTING DATA

Laural Myers of SWCA conducted a site file search at the Arizona State Museum (ASM) on January 26, 1998. The ASM site files contained records of eight previous projects within, adjacent to, or intersecting the current project area (Table 1). Four previous ROW surveys overlapped the northern end of the current project area (Hase 1990, 1995; Wilson 1978, 1980). One previous survey connected with the current project area at its southern terminus (Nightengale 1992). Two previous surveys intersected the current project ROW in the area between U.S. Highway 60 and the Little Colorado River (Hoffman 1981; Weaver 1991), and a third survey paralleled the current project ROW in that same general area (Hase 1992). None of these projects recorded any archaeological sites, historic sites, or IOs within the current project area.

On January 28, 1998, Darbi Moore of SWCA searched records in the Arizona State Historic Preservation Office (SHPO). This search also located the survey along U.S. Highway 60 (Weaver 1991) but found no further projects or sites, historic or prehistoric, in the project area. Moore also checked General Land Office plat maps in the Bureau of Land Management State Office GLO records and found no further information on research or sites in the project area.

Table 1. Previous Projects and Recorded Sites along Right-of-Way Corridor

Reference	**Description**	**Recorded Sites within 0.5 km**
Wilson 1978 (ASM 1978-59)	utility corridor survey	0
Wilson 1980 (ASM 1980-240)	utility corridor survey	0
Hoffman 1981	3-4 mile wide survey along Little Colorado River, St. Johns to Springerville	0
Hase 1990 (ASM 1990-206)	water pipeline/erosion control survey	0
Weaver 1991 (ASM 1991-191, SHPO 1991-91)	highway maintenance/ROW survey	0
Nightengale 1992 (ASM 1992-50)	powerline ROW survey	0
Hase 1992 (ASM 1992-116)	pipeline ROW survey	0
Hase 1995 (ASM 1995-251)	erosion control project survey	0

SURVEY METHODS

A non-collection pedestrian survey was completed on April 22 and 23, 1998, by James Potter and Jim Hasbargen of SWCA. A single transect, 66 feet (20 m) wide, was walked along the proposed centerline for the preferred powerline route, which had been staked in September 1997 by surveyors working for Navopache.

RESULTS

Three IOs were identified during this project (Figure 2). All IOs were in the Coyote Creek drainage, south of the creek bed.

IO 1 consisted of one black quartzite secondary flake and two white chalcedony multidirectional cores, with cortex still present on both of them. It was found on a north-facing slope, at an elevation of 6700 ft (2040 m), in a small tributary of Coyote Creek. Vegetation was piñon/juniper woodland.

IO 2 consisted of an exhausted, multidirectional, gray chert core. It was found 30 m south of Stake 123, on a northeast-facing slope above Coyote Creek, at an elevation of 6600 feet (2010 m). Vegetation was piñon/juniper woodland.

IO 3 consisted of one yellow chert secondary flake. It was found immediately south of Coyote Creek, on alluvial sediments comprising the first terrace, at an elevation of 6560 feet (2000 m). Vegetation was riparian/grassland.

RECOMMENDATIONS

Only three Isolated Occurrences were located during this survey, and the data potential of these artifacts has been exhausted by recording. We therefore recommend archaeological clearance for the proposed powerline corridor along the preferred route. This undertaking will have no adverse effect on archaeological resources within the project area. It is recommended, however, that construction stop and a qualified archaeologist be contacted in the event that construction activity uncovers any previously unidentified archaeological remains.

REFERENCES

Brown, David E., and Charles H. Lowe

1980 *Biotic Communities of the Southwest.* USDA Forest Service, Rocky Mountain Region, General Technical Report RM-78. Reprinted 1994 by University of Utah, Salt Lake City.

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1992 *Navopache Electric Cooperative Archeological Survey - Part 37.* ASM Report No. 1992-50. Arizona State Museum, The University of Arizona, Tucson.

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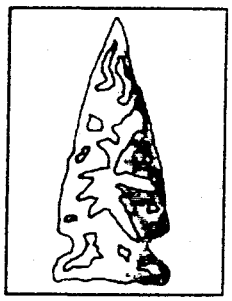
1978 *Cultural Resources on State Trust Lands Crossed by Three Utility Corridors, Catron County, New Mexico and Apache County, Arizona.* ASM Report No. 1978-59. Submitted to Tucson Gas and Electric Company, Tucson.

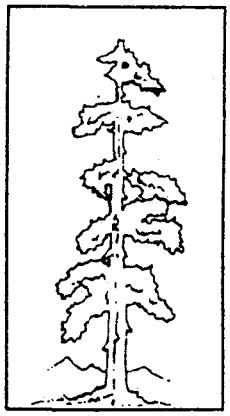
1980 *Archaeological Survey on a 1.83 Mile Utility Corridor Associated with the Springerville Generating Station, Apache County, Arizona.* ASM Report No. 1980-240. Submitted to Tucson Gas and Electric Company, Tucson.

GENERAL BIOLOGICAL ASSESSMENT: SPECIAL STATUS PLANT SURVEY AND HABITAT ASSESSMENT FOR THE SOUTHWESTERN WILLOW FLYCATCHER ALONG A 19.25-MILE PROPOSED POWER LINE BETWEEN ROUND VALLEY AND SPRINGERVILLE, APACHE COUNTY, ARIZONA



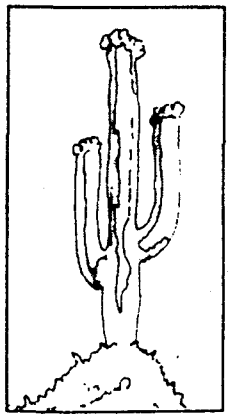
Submitted to:

NAVOPACHE ELECTRIC CO-OPERATIVE, INC.



Submitted by:

SWCA, Inc., Environmental Consultants



AUGUST 1998

GENERAL BIOLOGICAL ASSESSMENT: SPECIAL STATUS PLANT SURVEY AND HABITAT ASSESSMENT FOR THE SOUTHWESTERN WILLOW FLYCATCHER ALONG A 19.25-MILE PROPOSED POWER LINE BETWEEN ROUND VALLEY AND SPRINGERVILLE, APACHE COUNTY, ARIZONA

Submitted to:
Mr. Kent Rhoton
Manager of Engineering Services
NAVOPACHE ELECTRIC CO-OPERATIVE, INC.
P.O. Box 308
Lakeside, AZ 85929

Submitted by:

SWCA, Inc.
Environmental Consultants
114 N. San Francisco St. Suite 100
Flagstaff, Arizona 86001
(520) 774-5500

August 7, 1998

INTRODUCTION

SWCA, Inc., Environmental Consultants was contracted by Springerville Navopache Electric Co-operative, Inc. to complete a biological assessment consisting of a special status plant survey along a 19.25-mile proposed 69 kV powerline and a survey for the southwestern willow flycatcher at the point where the proposed power line will cross the Little Colorado River (LCR). This proposed power line would run from the Springerville generating station (13 miles north of Springerville), southwest to the Round Valley switching station, approximately 2.5 miles west of the town of Eager (Figure 1).

The habitat surrounding the proposed right-of-way consists of high, arid grasslands surrounded by pinyon/juniper habitats to the north and montane forests of the White Mountains to the south. The proposed alignment consists of high arid grasslands with a small portion of pinyon/juniper habitat on the northern portion of the project area. The LCR crossing consists of a steep-walled canyon with a perennial stream bordered by perennial vegetation 1-2 meters in height. Elevations range from 6,700-7,000 feet.

METHODS

Special Status Plants

A list of sensitive plants to be surveyed for was obtained from the 1990 U.S. Forest Service Region 3 Handbook of Sensitive Plant Species (US Forest Service 1990). This list included the following species: Arizona willow (*Salix arizonica*), Gila groundsel (*Senecio quaerens*), Gooding's onion (*Allium goodingii*), Mogollon paintbrush (*Castelleja mogollonica*), Navajo sedge (*Carex specuicola*), Nutrioso milk vetch (*Astragalus nutriosensis*), and Standley Whitlow wort (*Draba standleyi*).

A biological reconnaissance of the proposed alignment and a preliminary southwestern willow flycatcher survey was conducted on 27-28 May 1998. On 27 May 1998, four transects, each 1 mile in length and evenly spaced over the length of the alignment, were surveyed by a field biologist for special status plant species. The surveyor briefly surveyed the entire length of each transect, stopping to conduct a 5-10 minute ground search every 1/4 mile.

Southwestern Willow Flycatcher

A survey for the southwestern willow flycatcher was conducted at the LCR crossing on the morning of 28 May 1998. This survey was conducted between 0500 and 1000 hours during the first survey period as described by Sogge et al. 1997. A 1/4 mile portion of the LCR was surveyed, 1/8 mile above and 1/8 mile below the point of the proposed crossing. The surveyor stopped every 25 meters to play a willow flycatcher survey tape followed by a 1-2 minute

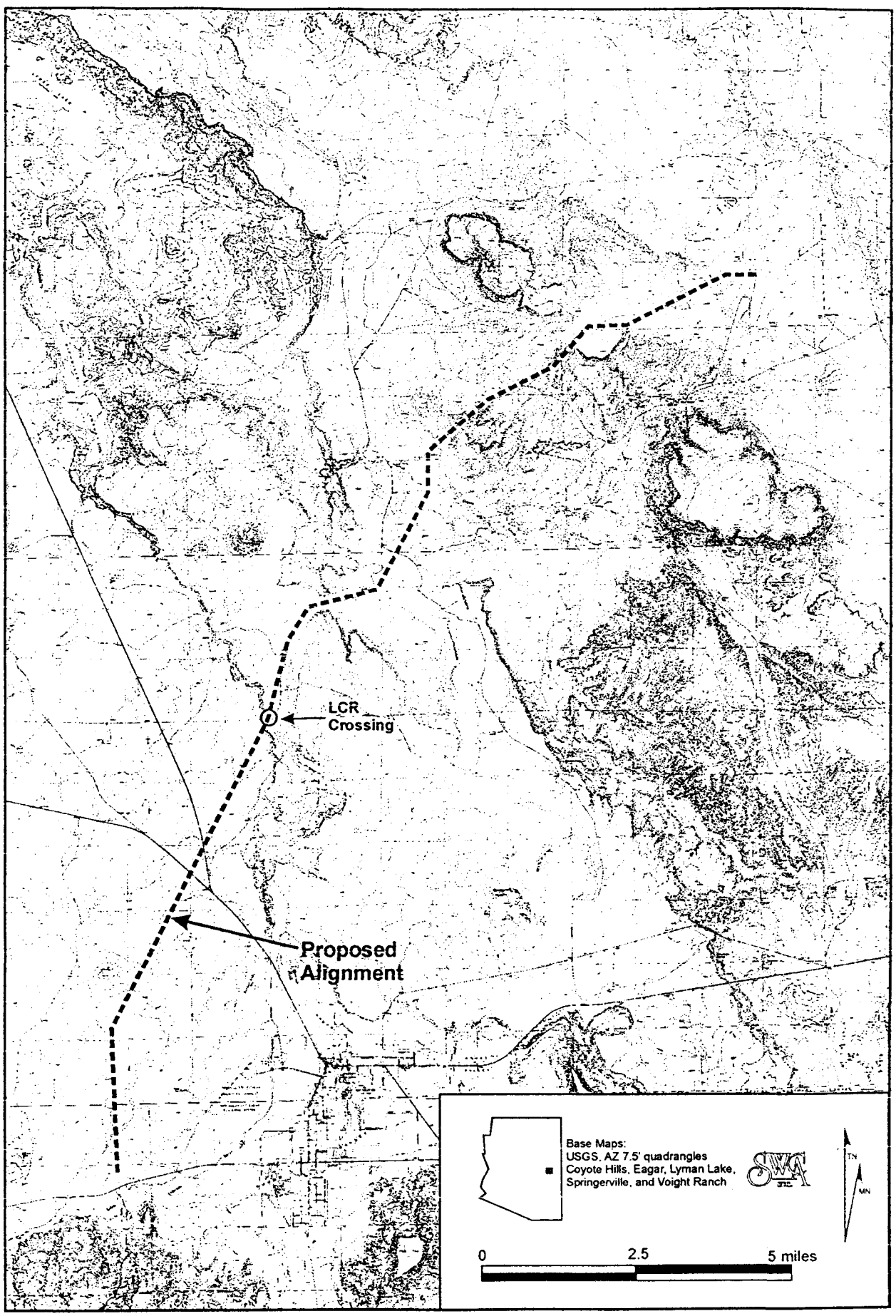


Figure 1. Proposed powerline alignment.

listening period to detect any singing flycatchers. A total of three hours was spent surveying the LCR crossing for flycatchers.

A second site visit and habitat assessment was conducted on 2-3 July 1998. During this site visit, photos were taken at numerous locations along the entire length of the alignment. On the morning of 3 July 1998, photos were taken of the proposed LCR crossing to document the absence of breeding habitat for the flycatcher.

RESULTS

Plant species found in the grassland habitat include prickly pear cactus (*Opuntia* sp), cholla cactus (*Cholla* sp), desert olive (*Forestierria neomexicana*), gooseberry (*Ribes* sp), currant (*Rhus trilobata*), juniper (*Juniperus* sp), and various grasses (*Bouteloua* sp, *Bromus* sp, *Agropyron* sp) (Figure 2). Bird species noted on the proposed alignment include common raven (*Corvus corax*), western meadowlark (*Sturnella neglecta*), horned lark (*Eremophila alpestris*), turkey vulture (*Cathartes aura*), and Say's phoebe (*Sayornis saya*). Mammal species noted on the proposed alignment include pronghorn (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), rock squirrels (*Spermophilus variegatus*) and numerous domestic cattle.

The LCR crossing is composed of many species found on the grassland habitat (Figure 3). Additional species found in the LCR canyon includes willow (*Salix* sp), alder (*Alnus* sp), Arizona rose (*Rosa arizonica*), ash (*Fraxinus* sp), hopbush (*Dodonea viscosa*), Spanish bayonet (*Yucca angustissima*), and canyon grape (*Vitus arizonica*). The habitat is dominated by woody shrubs between 1-2 meters tall. Few exceptions include infrequent junipers and alder trees that extend the height of the vegetation to 3-4 meters. Bird species noted during the willow flycatcher survey include blue grosbeak (*Guiraca caerulea*), yellow-breasted chat (*Icteria virens*), brown-headed cowbird (*Molothrus ater*), and broad-tailed hummingbird (*Selasphorus platycercus*).

SENSITIVE PLANT SURVEY

Arizona willow (*Salix arizonica*)

Arizona willow is one of the 17 species of willow found in Arizona and is identified by ovate, broadly elliptic leaves which are not frosted in appearance (McDougal 1972). The species is found at elevations of 8,550-10,000 feet in wet meadows, streamsides, and cienegas (AZGF 1993). The closest known locality of this species is at the headwaters of the LCR and Becker Creek (AZGF 1993). The species is not known to occur on the portion of the LCR where the proposed power line will cross and no specimens of this plant were detected on either site visit. The proposed crossing will have no effect on the species.

Figure 2- Grassland habitat as seen on proposed powerline showing habitat type.

Figure 3- Proposed powerline crossing at the LCR showing habitat type and river.

Gila groundsel (*Senecio quaerens*)

Gila groundsel is a perennial yellow composite identified by hairless aerial portions and toothed leaves. This species also has a fibrous root system. In Arizona, Gila groundsel is found only in the White Mountains at elevations of 8,000-9,000 feet. It occurs in association with ponderosa pine, usually among shrubby or grassy hummocks in partial shade of forest overstory (AZGF 1997). The project site does not fall in the elevational gradient or meet habitat needs for this species. The proposed power line will have no effect on the species. No specimens of this plant were detected on either site visit.

Gooding's onion (*Allium goodingii*)

Gooding's onion is one of 13 species of the genus *Allium* that exist in Arizona. It has an iris-like growth form and is identified by broad (8mm) leaves and purplish-red to rose-pink six-petalled flowers. The inflorescence is erect distinguishing Gooding's onion from other onions which have noticeably drooping flowers. It occurs at elevations of 7,000-9,400 feet (11,300 feet in New Mexico) and prefers habitats of moist, shaded canyon bottoms in climax conifer forests (AZGF 1997). No habitat was found for Gooding's onion in the project area and no specimens of this plant were detected on either site visit. The project will have no effect on the species.

Mogollon paintbrush (*Castelleja mogollonica*)

Mogollon paintbrush is distinguished from the 200-250 species of *Castelleja* by having yellow bracts, sometimes with a rosy tinge. The stems are tall and the leaf blades are entire. This species occurs in high, wet, alpine meadows of the White Mountains of Arizona, at 8,500-9,500 feet (AZGF 1992). No habitat exists on or near the proposed power line project and the proposed action will have no effect on the species. No specimens of this plant were detected on either site visit.

Navajo Sedge (*Carex specuicola*)

Navajo sedge is known from the Arizona/Utah border and can be identified by having narrow, grasslike leaves that droop downward with reddish-tinged stem bases. It is a perennial forb found at elevations of 5,710-6,000 feet in areas with 80-90% slope aspect. It is typically found in Navajo or Windgate sandstones in Great Basin coniferous woodlands (AZGF DRAFT 1995).[1] At the present time, the species is not known to occur within the project area and will not be affected by the proposed power line construction.

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[1]Information provided for this species was provided as a draft and is subject to change.

Nutrioso milk vetch (*Astragalus nutriosensis*)

Nutrioso milk vetch is found in eastern Arizona and as of 1991 is known from only two localities along Nutrioso Creek between Springerville and the town of Nutrioso. This species has a dwarf growth form and lacks a stem. All leaves are basal with inflorescences bearing 2-5 flowers. None of the inflorescences ascend above the leaves. Habitat requirements are described as open grasslands and mesa tops at elevations of 7,400-7,600 feet, sometimes among pinyon/juniper forests on gently sloping hillsides (AZGF 1997). Given the limited distribution and preferences of elevation, this species should not occur in the project area and will not be affected by the proposed power line. No specimens of this plant were detected on either site visit.

Standley Whitlow wort (*Draba standleyi*)

Standley Whitlow wort is a perennial herb that can be identified by having basal, spatulate leaves and yellow flowers which are borne on a leafless flower stalk. This distinguishes the species from other species of *Draba* which have leafed flower stalks. Preferred habitat for this species includes rock crevices and outcrops in moist, shaded areas of mixed conifer, spruce, or ponderosa pine forests at elevations of 6,900-11,000 feet. This species is often associated with Rocky Mountain Maple (AZGF 1997). No suitable habitat exists for this species on the project area and no specimens of this plant were detected on either site visit.

SOUTHWESTERN WILLOW FLYCATCHER HABITAT ASSESSMENT

The southwestern willow flycatcher (*Empidonax trailii extimus*) is a small, greyish flycatcher identified in the field by the presence of an eye ring and two pale wing bars. This flycatcher is extremely similar in appearance to other members of the genus *Empidonax* but can be readily distinguished from the other species by song (Peterson 1990).

Habitat requirements for the southwestern willow flycatcher are categorized into four classifications. These include: monotypic high-elevation willow with dense stands of vegetation 3-7 meters in height; monotypic exotic with dense stands of saltcedar (*Tamarix* sp) or Russian olive (*Eleagnus angustifolia*) 4-10 meters in height; native broadleaf dominated composed of a single or multiple native species 3-15 meters in height and having recognizable subcanopy layers; and mixed native/exotic with dense mixtures of native broadleaf trees and shrubs mixed with exotic/introduced species (Sogge et al. 1997).

Since there are known breeding populations of the southwestern willow flycatcher on the LCR, it was necessary to conduct a survey/habitat assessment for the species at the crossing of the proposed power line at the LCR. After a site reconnaissance of the LCR crossing on the first site visit, it was decided that a habitat assessment would better suit the needs of Navopache Electric to insure no breeding habitat would be affected by construction activity. The habitat assessment

revealed that the vegetation at the LCR crossing lacks the height and density requirements to make this favorable nesting habitat for willow flycatchers (Figure 4). Given the habitat present, the proposed power line crossing the LCR will have no effect on the species. Willow flycatchers were not detected during site visits.

Figure 4. Proposed LCR crossing showing canopy height and vegetative coverage/composition.

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SGS WITTER, INC.
CONSULTING ENGINEERS & PLANNERS

Offices located in Albuquerque, NM and Lubbock, TX

December 20, 1999

Ms. Jennifer Fowler-Propst
Ecological Services
U.S. Fish and Wildlife Service
2105 Osuna NE
Albuquerque, New Mexico 87113

RE: Borrower's Environmental Report Navopache Electric Cooperative, Inc.

Dear Ms. Fowler-Propst:

We are in the process of preparing a construction work plan for the Navopache Electric Cooperative, Inc. of Lakeside, Arizona. The Cooperative provides electric power to consumers in the State of Arizona and to portions of Catron County, New Mexico. This will be used as supporting engineering data for a loan application to the Rural Utilities Service (RUS) in Washington, D.C. A primary consideration of this procedure is to assure that the proposed construction projects do not adversely affect the quality of the environment. Therefore, we request that your staff review the planned construction projects outlined in the enclosed "Project List".

A considerable portion of the proposed construction is of a continuing nature involving line extensions to provide electrical service to new members. These extensions can be one or more spans of primary distribution line to reach the desired service location. Also included are system improvements that are required to increase capacity or reliability, improve voltage levels, or decrease losses.

The submission of the work plan materials to you is not a specific request for a tabulation of federally listed or proposed to be listed threatened or endangered species, but rather a submission for your information and comment only in the event that U.S.F.W.S. is aware of some specific environmental impediment (endangered species or otherwise) of which the Cooperative is not aware.

The protection afforded to threatened and endangered species and their critical habitats under the Endangered Species Act still applies to all projects. This Cooperative is, as are all RUS borrowers, responsible for and will comply with the provisions of the 1978 amendments to the Endangered Species Act regarding the effect (if any) of their distribution and transmission line construction program on threatened and endangered species.

The "Borrower's Environmental Report" provides a general description of the Cooperative's construction practices. The Cooperative is aware that floodplains and wetlands occur in their service area, and line construction in these places is avoided whenever possible. Where construction is required in these areas, steps are taken to minimize the impact.

1804-A Juan Tabo Blvd. NE, Albuquerque, NM 87112 • Office: (505) 292-3635 • Fax: 293-2230

We would appreciate your review of this information and your concurrence with the work plan proposed for the Cooperative. If there are specific practices which the Cooperative needs to implement, please let us know about them and any particular area involved.

The completed work plan is one of the many items required by RUS supporting documents for construction loan fund approval. A written response from your agency is required and we respectfully request your reply by February 4, 2000.

Please address your letter to:

Mr. Kent Rhoton, Manager of Engineering
Navopache Electric Cooperative, Inc.
P.O. Box 308
Lakeside, Arizona 85929
(1-800-543-6324)

We would appreciate your sending a copy of this reply to the engineer at the address on the letterhead.

Sincerely,

SGS WITTER, INC.

Michael L. Smith

Michael L. Smith, P.E.

enclosure

cc: Kent Rhoton, Navopache

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 346-2525 Fax: (505) 346-2542

January 27, 2000

Cons# 2-22-00-I-141

Michael L. Smith, P.E.
SGS Witter, Inc.
1804-A Juan Tabo Blvd. NE
Albuquerque, New Mexico 87112

Dear Mr. Smith:

This responds to your letter dated December 20, 1999, concerning the Borrower's Environmental Report for the Navopache Electric Cooperative, Inc. It is our understanding that SGS Witter is in the process of preparing a work construction plan for the Navopache Electric Cooperative, Inc. of Lakeside Arizona. Although a portion of the proposed activities may occur within Catron County, New Mexico, the majority occur in Arizona. Accordingly, the U.S. Fish and Wildlife Service (Service) Arizona Ecological Services Field Office provided comments on the proposed activities in a letter dated January 14, 2000 (consultation number 2-21-00-I-108). The proposed actions generally consist of the construction of new powerlines, electrical substations, and the renovation of existing powerlines. This includes providing service/hookups to new customers. The information you submitted did not identify project-specific locations. Based on the information provided, we offer the following comments regarding important fish and wildlife resources that may occur in the project area.

We have enclosed a list of endangered, threatened, and candidate species, and species of concern that may be found in Catron County for your consideration. Under the Endangered Species Act, as amended (Act), it is the responsibility of the Federal action agency or its designated representative to determine whether a proposed action "may affect" any listed or proposed species. Section 7 of the Act requires Federal agencies to consult with us should it be determined that their actions may affect a listed threatened or endangered species. We recommend that adequate species-specific surveys be conducted within suitable habitat during the appropriate flowering/breeding seasons to address project-related impacts on these species. Candidate species and species of concern have no legal protection under the Act and are included in this document for planning purposes only. We are concerned and would appreciate receiving any status information that is available or gathered on these species. If any candidates or species of concern decline significantly, they could be listed as endangered or threatened species. Therefore, actions which may contribute to the decline of these species should be avoided.

Regarding electrical infrastructure, birds of prey such as eagles, hawks, and owls frequently use power lines and support structures for perching and nesting. These raptors can be electrocuted while using power lines, thus contributing to the cumulative mortality factors affecting these biologically important and environmentally sensitive birds. Electric distribution lines carrying voltages of 12 kV to 69kV present the greatest threat of electrocution, particularly in areas supporting high concentrations and diversity of raptors, i.e., southwest region of the United States. Standard techniques have been developed to prevent raptor electrocutions at electric distribution lines. This latest guidance is included in the publication Suggested Practices for Raptor Protection on Power Lines - The State of the Art in 1996 by the Avian Power Line Interaction Committee. The document may be requested from the Raptor Research Foundation at 12805 St. Croix Trail, Hastings, Minnesota 55033, phone (612) 437-4359 or JMFITZPTRK@aol.com.. For the use of steel poles, we recommend incorporating special design considerations (*such as described by R. Harness, Steel Distribution Poles - Environmental Implications, Paper No. 98-D1 (IEEE Catalog No. 98CH36188), presented at the 1998 Rural Electric Power Conference, St. Louis, Missouri, April 26-28, 1998)* to minimize or eliminate the likelihood of bird electrocutions on these facilities.

As the Federal agency responsible for the protection of migratory birds (including raptors), the Service recommends that all new or modified electric distribution lines be designed and constructed to prevent the electrocution of raptors, using the above-referenced guidance. Proper design should include adequate separation of energized hardware or insulation of wires where sufficient separation cannot be attained. Closely spaced transformer jumper wires, bushing covers, protective cutouts, or surge arresters can be raptor-proofed by the use of special insulating material. The use of grounded steel crossarm braces should be avoided. These measures should be implemented on each line and pole associated with new or converted lines.

In addition, the potential for powerline collisions and/or electrocutions by birds often increases near wetlands; therefore, the Service recommends any related powerline facilities avoid crossing wetlands. To minimize the likelihood of impacts to nesting birds, the Service recommends construction activities occur outside the general migratory bird nesting season extending from March through August, or that areas proposed for construction within the nesting season be surveyed to determine if nesting birds are present and if necessary avoiding those areas until nesting is complete. Failure to implement the above measures may result in violations of the Migratory Bird Treaty Act, Endangered Species Act, and the Eagle Protection Act.

With regard to other important fish and wildlife resources, wetlands and floodplains should be protected. If wetlands appear to be involved, we recommend contacting the U.S. Army Corps of Engineers regarding any permitting requirements under Section 404 of the Clean Water Act. The Service should be contacted for further assistance if adverse impacts to these resources and sensitive habitats cannot be avoided. Please keep in mind that for federally-listed species compliance, the scope of environmental review should include any interrelated

or interdependent project activities (such as maintenance, road construction, etc.) likely to occur as a result of the proposed actions.

The New Mexico Department of Game and Fish and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry and Resources Conservation Division should be contacted for information concerning fish, wildlife, and plants of State concern.

If we can be of any further assistance, please contact Chris Perez at (505) 346-2525, ext. 119.

Sincerely,

Joy E. Nicholopoulos

Joy E. Nicholopoulos
Field Supervisor

Enclosures

cc: (w/o enc)
Kent Rhoton, Mgr. of Engineering, Navopache Electric Cooperative, Inc., Lakeside, Arizona
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Director, New Mexico Energy, Minerals, and Natural Resources Department, Forestry and Resources Conservation Division, Santa Fe, New Mexico
Field Supervisor, Fish and Wildlife Service, Phoenix, Arizona

Threatened, Endangered, Candidate Species,
and Species of Concern
for Catron County, New Mexico
January 27, 2000

Catron

Allen's (Mexican) big-eared bat, Idionycteris (=Plecotus) phyllotis, SC
Big free-tailed bat, Nyctinomops macrotis (=Tadarida m., T. molossa), SC
Black-footed ferret, Mustela nigripes, E**
Cave myotis, Myotis velifer, SC
Greater western mastiff bat, Eumops perotis californicus, SC
Fringed myotis, Myotis thysanodes, SC
Long-eared myotis, Myotis evotis, SC
Long-legged myotis, Myotis volans, SC
Occult little brown bat, Myotis lucifugus occultus, SC
Pale Townsend's (=western) big-eared bat, Plecotus townsendii pallescens, SC
Southwestern otter, Lutra canadensis sonorae, SC
Small-footed myotis, Myotis ciliolabrum, SC
Spotted bat, Euderma maculatum, SC
Yuma myotis, Myotis yumanensis, SC
American peregrine falcon, Falco peregrinus anatum, SC
Arctic peregrine falcon, Falco peregrinus tundrius, SC (S/A)
Baird's sparrow, Ammodramus bairdii, SC
Bald eagle, Haliaeetus leucocephalus, T
Ferruginous hawk, Buteo regalis, SC
Interior least tern, Sterna antillarum, E
Loggerhead shrike, Lanius ludovicianus, SC
Mexican spotted owl, Strix occidentalis lucida, T
Mountain plover, Charadrius montanus, PT
Northern goshawk, Accipiter gentilis, SC
Southwestern willow flycatcher, Empidonax traillii extimus, E w/CH
Western burrowing owl, Athene cunicularia hypugaea, SC
Yellow-billed cuckoo, Coccyzus americanus, SC
Chihuahua catfish, Ictalurus sp.*, SC
Desert sucker, Catostomus clarki, SC
Gila chub, Gila intermedia, C
Gila trout, Oncorhynchus gilae, E
Loach minnow, Rhinichthys cobitis, T
Longfin dace, Agosia chrysogaster, SC
Roundtail chub, Gila robusta, SC
Sonora sucker, Catostomus insignis, SC

Catron, cont'd

Speckled dace, Rhinichthys osculus (Gila drainage), SC

Spikedace, Meda fulgida, T
Arizona southwestern toad, Bufo microscaphus microscaphus, SC
Chiricahua leopard frog, Rana chiricahuensis, C
Lowland leopard frog, Rana yavapaiensis, SC
Mexican garter snake, Thamnophis eques, SC
Narrowhead garter snake, Thamnophis rufipunctatus, SC
New Mexico silverspot butterfly, Speyeria nokomis nitocris, SC
Gila springsnail, Pyrgulopsis gilae, C
Chiricahua dock, Rumex orthoneurus, SC
Gila groundsel, Senecio quaerens, SC
Goodding's onion, Allium gooddingii, SC
Hess' fleabane, Erigeron hessii, SC
Mogollon clover, Trifolium longipes var. neurophyllum, SC
Parish's alkali grass, Puccinellia parishii, SC
Santa Fe cholla, Opuntia viridiflora, SC
Zuni (=rhizome) fleabane, Erigeron rhizomatus, T

Index

E	=	Endangered (in danger of extinction throughout all or a significant portion of its range).
PE	=	Proposed Endangered
PE w/CH	=	Proposed Endangered with critical habitat
T	=	Threatened (likely to become endangered within the foreseeable future throughout all or a significant portion of its range).
PT	=	Proposed Threatened
PT w/CH	=	Proposed Threatened with critical habitat
PCH	=	Proposed critical habitat
C	=	Candidate Species (taxa for which the Service has sufficient information to propose that they be added to list of endangered and threatened species, but the listing action has been precluded by other higher priority listing activities).
SC	=	Species of Concern (Taxa for which further biological research and field study are needed to resolve their conservation status OR are considered sensitive, rare, or declining on lists maintained by Natural Heritage Programs, State wildlife agencies, other Federal agencies, or professional/academic scientific societies.) Species of Concern are included for planning purposes only.
S/A	=	Similarity of Appearance
*	=	Introduced population
XN	=	Nonessential experimental
**	=	Survey should be conducted if project involves impacts to prairie dog towns or complexes of 200-acres or more for the Gunnison's prairie dog (Cynomys gunnisoni) and/or 80-acres or more for any subspecies of Black-tailed prairie dog (Cynomys ludovicianus). A complex consists of two or more neighboring prairie dog towns within 4.3 miles (7 kilometers) of each other.
***	=	Extirpated in this county

SGS WITTER, INC.
CONSULTING ENGINEERS & PLANNERS

Offices located in Albuquerque, NM and Lubbock, TX

December 20, 1999

Ms. Gail Acheson
Area Manager
Phoenix Resource Area
Bureau of Land Management
2015 W. Deer Valley Road
Phoenix, Arizona 85027

RE: Borrower's Environmental Report Navopache Electric Cooperative, Inc.

Dear Ms. Acheson:

We are in the process of preparing a construction work plan for the Navopache Electric Cooperative, Inc. of Lakeside, Arizona. This will be used as supporting engineering data for a loan application to the Rural Utilities Service (RUS) in Washington, D.C. A primary consideration of this procedure is to assure that the proposed construction projects do not adversely affect the quality of the environment. Therefore, we request that your staff review the planned construction projects outlined in the enclosed "Project List".

A considerable portion of the proposed construction is of a continuing nature involving line extensions to provide electrical service to new members. These extensions can be one or more spans of primary distribution line to reach the desired service location. Also included are system improvements that are required to increase capacity or reliability, improve voltage levels, or decrease losses.

We would appreciate your review of this information and your concurrence with the work plan proposed for the Cooperative. If there are specific practices which the Cooperative needs to implement, please let us know about them and any particular area involved.

The completed work plan is one of the many items required by RUS supporting documents for construction loan fund approval. A written response from your agency is required and we respectfully request your reply by February 4, 2000.

Please address your letter to:

Mr. Kent Rhoton, Manager of Engineering
Navopache Electric Cooperative, Inc.
P.O. Box 308
Lakeside, Arizona 85929
(1-800-543-6324)

1804-A Juan Tabo Blvd. NE, Albuquerque, NM 87112 • Office: (505) 292-3635 • Fax: 293-2230

We would appreciate your sending a copy of this reply to the engineer at the address on the letterhead.

Sincerely,

SGS WITTER, INC.

Michael L. Smith

Michael L. Smith, P.E.

enclosure

cc: Kent Rhoton, Navopache

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Safford District Office
711 14th Avenue
Safford, AZ 85546

(520) 348-4400

In reply refer to:

2850 (04227)

April 27, 2000

Mr. Kent Rhoton
Manager of Engineering
Navapache Electric Cooperative, Inc.
P. O. Box 308
Lakeside, Arizona 85929

Dear Mr. Rhoton:

This is response to your letter of December 20, 1999. We are sorry for the late response.

We reviewed the SWCA, Inc. Environmental Consultants Cultural Resources Survey and Biological Assessment of the Proposed 69 KV Powerline Right-of-Way between the Round Valley Switching Station and the Springerville Generating Station. Based on the review of the documents received, we have no special concerns and anticipate no cultural resource conflicts that could not be resolved through implementation of the standard compliance procedures.

There was question on the General Biological Assessment. Our biologist noted that there was no mention of the Little Colorado River Spinedace. We believe this species is found in the vicinity of the Little Colorado River where the powerline will cross. If there is a may affect determination, there would have to be Section 7 Consultation with the Fish and Wildlife Service. There was also a question as to possible affect to the Bald Eagle.

We are assuming that none of these lines identified for replacement or maintenance are located on Federal lands administered by the Bureau of Land Management. There were no maps attached that show the land status. If you have questions or require additional information, please let us know.

Sincerely,

/s/ Wayne King

Wayne King
Assistant Field Office Manager for
Resource Use and Protection

cc: Michael L. Smith, P.E.
SGS Witter, Inc.
Consulting Engineers and Planners
1804-A Juan Tabo Boulevard NE
Albuquerque, New Mexico 87112

SGS WITTER, INC.
CONSULTING ENGINEERS & PLANNERS

Offices located in Albuquerque, NM and Lubbock, TX

December 20, 1999

Mr. Sam Spiller
Ecological Services
U.S. Fish and Wildlife Service
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951

RE: Borrower's Environmental Report Navopache Electric Cooperative, Inc.

Dear Mr. Spiller:

We are in the process of preparing a construction work plan for the Navopache Electric Cooperative, Inc. of Lakeside, Arizona. The Cooperative provides electric power to consumers in the State of Arizona and to portions of Catron County, New Mexico. This will be used as supporting engineering data for a loan application to the Rural Utilities Service (RUS) in Washington, D.C. A primary consideration of this procedure is to assure that the proposed construction projects do not adversely affect the quality of the environment. Therefore, we request that your staff review the planned construction projects outlined in the enclosed "Project List".

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1804-A Juan Tabo Blvd. NE, Albuquerque, NM 87112 • Office: (505) 292-3635 • Fax: 293-2230

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Mr. Kent Rhoton, Manager of Engineering
Navopache Electric Cooperative, Inc.
P.O. Box 308
Lakeside, Arizona 85929
(1-800-543-6324)

We would appreciate your sending a copy of this reply to the engineer at the address on the letterhead.

Sincerely,

SGS WITTER, INC.

Michael L. Smith

Michael L. Smith, P.E.

enclosure

cc: Kent Rhoton, Navopache

United States Department of the Interior
U.S. Fish and Wildlife Service
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
(602)640-2720 FAX (602)640-2730

In Reply Refer To:
AESO/SE
2-21-00-I-108

January 14, 2000

Mr. Michael Smith, P.E.
SGS Witter, Inc.
1804-A Juan Tabo Boulevard, NE
Albuquerque, New Mexico 87112

RE: Borrower's Environmental Report Navopache Electric Cooperative, Inc.

Dear Mr. Smith:

This letter responds to your December 20, 1999, request for an inventory of threatened or endangered species, or those that are proposed to be listed as such under the Endangered Species Act of 1973, as amended (Act), which may potentially occur in your project area (Apache and Navajo Counties). The enclosed list may include candidate species as well. We hope the enclosed county list of species will be helpful. In future communications regarding this project, please refer to consultation number 2-21-00-I-108.

The enclosed list of the endangered, threatened, proposed, and candidate species includes all those potentially occurring anywhere in the county, or counties, where your project occurs. Please note that your project area may not necessarily include all or any of these species. The information provided includes general descriptions, habitat requirements, and other information for each species on the list. Also on the enclosed list is the Code of Federal Regulations (CFR) citation for each list and is available at most public libraries. This information should assist you in determining which species may or may not occur within your project area. Site-specific surveys could also be helpful and may be needed to verify the presence or absence of a species or its habitat as required for the evaluation of proposed project-related impacts.

Endangered and threatened species are protected by Federal law and must be considered prior to project development. If the action agency determines that listed species or critical habitat may be adversely affected by a federally funded, permitted, or authorized activity, the action agency must request formal consultation with the Service. If the action agency determines that the planned action may jeopardize a proposed species or destroy or adversely modify proposed critical habitat, the action agency must enter into a section 7 conference with the Service. Candidate species are those which are being considered for addition to the list of threatened or endangered species. Candidate species are those for which there is sufficient information to support a proposal for listing. Although candidate species have no legal protection under the Act, we

recommend that they be considered in the planning process in the event that they become listed or proposed for listing prior to project completion.

If any proposed action occurs in or near areas with trees and shrubs growing along watercourses, known as riparian habitat, the Service recommends the protection of these areas. Riparian areas are critical to biological community diversity and provide linear corridors important to migratory species. In addition, if the project will result in the deposition of dredged or fill materials into waterways or excavation in waterways, we recommend you contact the Army Corps of Engineers which regulates these activities under Section 404 of the Clean Water Act.

The State of Arizona protects some plant and animal species not protected by Federal law. We recommend you contact the Arizona Game and Fish Department and the Arizona Department of Agriculture for State-listed or sensitive species in your project area.

The Service appreciates your efforts to identify and avoid impacts to listed and sensitive species in your project area. If we may be of further assistance, please feel free to contact Tom Gatz.

Sincerely,

Jacqueline Hanson

for David L. Harlow
Field Supervisor

Enclosures

cc: John Kennedy, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ

SGS WITTER, INC.
CONSULTING ENGINEERS & PLANNERS

Offices located in Albuquerque, NM and Lubbock, TX

December 20, 1999

Mr. Rosendo Trevino III
State Conservationist
U.S. Department of Agriculture
Soil Conservation Service
6200 Jefferson NE
Albuquerque, New Mexico 87109

RE: Borrower's Environmental Report Navopache Electric Cooperative, Inc.

Dear Mr. Trevino:

We are in the process of preparing a construction work plan for the Navopache Electric Cooperative, Inc. of Lakeside, Arizona. This will be used as supporting engineering data for a loan application to the Rural Utilities Service (RUS) in Washington, D.C. A primary consideration of this procedure is to assure that the proposed construction projects do not adversely affect the quality of the environment. Therefore, we request that your staff review the planned construction projects outlined in the enclosed "Project List".

A considerable portion of the proposed construction is of a continuing nature involving line extensions to provide electrical service to new members. These extensions can be one or more spans of primary distribution line to reach the desired service location. Also included are system improvements that are required to increase capacity or reliability, improve voltage levels, or decrease losses.

We would appreciate your review of this information and your concurrence with the work plan proposed for the Cooperative. If there are specific practices which the Cooperative needs to implement, please let us know about them and any particular area involved.

The completed work plan is one of the many items required by RUS supporting documents for construction loan fund approval. A written response from your agency is required and we respectfully request your reply by February 4, 2000.

Please address your letter to:

Mr. Kent Rhoton, Manager of Engineering
Navopache Electric Cooperative, Inc.
P.O. Box 308
Lakeside, Arizona 85929
(1-800-543-6324)

1804-A Juan Tabo Blvd. NE, Albuquerque, NM 87112 • Office: (505) 292-3635 • Fax: 293-2230

We would appreciate your sending a copy of this reply to the engineer at the address on the letterhead.

Sincerely,

SGS WITTER, INC.

Michael L. Smith

Michael L. Smith, P.E.

enclosure

cc: Kent Rhoton, Navopache

USDA NRCS
Natural Resources Conservation Service
Conservation Service
Phone: (505) 761-4400
Fax: (505) 761-4462

January 25, 2000

Mr. Kent Rhoton
Manger of engineering
Navopache Electric Cooperative, Inc.
PO Box 308
Lakeside, AZ 85929

Dear Mr. Rhoton:

The Borrower's Environmental Report Navopache Electric Cooperative, Inc. refers to the State of Arizona and comes under the jurisdiction of NRCS in Arizona. The address is as follows:

Michael Somerville
State Conservationist
USDA-NRCS
3003 N. Central Ave., Ste. 800
Phoenix, AZ. 85012

I am forwarding your request to Arizona for their review.

Sincerely,

ROSENDO TREVINO III
State Conservationist

cc:
Michael Somerville, State Conservationist, NRCS, Phoenix, AZ

SGS WITTER, INC.
CONSULTING ENGINEERS & PLANNERS

Offices located in Albuquerque, NM and Lubbock, TX

December 20, 1999

See 2nd page

Mr. Jerry Marracchini, Director
State of New Mexico
Department of Game & Fish
Villagra Building
P.O. Box 25112
Santa Fe, New Mexico 87504

RE: Borrower's Environmental Report Navopache Electric Cooperative, Inc.

Dear Mr. Marracchini:

We are in the process of preparing a construction work plan for the Navopache Electric Cooperative, Inc. of Lakeside, Arizona. This will be used as supporting engineering data for a loan application to the Rural Utilities Service (RUS) in Washington, D.C. A primary consideration of this procedure is to assure that the proposed construction projects do not adversely affect the quality of the environment. Therefore, we request that your staff review the planned construction projects outlined in the enclosed "Project List.

A considerable portion of the proposed construction is of a continuing nature involving line extensions to provide electrical service to new members. These extensions can be one or more spans of primary distribution line to reach the desired service location. Also included are system improvements that are required to increase capacity or reliability, improve voltage levels, or decrease losses.

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The completed work plan is one of the many items required by RUS supporting documents for construction loan fund approval. A written response from your agency is required and we respectfully request your reply by February 4, 2000.

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1804-A Juan Tabo Blvd. NE, Albuquerque, NM 87112 • Office: (505) 292-3635 • Fax: 293-2230

We would appreciate your sending a copy of this reply to the engineer at the address on the letterhead.

Sincerely,

SGS WITTER, INC.

Michael L. Smith

Michael L. Smith, P.E.

enclosure

cc: Kent Rhoton, Navopache

Mark Watson
Habitat Specialist
Conservation Services Div.
N.M.G.F.
Santa Fe

FAX # 827-7801

Mike –
I told Mr. Watson we would write a "letter to the file" saying he has no comment at this time but wants to be notified if any N.M. projects become eminent – expressed concern about raptor proofing

L

fax copy to him

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: APACHE

12/15/1999

1) LISTED

TOTAL= 11

NAME: NAVAJO SEDGE *CAREX SPECUICOLA*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 50 CFR 19373, 5-8-85

DESCRIPTION: PERENNIAL FORB WITH TRIANGULAR STEMS, ELONGATED RHIZOMES. FLOWER: WHITE JUNE AND JULY

ELEVATION RANGE: 5700-6000 FT.

COUNTIES: COCONINO, NAVAJO, APACHE

HABITAT: SILTY SOILS AT SHADY SEEPS AND SPRINGS

DESIGNATED CRITICAL HABITAT IS ON THE NAVAJO NATION NEAR INSCRIPTION HOUSE RUINS. FOUND AT SEEP SPRINGS ON VERTICAL CLIFFS OF PINK-RED NAVAJO SANDSTONE.

NAME: **BLACK-FOOTED FERRET** *MUSTELA NIGRIPES*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-67

DESCRIPTION: WEASEL-LIKE, YELLOW BUFF COLORATION WITH BLACK FEET, TAIL TIP, AND EYE MASK. IT HAS A BLUNT LIGHT COLORED NOSE AND IS 15-18 INCHES LONG AND TAIL LENGTH IS 5-6 INCHES.

ELEVATION RANGE: <10,500 FT.

COUNTIES: COCONINO, APACHE, NAVAJO

HABITAT: GRASSLAND PLAINS GENERALLY FOUND IN ASSOCIATION WITH PRAIRIE DOGS

UNSURVEYED PRARIE DOG TOWNS MAY BE OCCUPIED BY FERRETS OR MAY BE APPROPRIATE FOR FUTURE REINTRODUCTION EFFORTS. THE SERVICE DEVELOPED GUIDELINES FOR SURVEYING PRAIRIE DOG TOWNS WHICH ARE AVAILABLE UPON REQUEST. NO POPULATIONS OF THIS SPECIES CURRENTLY KNOWN TO EXIST IN ARIZONA.

NAME: **MEXICAN GRAY WOLF** *CANIS LUPUS BAILEYI*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-67; 43 FR 1912, 03-09-78

DESCRIPTION: LARGE DOG-LIKE CARNIVORE WITH VARYING COLOR, BUT USUALLY A SHADE OF GRAY. DISTINCT WHITE LIP LINE AROUND MOUTH. WEIGH 60-90 POUNDS.

ELEVATION RANGE: 4,000-12,00IFT.

COUNTIES: APACHE, COCHISE, GREENLEE, PIMA, SANTA CRUZ

HABITAT: CHAPPARAL, WOODLAND, AND FORESTED AREAS. MAY CROSS DESERT AREAS.

HISTORIC RANGE IS CONSIDERED TO BE LARGER THAN THE COUNTIES LISTED ABOVE. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE (COCHISE, PIMA, SANTA CRUZ) CONTINUE TO BE RECEIVED. INDIVIDUALS MAY STILL PERSIST IN MEXICO. EXPERIMENTAL NONESSENTIAL POPULATION INTRODUCED IN THE BLUE PRIMITIVE AREA OF GREENLEE AND APACHE COUNTIES.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: APACHE

12/15/1999

NAME: **APACHE (ARIZONA) TROUT** *ONCORHYNCHUS APACHE*

STATUS: THREATENED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 40 FR 29864, 07-19-1975

DESCRIPTION: THIS YELLOWISH OR YELLOW-OLIVE CUTTHROAT-LIKE TROUT HAS LARGE DARK SPOTS ON BODY. ITS DORSAL, ANAL, AND CAUDAL FINS EDGED WITH WHITE. IT HAS NO RED LATERAL BAND.

ELEVATION RANGE: >5000 FT.

COUNTIES: APACHE, GREENLEE, GILA, GRAHAM, NAVAJO

HABITAT: PRESENTLY RESTRICTED TO COLD MOUNTAIN STREAMS WITH MANY LOW GRADIENT MEADOW REACHES

OCCUPIES STREAM HABITATS WITH SUBSTRATES OF BOULDERS, ROCKS, AND GRAVEL WITH SOME SAND OR SILT THROUGH MIXED CONIFER AND SPRUCE-FIR FORESTS, AND MONTANE MEADOWS AND GRASSLANDS IN THE WHITE MOUNTAINS. ALSO MANAGED AS A SPORT FISH UNDER SPECIAL REGULATIONS.

NAME: **LITTLE COLORADO SPINEDACE** *LEPIDOMEDA VITTATA*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 52 FR 35054

DESCRIPTION: SMALL (<4 INCHES LONG) SILVERY MINNOW WHICH IS DARKER ON THE BACK THAN THE BELLY

ELEVATION RANGE: 4000-8000 FT.

COUNTIES: COCONINO, APACHE, NAVAJO

HABITAT: MODERATE TO SMALL STREAMS IN POOLS AND RIFFLES WITH WATER FLOWING OVER GRAVEL AND SILT

CRITICAL HABITAT INCLUDES EIGHTEEN MILES OF EAST CLEAR CREEK, EIGHT MILES OF CHEVELON CREEK, AND FIVE MILES OF NUTRIOSO CREEK

NAME: **LOACH MINNOW** *TIAROGA COBITIS*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 51 FR 39468, 10-28-1986; 59 FR 10898, 03-08-1994

DESCRIPTION: SMALL (<3 INCHES LONG) SLENDER, ELONGATED FISH, OLIVE COLORED WITH DIRTY WHITE SPOTS AT THE BASE OF THE DORSAL AND CAUDAL FINS. BREEDING MALES VIVID RED ON MOUTH AND BASE OF FINS

ELEVATION RANGE: <8000 FT.

COUNTIES: PINAL, GRAHAM, GREENLEE, GILA, APACHE, NAVAJO, (AZ); GRANT, CATRON, HILDAGO (NM)

HABITAT: BENTHIC SPECIES OF SMALL TO LARGE PERENNIAL STREAMS WITH SWIFT SHALLOW WATER OVER COBBLE& GRAVEL

PRESENTLY FOUND IN ARAVAIPA CREEK, BLUE RIVER, CAMPBELL BLUE CREEK, SAN FRANCISCO RIVER, DRY BLUE CREEK, TULAROSA RIVER, EAST-WEST-AND MIDDLE FORKS OF THE GILA RIVER, EAGLE CREEK, EAST FORK, BLACK RIVER, AND THE MAINSTEM UPPER GILA RIVER. CRTITICAL HABITAT WAS REMOVED IN MARCH 1998; BUT RE-PROPOSED DEC 1999 IN APACHE, COCHISE, GILA, GRAHAM, GREENLEE, PIMA, PINAL, AND YAVAPAI COUNTIES. ALSO CATRON, GRANT, AND HIDALGO COUNTIES IN NEW MEXICO.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: APACHE

12/15/1999

NAME: SPIKEDACE *MEDA FULGIDA*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 51 FR 23769,07-01-1986; 59 FR 10906, 03-08-1994

DESCRIPTION: SMALL (<3 INCHES) SLIM WITH SLIVERY SIDES & 'SPINE" ON DORSAL FIN. BREDING MALES BRASSY GOLDEN COLOR

ELEVATION RANGE: <6000 FT.

COUNTIES: GRAHAM, PINAL, GREENLEE, YAVAPAI, APACHE*, COCHISE*, GILA*, NAVAJO*, PIMA* (AZ); GRANT, CATRON, HIDALGO (NM)

HABITAT: MODERATE TO LARGE PERENNIAL STREAMS WITH GRAVEL COBBLE SUBSTRATES AND MODERATE TO SWIFT VELOCITIES

PRESENTLY FOUND IN ARAVAIPA CREEK, EAGLE CREEK, VERDE RIVER, EAST-WEST- MAIN AND MIDDLE FORKS OF THE GILA RIVER IN NEW MEXICO, AND GILA RIVER FROM SAN PEDRO RIVER TO ASHURST HAYDEN DAM. CRITICAL HABITAT WAS REMOVED IN MARCH 1998, BUT RE-PROPOSED DEC 1999 FOR APACHE, COCHISE, GILA, GRAHAM, GREENLEE, NAVAJO, PIMA, PINAL, AND YAVAPAI COUNTIES. ALSO CATRON, GRANT, AND HIDALGO COUNTIES IN NEW MEXICO. *COUNTIES WITH PROPOSED CRITICAL HABITAT BUT NO RECENT DOCUMENTATION OF SPECIES PRESENT

NAME: **BALD EAGLE** *HALIAEETUS LEUCOCEPHALUS*

STATUS: THREATENED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 60 FR 35999, 07-12-95

DESCRIPTION: LARGE, ADULTS HAVE WHITE HEAD AND TAIL. HEIGHT 28 - 38"; WINGSPAN 66 - 96". 1-4 YRS DARK WITH VARYING DEGREES OF MOTTLED BROWN PLUMAGE. FEET BARE OF FEATHERS.

ELEVATION RANGE: VARIES FT.

COUNTIES: YUMA, LA PAZ, MOHAVE, YAVAPAI, MARICOPA, PINAL, COCONINO, NAVAJO, APACHE, SANTA CRUZ, PIMA, GILA, GRAHAM, COCHISE

HABITAT: LARGE TREES OR CLIFFS NEAR WATER (RESERVOIRS, RIVERS AND STREAMS) WITH ABUNDANT PREY

SOME BIRDS ARE NESTING RESIDENTS WHILE A LARGER NUMBER WINTERS ALONG RIVERS AND RESERVOIRS. AN ESTIMATED 200 TO 300 BIRDS WINTER IN ARIZONA. ONCE ENDANGERED (32 FR 4001, 03-11-1967; 43 FR 6233, 02-14-78) BECAUSE OF REPRODUCTIVE FAILURES FROM PESTICIDE POISONING AND LOSS OF HABITAT, THIS SPECIES WAS DOWN LISTED TO THREATENED ON AUGUST 11, 1995. ILLEGAL SHOOTING, DISTURBANCE, LOSS OF HABITAT CONTINUES TO BE A PROBLEM. SPECIES HAS BEEN PROPOSED FOR DELISTING (64 FR 36454) BUT STILL RECEIVES FULL PROTECTION UNDER ESA.

NAME: **CALIFORNIA CONDOR** *GYMNOPS CALIFORNIANUS*

STATUS: EXPERIMENTAL/NONESSENTIAL CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001; 03-11-67

DESCRIPTION: VERY LARGE VULTURE (47 IN., WINGSPAN TO 9 1/2 FT, WEIGHT TO 22 LBS); ADULT PLUMAGE BLACKISH, IMMATURE MORE BROWNISH; ADULT WING LININGS WHITE, IMMATURE MOTTLED; HEAD & UPPER PARTS OF NECK BARE; YELLOW-ORANGE IN ADULTS, GRAYISH IN IMMATURE.

ELEVATION RANGE: VARIES FT.

COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE

HABITAT: HIGH DESERT CANYONLANDS AND PLATEAUS

LAST WILD CONDOR REPORTED IN ARIZONA IN 1924. RECOVERY PROGRAM HAS REINTRODUCED CONDORS TO NORTHERN ARIZONA, WITH THE FIRST RELEASE (6 BIRDS) IN DECEMBER 1996. RELEASE SITE LOCATED AT THE VERMILLION CLIFFS (COCONINO CO), WITH AN EXPERIMENTAL/NONESSENTIAL AREA DESIGNATED FOR MOST OF NORTHERN ARIZONA AND SOUTHERN UTAH.

NAME: **MEXICAN SPOTTED OWL** *STRIX OCCIDENTALIS LUCIDA*

STATUS: THREATENED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 56 FR 14678, 04-11-91

DESCRIPTION: MEDIUM SIZED WITH DARK EYES AND NO EAR TUFTS. BROWNISH AND HEAVILY SPOTTED WITH WHITE OR BEIGE.

ELEVATION RANGE: 4100-9000 FT.

COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE, YAVAPAI, GRAHAM, GREENLEE, COCHISE, SANTA CRUZ, PIMA, PINAL, GILA, MARICOPA

HABITAT: NESTS IN CANYONS AND DENSE FORESTS WITH MULTI-LAYERED FOLIAGE STRUCTURE

GENERALLY NESTS IN OLDER FORESTS OF MIXED CONIFER OR PONDERSA PINE/GAMBEL OAK TYPE, IN CANYONS, AND USE VARIETY OF HABITATS FOR FORAGING. SITES WITH COOL MICROCLIMATES APPEAR TO BE OF IMPORTANCE OR ARE PREFERED.

NAME: **SOUTHWESTERN WILLOW FLYCATCHER** *EMPIDONAX TRAILLII EXTIMUS*

STATUS: ENDANGERED CRITICAL HAB Yes RECOVERY PLAN: No CFR: 60 FR 10694, 02-27-95

DESCRIPTION: SMALL PASSERINE (ABOUT 6") GRAYISH-GREEN BACK AND WINGS, WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH BELLY. TWO WINGBARS VISIBLE. EYE-RING FAINT OR ABSENT.

ELEVATION RANGE: <8500 FT.

COUNTIES: YAVAPAI, GILA, MARICOPA, MOHAVE, COCONINO, NAVAJO, APACHE, PINAL, LA PAZ, GREENLEE, GRAHAM, YUMA, PIMA, COCHISE, SANTA CRUZ

HABITAT: COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS. CRITICAL HABITAT ON PORTIONS OF THE 100-YEAR FLOODPLAIN ON SAN PEDRO AND VERDE RIVERS; WET BEAVER AND WEST CLEAR CREEKS, INCLUDING TAVASCI MARSH AND ISTER FLAT; THE COLORADO RIVER, THE LITTLE COLORADO RIVER, AND THE WEST, EAST, AND SOUTH FORKS OF THE LITTLE COLORADO RIVER, REFERENCE 60 CFR:62 FR 39129, 7/22/97.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: APACHE

12/15/1999

2) PROPOSED TOTAL= 1

NAME: **MOUNTAIN PLOVER** *CHARADRIUS MONTANUS*

STATUS: PROPOSED THREATENED CRITICAL HAB No RECOVERY PLAN: No CFR: 64 FR 7587; 02-16-1999

DESCRIPTION: WADING BIRD; COMPACTLY BUILT; IN BREEDING SEASON WITH WHITE FOREHEAD AND LINE OVER THE EYE; CONTRASTING WITH DARK CROWN; NONDESCRIPT IN WINTER. VOICE IS LOW, VARIABLE WHISTLE.

ELEVATION RANGE: VARIABLE FT.

COUNTIES: YUMA, PIMA, COCHISE, PINAL, APACHE

HABITAT: OPEN ARID PLAINS, SHORT-GRASS PRAIRIES, AND SCATTERED CACTUS.

AZ PROVIDES WINTERING HABITAT ONLY. SPECIES PRIMARILY FOUND IN ROCKY MOUNTAIN STATES FROM CANADA TO MEXICO; SERVICE ACCEPTING COMMENTS ON PROPOSED RULE UNTIL APRIL 19, 1999; R6 HAS LEAD

3) CANDIDATE

TOTAL= 1

NAME: **CHIRICAHUA LEOPARD FROG** *RANA CHIRICAHUENSIS*

STATUS: CANDIDATE CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: CREAM COLORED TUBERCULES (spots) ON A DARK BACKGROUND ON THE REAR OF THE THIGH, DORSOLATERAL FOLDS THAT ARE INTERRUPTED AND DEFLECTED MEDIALLY, AND A CALL GIVEN OUT OF WATER DISTINGUISH THIS SPOTTED FROG FROM OTHER LEOPRD

ELEVATION RANGE: 3000-8300 FT.

COUNTIES: SANTA CRUZ, APACHE, GILA, PIMA, COCHISE, GREENLEE, GRAHAM, YAVAPAI, COCONINO, NAVAJO

HABITAT: STREAMS, RIVERS, BACKWATERS, PONDS, AND STOCK TANKS THAT ARE FREE FROM INTRODUCED FISH AND BULLFROGS

REQUIRE PERMANENT OR NEARLY PERMANENT WATER SOURCES. POPULATIONS NORTH OF THE GILA RIVER ARE THOUGHT TO BE CLOSELY-RELATED, BUT DISTINCT, UNDESCRIBED SPECIES. SPECIES ALSO FOUND ON FORT HUACHUCA

CONSERVATION AGREEMENT TOTAL= 2

NAME: **ARIZONA WILLOW** *SALIX ARIZONICA*

STATUS: NONE CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: SCRAGGLY OR ROUNDED SHRUB, PROSTRATE MAT OR SINGLE STEM, AND LARGE HEDGE OR THICKET PLANT; MAY BE 10 FEET HIGH, USUALLY 2 - 4 FEET; BRANCHES YELLOW-GREEN, RED-BROWN, OR BRONISH; PREVIOUS YEARS GROWTH BRIGHT RED

ELEVATION RANGE: > 8,500 FT FT.

COUNTIES: APACHE

HABITAT: UNSHADED OR PARTIALLY SHADED WET MEADOWS, STREAMSIDES, CIENEGAS; IN OR ADJACENT TO WATER, SOME DRY

CONSERVATION AGREEMENT BETWEEN SERVICE, FOREST SERVICE, AND NATIONAL PARK SERVICE FINALIZED IN APRIL 1995

NAME: **GOODDINGS ONION** *ALLIUM GOODDINGII*

STATUS: NONE CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: HERBACEOUS PERRNIAL PLANT; BROAD, FLAT, RATHER BLUNT LEAVES; FLOWERING STALK 14-17 INCHES TALL, FLATTENED, AND NARROWLY WINGED TOWARD APEX; FRUIT IS BROADER THAN LONG; SEEDS ARE SHORT AND THICK

ELEVATION RANGE: > 7,500 FT FT.

COUNTIES: APACHE, GREENLEE, PIMA

HABITAT: FORESTED DRAINAGE BOTTOMS AND ON MOIST NORTH FACING SLOPES OF MIXED CONIFER AND SPRUCE FIR FORESTS

CONSERVATION AGREEMENT BETWEEN THE SERVICE AND THE FOREST SERVICE FINALIZED IN 1997. IN NEW MEXICO ON THE LINCOLN AND GILA NATIONAL FORESTS

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: NAVAJO

12/15/1999

1) LISTED

TOTAL= 11

NAME: **NAVAJO SEDGE** *CAREX SPECUICOLA*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 50 CFR 19373, 5-8-85

DESCRIPTION: PERENNIAL FORB WITH TRIANGULAR STEMS, ELONGATED RHIZOMES. FLOWER: WHITE JUNE AND JULY

ELEVATION RANGE: 5700-6000 FT.

COUNTIES: COCONINO, NAVAJO, APACHE

HABITAT: SILTY SOILS AT SHADY SEEPS AND SPRINGS

DESIGNATED CRITICAL HABITAT IS ON THE NAVAJO NATION NEAR INSCRIPTION HOUSE RUINS. FOUND AT SEEP SPRINGS ON VERTICAL CLIFFS OF PINK-RED NAVAJO SANDSTONE.

NAME: **PEEBLES NAVAJO CACTUS** *PEDIOCACTUS PEEBLESIANUS VAR PEEBLESIANUS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 44 FR 61922, 10-26-1979

DESCRIPTION: VERY SMALL GLOBOSE 1 INCH TALL AND ABOUT 0.75 INCH IN DIAMETER. THE 4 (3-5) RADIAL SPINES ARE ARRANGED IN A TWISTED CROSS AND CENTRAL SPINES ARE ABSENT. FLOWERS YELLOW-GREEN 1 INCH DIAMETER SPRING.

ELEVATION RANGE: 5400-5600 FT.

COUNTIES: NAVAJO

HABITAT: GRAVELY SOILS OF THE SHINARUMP CONGLOMERATE OF THE CHINLE FORMATION

EXTREMELY LIMITED GEOGRAPHIC RANGE. DIFFICULT TO GROW IN CULTIVATION.

NAME: **BLACK-FOOTED FERRET** *MUSTELA NIGRIPES*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-67

DESCRIPTION: WEASEL-LIKE, YELLOW BUFF COLORATION WITH BLACK FEET, TAIL TIP, AND EYE MASK. IT HAS A BLUNT LIGHT COLORED NOSE AND IS 15-18 INCHES LONG AND TAIL LENGTH IS 5-6 INCHES.

ELEVATION RANGE: <10,500 FT.

COUNTIES: COCONINO, APACHE, NAVAJO

HABITAT: GRASSLAND PLAINS GENERALLY FOUND IN ASSOCIATION WITH PRAIRIE DOGS

UNSURVEYED PRARIE DOG TOWNS MAY BE OCCUPIED BY FERRETS OR MAY BE APPROPRIATE FOR FUTURE REINTRODUCTION EFFORTS. THE SERVICE DEVELOPED GUIDELINES FOR SURVEYING PRAIRIE DOG TOWNS WHICH ARE AVAILABLE UPON REQUEST. NO POPULATIONS OF THIS SPECIES CURRENTLY KNOWN TO EXIST IN ARIZONA.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: NAVAJO

12/15/1999

NAME: **APACHE (ARIZONA) TROUT** *ONCORHYNCHUS APACHE*

STATUS: THREATENED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 40 FR 29864, 07-19-1975

DESCRIPTION: THIS YELLOWISH OR YELLOW-OLIVE CUTTHROAT-LIKE TROUT HAS LARGE DARK SPOTS ON BODY. ITS DORSAL, ANAL, AND CAUDAL FINS EDGED WITH WHITE. IT HAS NO RED LATERAL BAND.

ELEVATION RANGE: >5000 FT.

COUNTIES: APACHE, GREENLEE, GILA, GRAHAM, NAVAJO

HABITAT: PRESENTLY RESTRICTED TO COLD MOUNTAIN STREAMS WITH MANY LOW GRADIENT MEADOW REACHES

OCCUPIES STREAM HABITATS WITH SUBSTRATES OF BOULDERS, ROCKS, AND GRAVEL WITH SOME SAND OR SILT THROUGH MIXED CONIFER AND SPRUCE-FIR FORESTS, AND MONTANE MEADOWS AND GRASSLANDS IN THE WHITE MOUNTAINS. ALSO MANAGED AS A SPORT FISH UNDER SPECIAL REGULATIONS.

NAME: **LITTLE COLORADO SPINEDACE** *LEPIDOMEDA VITTATA*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 52 FR 35054

DESCRIPTION: SMALL (<4 INCHES LONG) SILVERY MINNOW WHICH IS DARKER ON THE BACK THAN THE BELLY

ELEVATION RANGE: 4000-8000 FT.

COUNTIES: COCONINO, APACHE, NAVAJO

HABITAT: MODERATE TO SMALL STREAMS IN POOLS AND RIFFLES WITH WATER FLOWING OVER GRAVEL AND SILT

CRITICAL HABITAT INCLUDES EIGHTEEN MILES OF EAST CLEAR CREEK, EIGHT MILES OF CHEVELON CREEK, AND FIVE MILES OF NUTRIOSO CREEK

NAME: **LOACH MINNOW** *TIAROGA COBITIS*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 51 FR 39468, 10-28-1986; 59 FR 10898, 03-08-1994

DESCRIPTION: SMALL (<3 INCHES LONG) SLENDER, ELONGATED FISH, OLIVE COLORED WITH DIRTY WHITE SPOTS AT THE BASE OF THE DORSAL AND CAUDAL FINS. BREEDING MALES VIVID RED ON MOUTH AND BASE OF FINS

ELEVATION RANGE: <8000 FT.

COUNTIES: PINAL, GRAHAM, GREENLEE, GILA, APACHE, NAVAJO, (AZ); GRANT, CATRON, HILDAGO (NM)

HABITAT: BENTHIC SPECIES OF SMALL TO LARGE PERENNIAL STREAMS WITH SWIFT SHALLOW WATER OVER COBBLE& GRAVEL

PRESENTLY FOUND IN ARAVAIPA CREEK, BLUE RIVER, CAMPBELL BLUE CREEK, SAN FRANCISCO RIVER, DRY BLUE CREEK, TULAROSA RIVER, EAST-WEST-AND MIDDLE FORKS OF THE GILA RIVER, EAGLE CREEK, EAST FORK, BLACK RIVER, AND THE MAINSTEM UPPER GILA RIVER. CRTITICAL HABITAT WAS REMOVED IN MARCH 1998; BUT RE-PROPOSED DEC 1999 IN APACHE, COCHISE, GILA, GRAHAM, GREENLEE, PIMA, PINAL, AND YAVAPAI COUNTIES. ALSO CATRON, GRANT, AND HIDALGO COUNTIES IN NEW MEXICO.

NAME: **SPIKEDACE** *MEDA FULGIDA*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 51 FR 23769,07-01-1986; 59 FR 10906, 03-08-1994

DESCRIPTION: SMALL (<3 INCHES) SLIM WITH SLIVERY SIDES & 'SPINE" ON DORSAL FIN. BREDING MALES BRASSY GOLDEN COLOR

ELEVATION RANGE: <6000 FT.

COUNTIES: GRAHAM, PINAL, GREENLEE, YAVAPAI, APACHE*, COCHISE*, GILA*, NAVAJO*, PIMA* (AZ); GRANT, CATRON, HIDALGO (NM)

HABITAT: MODERATE TO LARGE PERENNIAL STREAMS WITH GRAVEL COBBLE SUBSTRATES AND MODERATE TO SWIFT VELOCITIES

PRESENTLY FOUND IN ARAVAIPA CREEK, EAGLE CREEK, VERDE RIVER, EAST-WEST- MAIN AND MIDDLE FORKS OF THE GILA RIVER IN NEW MEXICO, AND GILA RIVER FROM SAN PEDRO RIVER TO ASHURST HAYDEN DAM. CRITICAL HABITAT WAS REMOVED IN MARCH 1998, BUT RE-PROPOSED DEC 1999 FOR APACHE, COCHISE, GILA, GRAHAM, GREENLEE, NAVAJO, PIMA, PINAL, AND YAVAPAI COUNTIES. ALSO CATRON, GRANT, AND HIDALGO COUNTIES IN NEW MEXICO. *COUNTIES WITH PROPOSED CRITICAL HABITAT BUT NO RECENT DOCUMENTATION OF SPECIES PRESENT

NAME: **BALD EAGLE** *HALIAEETUS LEUCOCEPHALUS*

STATUS: THREATENED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 60 FR 35999, 07-12-95

DESCRIPTION: LARGE, ADULTS HAVE WHITE HEAD AND TAIL. HEIGHT 28 - 38"; WINGSPAN 66 - 96". 1-4 YRS DARK WITH VARYING DEGREES OF MOTTLED BROWN PLUMAGE. FEET BARE OF FEATHERS.

ELEVATION RANGE: VARIES FT.

COUNTIES: YUMA, LA PAZ, MOHAVE, YAVAPAI, MARICOPA, PINAL, COCONINO, NAVAJO, APACHE, SANTA CRUZ, PIMA, GILA, GRAHAM, COCHISE

HABITAT: LARGE TREES OR CLIFFS NEAR WATER (RESERVOIRS, RIVERS AND STREAMS) WITH ABUNDANT PREY

SOME BIRDS ARE NESTING RESIDENTS WHILE A LARGER NUMBER WINTERS ALONG RIVERS AND RESERVOIRS. AN ESTIMATED 200 TO 300 BIRDS WINTER IN ARIZONA. ONCE ENDANGERED (32 FR 4001, 03-11-1967; 43 FR 6233, 02-14-78) BECAUSE OF REPRODUCTIVE FAILURES FROM PESTICIDE POISONING AND LOSS OF HABITAT, THIS SPECIES WAS DOWN LISTED TO THREATENED ON AUGUST 11, 1995. ILLEGAL SHOOTING, DISTURBANCE, LOSS OF HABITAT CONTINUES TO BE A PROBLEM. SPECIES HAS BEEN PROPOSED FOR DELISTING (64 FR 36454) BUT STILL RECEIVES FULL PROTECTION UNDER ESA.

NAME: **CALIFORNIA CONDOR** *GYMNOPS CALIFORNIANUS*

STATUS: EXPERIMENTAL/NONESSENTIAL CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001; 03-11-67

DESCRIPTION: VERY LARGE VULTURE (47 IN., WINGSPAN TO 9 1/2 FT, WEIGHT TO 22 LBS); ADULT PLUMAGE BLACKISH, IMMATURE MORE BROWNISH; ADULT WING LININGS WHITE, IMMATURE MOTTLED; HEAD & UPPER PARTS OF NECK BARE; YELLOW-ORANGE IN ADULTS, GRAYISH IN IMMATURE.

ELEVATION RANGE: VARIES FT.

COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE

HABITAT: HIGH DESERT CANYONLANDS AND PLATEAUS

LAST WILD CONDOR REPORTED IN ARIZONA IN 1924. RECOVERY PROGRAM HAS REINTRODUCED CONDORS TO NORTHERN ARIZONA, WITH THE FIRST RELEASE (6 BIRDS) IN DECEMBER 1996. RELEASE SITE LOCATED AT THE VERMILLION CLIFFS (COCONINO CO.), WITH AN EXPERIMENTAL/NONESSENTIAL AREA DESIGNATED FOR MOST OF NORTHERN ARIZONA AND SOUTHERN UTAH.

NAME: **MEXICAN SPOTTED OWL** *STRIX OCCIDENTALIS LUCIDA*

STATUS: THREATENED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 56 FR 14678, 04-11-91

DESCRIPTION: MEDIUM SIZED WITH DARK EYES AND NO EAR TUFTS. BROWNISH AND HEAVILY SPOTTED WITH WHITE OR BEIGE.

ELEVATION RANGE: 4100-9000 FT.

COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE, YAVAPAI, GRAHAM, GREENLEE, COCHISE, SANTA CRUZ, PIMA, PINAL, GILA, MARICOPA

HABITAT: NESTS IN CANYONS AND DENSE FORESTS WITH MULTI-LAYERED FOLIAGE STRUCTURE

GENERALLY NESTS IN OLDER FORESTS OF MIXED CONIFER OR PONDERSA PINE/GAMBEL OAK TYPE, IN CANYONS, AND USE VARIETY OF HABITATS FOR FORAGING. SITES WITH COOL MICROCLIMATES APPEAR TO BE OF IMPORTANCE OR ARE PREFERED.

NAME: **SOUTHWESTERN WILLOW FLYCATCHER** *EMPIDONAX TRAILLII EXTIMUS*

STATUS: ENDANGERED CRITICAL HAB Yes RECOVERY PLAN: No CFR: 60 FR 10694, 02-27-95

DESCRIPTION: SMALL PASSERINE (ABOUT 6") GRAYISH-GREEN BACK AND WINGS, WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH BELLY. TWO WINGBARS VISIBLE. EYE-RING FAINT OR ABSENT.

ELEVATION RANGE: <8500 FT.

COUNTIES: YAVAPAI, GILA, MARICOPA, MOHAVE, COCONINO, NAVAJO, APACHE, PINAL, LA PAZ, GREENLEE, GRAHAM, YUMA, PIMA, COCHISE, SANTA CRUZ

HABITAT: COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS. CRITICAL HABITAT ON PORTIONS OF THE 100-YEAR FLOODPLAIN ON SAN PEDRO AND VERDE RIVERS; WET BEAVER AND WEST CLEAR CREEKS, INCLUDING TAVASCI MARSH AND ISTER FLAT; THE COLORADO RIVER, THE LITTLE COLORADO RIVER, AND THE WEST, EAST, AND SOUTH FORKS OF THE LITTLE COLORADO RIVER, REFERENCE 60 CFR:62 FR 39129, 7/22/97.

3) CANDIDATE TOTAL= 1

NAME: **CHIRICAHUA LEOPARD FROG** *RANA CHIRICAHUENSIS*

STATUS: CANDIDATE CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: CREAM COLORED TUBERCULES (spots) ON A DARK BACKGROUND ON THE REAR OF THE THIGH, DORSOLATERAL FOLDS THAT ARE INTERRUPTED AND DEFLECTED MEDIALLY, AND A CALL GIVEN OUT OF WATER DISTINGUISH THIS SPOTTED FROG FROM OTHER LEOPRD

ELEVATION RANGE: 3000-8300 FT.

COUNTIES: SANTA CRUZ, APACHE, GILA, PIMA, COCHISE, GREENLEE, GRAHAM, YAVAPAI, COCONINO, NAVAJO

HABITAT: STREAMS, RIVERS, BACKWATERS, PONDS, AND STOCK TANKS THAT ARE FREE FROM INTRODUCED FISH AND BULLFROGS

REQUIRE PERMANENT OR NEARLY PERMANENT WATER SOURCES. POPULATIONS NORTH OF THE GILA RIVER ARE THOUGHT TO BE CLOSELY-RELATED, BUT DISTINCT, UNDESCRIBED SPECIES. SPECIES ALSO FOUND ON FORT HUACHUCA

SGS WITTER, INC.
CONSULTING ENGINEERS & PLANNERS

Offices located in Albuquerque, NM and Lubbock, TX

December 20, 1999

Mr. James W. Garrison
State Historical Preservation Officer
Arizona State Parks
1300 W. Washington
Phoenix, Arizona 85007

RE: Borrower's Environmental Report Navopache Electric Cooperative, Inc.

Dear Mr. Garrison:

We are in the process of preparing a construction work plan for the Navopache Electric Cooperative, Inc. of Lakeside, Arizona. This will be used as supporting engineering data for a loan application to the Rural Utilities Service (RUS) in Washington, D.C. A primary consideration of this procedure is to assure that the proposed construction projects do not adversely affect the quality of the environment. Therefore, we request that your staff review the planned construction projects outlined in the enclosed "Project List".

A considerable portion of the proposed construction is of a continuing nature involving line extensions to provide electrical service to new members. These extensions can be one or more spans of primary distribution line to reach the desired service location. Also included are system improvements that are required to increase capacity or reliability, improve voltage levels, or decrease losses.

We would appreciate your review of this information and your concurrence with the work plan proposed for the Cooperative. If there are specific practices which the Cooperative needs to implement, please let us know about them and any particular area involved.

The completed work plan is one of the many items required by RUS supporting documents for construction loan fund approval. A written response from your agency is required and we respectfully request your reply by February 4, 2000.

Please address your letter to:

Mr. Kent Rhoton, Manager of Engineering
Navopache Electric Cooperative, Inc.
P.O. Box 308
Lakeside, Arizona 85929
(1-800-543-6324)

1804-A Juan Tabo Blvd. NE, Albuquerque, NM 87112 • Office: (505) 292-3635 • Fax: 293-2230

We would appreciate your sending a copy of this reply to the engineer at the address on the letterhead.

Sincerely,

SGS WITTER, INC.

Michael L. Smith

Michael L. Smith, P.E.

enclosure

cc: Kent Rhoton, Navopache

"Managing and conserving natural, cultural, and recreational resources"

Arizona State Parks

Jane Dee Hull
Governor

State Parks
Board Members

Chair
Sheri J. Graham
Sedona

Vernon Roudebush
Safford

Walter D. Armer, Jr.
Benson

Suzanne Pfister
Phoenix

Joseph H. Holmwood
Mesa

Ruth U. Patterson
St. Johns

Michael E. Anable
Acting State
Land Commissioner

Kenneth E. Travous
Executive Director

Arizona State Parks
1300 W. Washington
Phoenix, AZ 85007

Tel & TTY: 602.542.4174
www.pr.state.az.us

800.285.3703
from (520) area code

General Fax:
602.542.4180

Director's Office Fax:
602.542.4188

February 7, 2000

Lawrence R. Wolfe, Acting Director
USDA Rural Development
Rural Utilities Service
Engineering and Environmental Staff
Washington, DC 20250

Attention: Dennis Rankin

Re: Proposed Construction Work Plan for Navopache Electric Cooperative, Inc. of Lakeside, AZ; RUS

Dear Mr. Wolfe:

We recently received a work plan and a cultural resources survey report in support of the above referenced loan application from Rural Utilities Services (RUS) from Navopache Electric Cooperative. We have reviewed the documentation submitted and have the following comments pursuant to 36 CRF Part 800:

The survey of the area of potential effect for the project located no cultural resources eligible for inclusion on the National Register of Historic Places. Therefore, it is our opinion that a **no historic properties affected** determination is appropriate for the project as described.

Sincerely,

Jo Anne Miller
Compliance Specialist/Archaeologist
State Historic Preservation Office

Cc: Kent Rhoton, Manager of Engineering
Navopache Electric Cooperative, Inc.
P. O. Box 308
Lakeside, AZ 85929

SGS WITTER, INC.
CONSULTING ENGINEERS & PLANNERS

Offices located in Albuquerque, NM and Lubbock, TX

December 20, 1999

Mr. John C. Bedell
Forest Supervisor
Apache-Sitgreaves National Forest
P.O. Box 640
Springerville, Arizona 85938

RE: Borrower's Environmental Report Navopache Electric Cooperative, Inc.

Dear Mr. Bedell:

We are in the process of preparing a construction work plan for the Navopache Electric Cooperative, Inc. of Lakeside, Arizona. The Cooperative provides electric power to consumers in the State of Arizona and to portions of Catron County, New Mexico. This will be used as supporting engineering data for a loan application to the Rural Utilities Service (RUS) in Washington, D.C. A primary consideration of this procedure is to assure that the proposed construction projects do not adversely affect the quality of the environment. Therefore, we request that your staff review the planned construction projects outlined in the enclosed "Project List".

A considerable portion of the proposed construction is of a continuing nature involving line extensions to provide electrical service to new members. These extensions can be one or more spans of primary distribution line to reach the desired service location. Also included are system improvements that are required to increase capacity or reliability, improve voltage levels, or decrease losses.

The projects in the work plan do not represent "construction" projects nor do any of the projects require an Environmental Impact Statement. Therefore, this submission of the work plan materials to you is not a specific request for a tabulation of federally listed or proposed to be listed threatened or endangered species, but rather a submission for your information and comment only in the event that U.S.F.W.S. is aware of some specific environmental impediment (endangered species or otherwise) of which the Cooperative is not aware.

The protection afforded to threatened and endangered species and their critical habitats under the Endangered Species Act still applies to all projects. This Cooperative is, as are all RUS borrowers, responsible for and will comply with the provisions of the 1978 amendments to the Endangered Species Act regarding the effect (if any) of their distribution and transmission line construction program on threatened and endangered species.

The "Borrower's Environmental Report" provides a general description of the Cooperative's construction practices. The Cooperative is aware that floodplains and wetlands occur in their service area, and line construction in these places is avoided whenever possible. Where construction is required in these areas, steps are taken to minimize the impact.

1804-A Juan Tabo Blvd. NE, Albuquerque, NM 87112 • Office: (505) 292-3635 • Fax: 293-2230

We would appreciate your review of this information and your concurrence with the work plan proposed for the Cooperative. If there are specific practices which the Cooperative needs to implement, please let us know about them and any particular area involved.

The completed work plan is one of the many items required by RUS supporting documents for construction loan fund approval. A written response from your agency is required and we respectfully request your reply by February 4, 2000.

Please address your letter to:

Mr. Kent Rhoton, Manager of Engineering
Navopache Electric Cooperative, Inc.
P.O. Box 308
Lakeside, Arizona 85929
(1-800-543-6324)

We would appreciate your sending a copy of this reply to the engineer at the address on the letterhead.

Sincerely,

SGS WITTER, INC.

Michael L. Smith

Michael L. Smith, P.E.

enclosure

cc: Kent Rhoton, Navopache

COPY

United States Department of Agriculture
Forest Service
Apache-Sitgreaves National Forests
P.O. Box 640
Springerville, AZ 85938-0640
(520) 333-4301 Fax: 333-6357
TTY/TDD: 333-6292

File Code: 2720

Date: January 24, 2000

Kent Rhoton, Manager of Engineering
Navopache Electric Cooperative, Inc.
P.O. Box 308
Lakeside, AZ 85929

Dear Mr. Rhoton:

Thank you for the opportunity to review the Borrower's Environmental Report and planned construction projects as outlined in your December 29, 1999 letter.

It appeared that all or portions of the following projects would be located on the Apache-Sitgreaves National Forests: Springer Mountain - Circuit 71, Concho - Circuit 163, Heber - Circuit 192 and Lakeside - Circuit 71.

As each specific project affecting National Forest lands is proposed, we will conduct a site specific environmental analysis. The analysis will include scoping and identifications of any concerns specific to the project.

Compliance with the Endangered Species Act and with State and Federal laws and regulations governing heritage resources will also be assured.

The Borrower's Report is an excellent overview and summation of your construction program, and we concur with the proposed work plan.

Sincerely,

JOHN C. BEDELL
Forest Supervisor

Enclosure

cc:Michael Smith, SGS Witter ✓
District Ranger, Lakeside RD
District Ranger, Heber RD
Jim Anderson

SGS WITTER, INC.
CONSULTING ENGINEERS & PLANNERS

Offices located in Albuquerque, NM and Lubbock, TX

December 20, 1999

Mr. Humberto Hernandez
State Conservationist
U.S. Department of Agriculture
Soil Conservation Service
3003 N. Central – Suite 800
Phoenix, Arizona 86515

RE: Borrower's Environmental Report Navopache Electric Cooperative, Inc.

Dear Mr. Hernandez:

We are in the process of preparing a construction work plan for the Navopache Electric Cooperative, Inc. of Lakeside, Arizona. This will be used as supporting engineering data for a loan application to the Rural Utilities Service (RUS) in Washington, D.C. A primary consideration of this procedure is to assure that the proposed construction projects do not adversely affect the quality of the environment. Therefore, we request that your staff review the planned construction projects outlined in the enclosed "Project List".

A considerable portion of the proposed construction is of a continuing nature involving line extensions to provide electrical service to new members. These extensions can be one or more spans of primary distribution line to reach the desired service location. Also included are system improvements that are required to increase capacity or reliability, improve voltage levels, or decrease losses.

We would appreciate your review of this information and your concurrence with the work plan proposed for the Cooperative. If there are specific practices which the Cooperative needs to implement, please let us know about them and any particular area involved.

The completed work plan is one of the many items required by RUS supporting documents for construction loan fund approval. A written response from your agency is required and we respectfully request your reply by February 4, 2000.

Please address your letter to:

Mr. Kent Rhoton, Manager of Engineering
Navopache Electric Cooperative, Inc.
P.O. Box 308
Lakeside, Arizona 85929
(1-800-543-6324)

1801 A Juan Tabo Blvd. NE, Albuquerque, NM 87112 • Office: (505) 292-3635 • Fax: 293-2230

We would appreciate your sending a copy of this reply to the engineer at the address on the letterhead.

Sincerely,

SGS WITTER, INC.

Michael L. Smith

Michael L. Smith, P.E.

enclosure

cc: Kent Rhoton, Navopache

USDA

United States
Department of
Agriculture

Natural
Resources
Conservation
Service

3003 N. Central Ave.
Suite 800
Phoenix, AZ
85012-2495

January 20, 2000

Mr. Kent Rhoton
Manager of Engineering
Navopache Electric Cooperative, Inc.
PO Box 308
Lakeside, Arizona 85929

Dear Mr. Rhoton:

This response is in regard to your letter dated December 20, 1999, concerning the environmental report for proposed power line conversions, reroutes, Rural Utility Service projects, new transmission lines, new substations, switching stations, etc. throughout the Lakeside/Pinetop/Springerville/Eagar area of Arizona.

The Natural Resources Conservation Service (NRCS) has general responsibility, nationwide, for implementing the Farmland Protection Policy Act (FPPA) and to review projects that may affect prime farmland and/or wetlands associated with agriculture. After reviewing the information provided, the following is noted:

1- The proposed new projects if implemented as planned, are exempt from the requirements of the FPPA - as revised in 1994, that excludes land which is already in or is committed to urban development, currently used as water storage, or land that is not prime or unique farmland.
2- We do not see any immediate concerns or impacts that would directly affect wetland areas associated with agriculture.

Should you have questions, please feel free contact Jeff Schmidt, Community Assistance Coordinator at 602.280.8818. Thank you again for the chance to review the proposed projects.

Sincerely,

Mike Somerville

MICHAEL SOMERVILLE
State Conservationist

cc:
Jim Briggs, Assistant State Conservationist, NRCS, Phoenix, Arizona
Scott Ferguson, District Conservationist, NRCS, Holbrook, Arizona
Brian Sorenson, District Conservationist, NRCS, Springerville, Arizona
Jeff Schmidt, Community Assistance Coordinator, NRCS, Phoenix, Arizona

SGS WITTER, INC.
CONSULTING ENGINEERS & PLANNERS

Offices located in Albuquerque, NM and Lubbock, TX

December 20, 1999

~~Mr. Ron Christopherson~~ Bob Broscheid, WMHB
Project Evaluation Coordinator
State of Arizona
Department of Game & Fish
2222 West Greenway Road
Phoenix, Arizona 85023

RE: Borrower's Environmental Report Navopache Electric Cooperative, Inc.

Dear Mr. Christopherson:

We are in the process of preparing a construction work plan for Navopache Electric Cooperative, Inc. of Lakeside, Arizona. This will be used as supporting engineering data for a loan application to the Rural Utilities Service (RUS) in Washington, D.C. A primary consideration of this procedure is to assure that the proposed construction projects do not adversely affect the quality of the environment. Therefore, we request that your staff review the planned construction projects in the enclosed "Project List'.

A considerable portion of the proposed construction is of a continuing nature involving line extensions to provide electrical service to new members. These extensions can be one or more spans of primary distribution line to reach the desired service location. Also included are system improvements that are required to increase capacity or reliability, improve voltage levels, or decrease losses.

We would appreciate your review of this information and your concurrence with the work plan proposed for the Cooperative. If there are specific practices which the Cooperative needs to implement, please let us know about them and any particular area involved.

The completed work plan is one of the many items required by RUS supporting documents for construction loan fund approval. A written response from your agency is required and we respectfully request your reply by February 4, 2000.

Please address your letter to:

Mr. Kent Rhoton, Manager of Engineering
Navopache Electric Cooperative, Inc.
P.O. Box 308
Lakeside, Arizona 85929
(1-800-543-6324)

1804-A Juan Tabo Blvd. NE, Albuquerque, NM 87112 • Office: (505) 292-3635 • Fax: 293-2230

We would appreciate your sending a copy of this reply to the engineer at the address on the letterhead.

Sincerely,

SGS WITTER, INC.

Michael L. Smith

Michael L. Smith, P.E.

enclosure

cc: Kent Rhoton, Navopache

THE STATE OF ARIZONA

GAME & FISH DEPARTMENT

2221 West Greenway Road, Phoenix, Arizona 85023-4399 (602) 942-3000
www.gf.state.az.us
HC 66 Box 57201 (2878 White Mountain Blvd.), Pinetop, Az. 85935

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Michael M. Golightly, Flagstaff
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Director
Duane L. Shroufe
Deputy Director
Steve K. Ferrell

February 11, 2000

Mr. Kent Rhoton
Manager of Engineering
Navopache Electric Cooperative, Inc.
Lakeside, AZ 85929

RE: Borrower's Environmental Report, Navopache Electric Cooperative, Inc.

Dear Mr. Rhoton,

The Arizona Game and Fish Department (Department) recently received a letter from SGS Witter, Inc. regarding the proposed construction work plan they are preparing for Navopache Electric Cooperative, Inc. The Department's Heritage Data Management System (HDMS) has been accessed and current records indicate that the special status species listed below have been documented as occurring in the project vicinity.

COMMON NAME	SCIENTIFIC NAME	STATUS
American redstart	*Setophaga ruticilla*	**WC**
bald eagle	*Haliaeetus leucocephalus*	**LT,WC**
belted kingfisher	Ceryle alcyon	**WC**
Blumer's dock	*Rumex orthoneurus*	**HS**
bobolink	*Dolichonyx oryzivorus*	**WC**
California floater	*Anodonta californiensis*	**S**
Goodding onion	*Allium gooddingii*	**S,HS**
gray catbird	*Dumetella carolinensis*	**WC**
Little Colorado spinedace	*Lepidomeda vittata*	**LT,WC**
Little Colorado sucker	*Catostomus* sp.	**WC,S**
mountain plover	*Charadrius montanus*	**PT**
Northern leopard frog	*Rana pipiens*	**WC,S**
Nutrioso milk-vetch	*Astragalus nutriosensis*	**SR**
Southwestern willow flycatcher	*Empidonax traillii extimus*	**LE,WC**
Springerville pocket mouse	*Perognathus flavus goodpasteri*	**S**
Veery	*Catharus fuscescens*	**WC**
White Mountains water penny beetle	*Psephenus montanus*	**S**

STATUS DEFINITIONS

LE - **Listed Endangered.** Species identified by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA) as being in imminent jeopardy of extinction.

LT - **Listed Threatened.** Species identified by USFWS under ESA as being in imminent jeopardy of becoming Endangered.

PT - **Proposed Threatened.** Species being reviewed by USFWS for listing as Threatened under ESA.

WC - **Wildlife of Special Concern in Arizona.** Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Department's listing of **Wildlife of Special Concern in Arizona** (WSCA, in prep.). Species included in WSCA are currently the same as those in **Threatened Native Wildlife in Arizona** (1988).

S - **Sensitive.** Species classified as "sensitive" by the Regional Forester when occurring on lands managed by the U.S.D.A. Forest Service.

HS - **Highly Safeguarded**. Those Arizona native plants whose prospects for survival in this state are in jeopardy or are in danger of extinction, or are likely to become so in the foreseeable future, as described by the Arizona Native Plant Law (1993).

SR - **Salvage Restricted.** Those Arizona native plants not included in the Highly Safeguarded Category, but that have a high potential for theft or vandalism, as described by the Arizona Native Plant Law (1993).

In addition, this project occurs in the vicinity of designated Critical Habitat for the Southwestern willow flycatcher (*Empidonax traillii extimus*) (62 Federal Register 39129, July 22, 1997).

The Department recommends that you contact the U.S. Fish and Wildlife Service, at the address listed below, for additional information regarding the Endangered Species Act and how it applies to Critical Habitat for the willow flycatcher, and Federal special status species noted above. In addition, the Department also recommends that you contact the Arizona Department of Agriculture (ADA) for additional information regarding Arizona Native Plant Law and potential restrictions that may apply to the salvage or removal of plant species.

Mr. James McGinnis
Manager, Native Plant Law
Plant Services Division
Arizona Department of Agriculture
1688 West Adams
Phoenix, Arizona 85007
Phone: (602) 542-3292
FAX (602) 542-0999

Mr. Tom Gatz
Endangered Species Coordinator
Ecological Services
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Phone: (602) 640-2720
FAX: (602) 640-2730

As the above list indicates, numerous special status species are documented as occurring within the project vicinity. The general biological assessment conducted by SWCA, Inc., Environmental Consultants in August 1998 only references surveys for three of the species listed above (Goodding onion, Nutrioso milk vetch, and Southwestern willow flycatcher). Several of the proposed construction activities associated with the project (i.e., excavation/auger drilling activities and vehicle access associated with installation of new poles), have the potential to impact the above-listed species or habitat for the above listed-species. We recommend that you consider the potential impacts on these species and their habitats in the biological assessment and evaluation for this project.

Sincerely,

Sharen L. Adams
Habitat Program Manager

cc: John Kennedy, Project Evaluation Program Supervisor
James McGinnis, Manager, Native Plant Law, ADA
Tom Gatz, Endangered Species Coordinator, AZ Ecological Services, USFWS

Log # 01-04-00(05)

SGS WITTER, INC.
CONSULTING ENGINEERS & PLANNERS

Offices located in Albuquerque, NM and Lubbock, TX

December 20, 1999

Mr. Michael Romero Taylor
State Historic Preservation Officer
Office of Cultural Affairs
Villa Rivera, Room 101
228 East Palace Avenue
Santa Fe, New Mexico 87503

RE: Borrower's Environmental Report Navopache Electric Cooperative, Inc.

Dear Mr. Taylor:

We are in the process of preparing a construction work plan for the Navopache Electric Cooperative, Inc. of Lakeside, Arizona. This will be used as supporting engineering data for a loan application to the Rural Utilities Service (RUS) in Washington, D.C. A primary consideration of this procedure is to assure that the proposed construction projects do not adversely affect the quality of the environment. Therefore, we request that your staff review the planned construction projects outlined in the enclosed "Project List".

A considerable portion of the proposed construction is of a continuing nature involving line extensions to provide electrical service to new members. These extensions can be one or more spans of primary distribution line to reach the desired service location. Also included are system improvements that are required to increase capacity or reliability, improve voltage levels, or decrease losses.

We would appreciate your review of this information and your concurrence with the work plan proposed for the Cooperative. If there are specific practices which the Cooperative needs to implement, please let us know about them and any particular area involved.

The completed work plan is one of the many items required by RUS supporting documents for construction loan fund approval. A written response from your agency is required and we respectfully request your reply by February 4, 2000.

Please address your letter to:

Mr. Kent Rhoton, Manager of Engineering
Navopache Electric Cooperative, Inc.
P.O. Box 308
Lakeside, Arizona 85929
(1-800-543-6324)

1804-A Juan Tabo Blvd. NE, Albuquerque, NM 87112 • Office: (505) 292-3635 • Fax: 293-2230

Mr. Michael Taylor
December 20, 1999
Page two

We would appreciate your sending a copy of this reply to the engineer at the address on the letterhead.

Sincerely,

SGS WITTER, INC.

Michael L. Smith

Michael L. Smith, P.E.

enclosure

cc: Kent Rhoton, Navopache

NO COMMENT
29 Dec 99
for NMSHPO

SGS WITTER, INC.
CONSULTING ENGINEERS & PLANNERS

Offices located in Albuquerque, NM and Lubbock, TX

December 20, 1999

Mr. Abel M. Camarena
Forest Supervisor
Gila National Forest
3005 E. Camino del Bosque
Silver City, New Mexico 88061

RE: Borrower's Environmental Report Navopache Electric Cooperative, Inc.

Dear Mr. Camarena:

We are in the process of preparing a construction work plan for the Navopache Electric Cooperative, Inc. of Lakeside, Arizona. This will be used as supporting engineering data for a loan application to the Rural Utilities Service (RUS) in Washington, D.C. A primary consideration of this procedure is to assure that the proposed construction projects do not adversely affect the quality of the environment. Therefore, we request that your staff review the planned construction projects outlined in the enclosed "Project List".

A considerable portion of the proposed construction is of a continuing nature involving line extensions to provide electrical service to new members. These extensions can be one or more spans of primary distribution line to reach the desired service location. Also included are system improvements that are required to increase capacity or reliability, improve voltage levels, or decrease losses.

We would appreciate your review of this information and your concurrence with the work plan proposed for the Cooperative. If there are specific practices which the Cooperative needs to implement, please let us know about them and any particular area involved.

The completed work plan is one of the many items required by RUS supporting documents for construction loan fund approval. A written response from your agency is required and we respectfully request your reply by February 4, 2000.

Please address your letter to:

Mr. Kent Rhoton, Manager of Engineering
Navopache Electric Cooperative, Inc.
P.O. Box 308
Lakeside, Arizona 85929
(1-800-543-6324)

1804-A Juan Tabo Blvd. NE, Albuquerque, NM 87112 • Office: (505) 292-3635 • Fax: 293-2230

We would appreciate your sending a copy of this reply to the engineer at the address on the letterhead.

Sincerely,

SGS WITTER, INC.

Michael L. Smith

Michael L. Smith, P.E.

enclosure

cc: Kent Rhoton, Navopache

United States Department of Agriculture
Forest Service
Gila National Forest
505-388-8201
3005 E. Camino del Bosque
Silver City, NM 88061-7863
FAX: 505-388-8204
TDD: 505-388-8489

File Code: 2720
Date: February 10, 2000

Mr. Kent Rhoton
Navopache Electric Cooperative, Inc.
P.O. Box 308
Lakeside, AZ 85929

RE: SGS Witter, Inc. Letter dated 12/20/99

Dear Mr. Rhoton:

We have reviewed the list of construction projects sent by SGS Witter, Inc and have determined that none of the proposed projects impact land administered by the Gila National Forest.

If you have any questions please call Tom Williams at 505/533-6231.

Sincerely;

Abel M. Camarena

ABEL M. CAMARENA
Forest Supervisor

OVERSIZED MAP

BORROWER'S ENVIRONMENTAL REPORT MAPS

BOUNDARY BUTT, AZ
EGAR, AZ
HEBER, AZ

TO REVIEW SEE DOCKET SUPERVISOR

DOCKET
E-01787A-00-0820

DECISION
63636

OVERSIZED MAP

BORROWER'S ENVIRONMENTAL REPORT MAPS

LAKESIDE, AZ
McNARY, AZ
ORTEGA MTN, AZ

TO REVIEW SEE DOCKET SUPERVISOR

DOCKET
E-01787A-00-0820

DECISION
63636

OVERSIZED MAP

BORROWER'S ENVIRONMENTAL REPORT MAPS

SPONSELLER MTN, AZ
VERNON, AZ
PROPOSED ROUND VALLEY TO SPRINGERVILLE

TO REVIEW SEE DOCKET SUPERVISOR

DOCKET
E-01787A-00-0820

DECISION
63636

APPENDIX A

Historical Data and Graphs

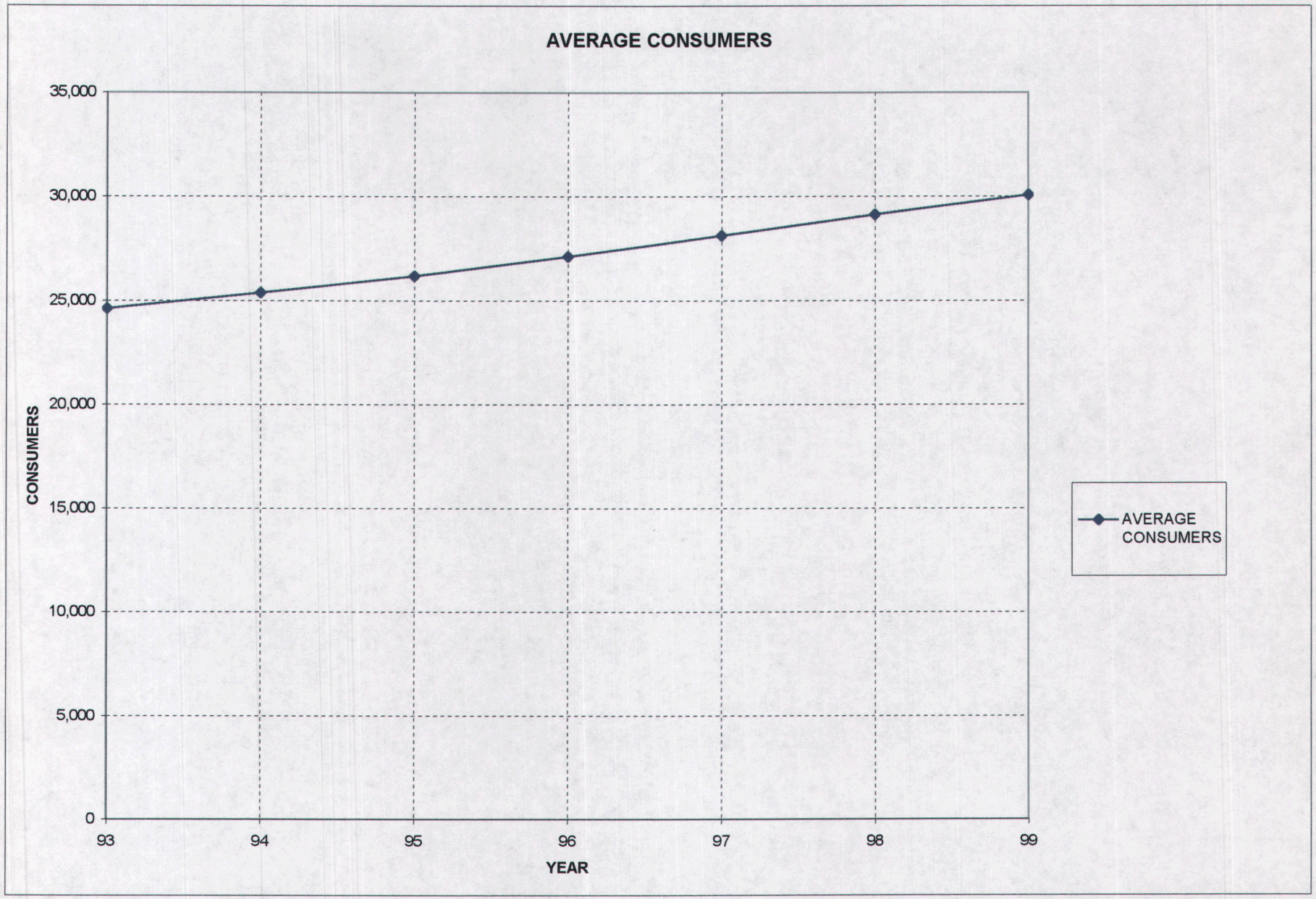
History Spreadsheet for Navopache Electric

YEAR	93	94	95	96	97	98	99
KILOWATT HOUR SALES	248,012,581	259,142,148	258,604,627	262,735,302	282,460,138	297,895,269	299,823,612
COOPERATIVE'S OWN USE	566,299	657,365	672,295	679,139	917,692	916,620	910,763
KILOWATT HOURS PURCHASED	267,558,556	281,742,105	279,734,380	286,734,924	306,540,790	321,771,079	323,885,153
COST OF PURCHASE POWER	17,206,703	18,020,552	17,794,693	17,120,536	17,319,452	17,583,537	17,794,297
PEAK DEMAND	48,670	48,430	49,030	53,920	56,030	56,111	58,260
ANNUAL LOAD FACTOR	62.8%	66.4%	65.1%	60.7%	62.5%	65.5%	63.5%
MILLS	64.31	63.96	63.61	59.71	56.50	54.65	54.94
KWH LOSSES	18,979,676	21,942,592	20,457,458	23,320,483	23,162,960	22,959,190	23,150,778
PERCENT LOSSES	7.09%	7.79%	7.31%	8.13%	7.56%	7.14%	7.15%
COST OF LOSSES	1,220,584	1,403,474	1,301,357	1,392,433	1,308,699	1,254,630	1,271,907
AVERAGE CONSUMERS	24,643	25,385	26,209	27,133	28,142	29,155	30,092
AVERAGE NEW CONSUMERS	537	742	824	924	1,009	1,013	937
NEW SERVICES	714	969	979	1,201	1,525	1,346	1,286
SERVICES RETIRED	177	272	269	327	206	180	227
NET GAIN SERVICES	537	697	710	874	1,319	1,166	1,059

OUTAGE HOURS PER CONSUMER

YEAR	95	96	97	98	99	5 YR AVG
POWER SUPPLIER	0.29	0.47	0.35	0.38	0.09	0.32
EXTREME STORM	6.65	0.29	1.24	0.02	0.61	1.76
PLANNED	0.13	0.15	0.19	0.12	0.09	0.14
ALL OTHER	2.02	1.26	1.04	1.43	2.04	1.56
TOTALS	9.09	2.17	2.82	1.95	2.83	3.77

NAVOPACHE ELECTRIC COOPERATIVE



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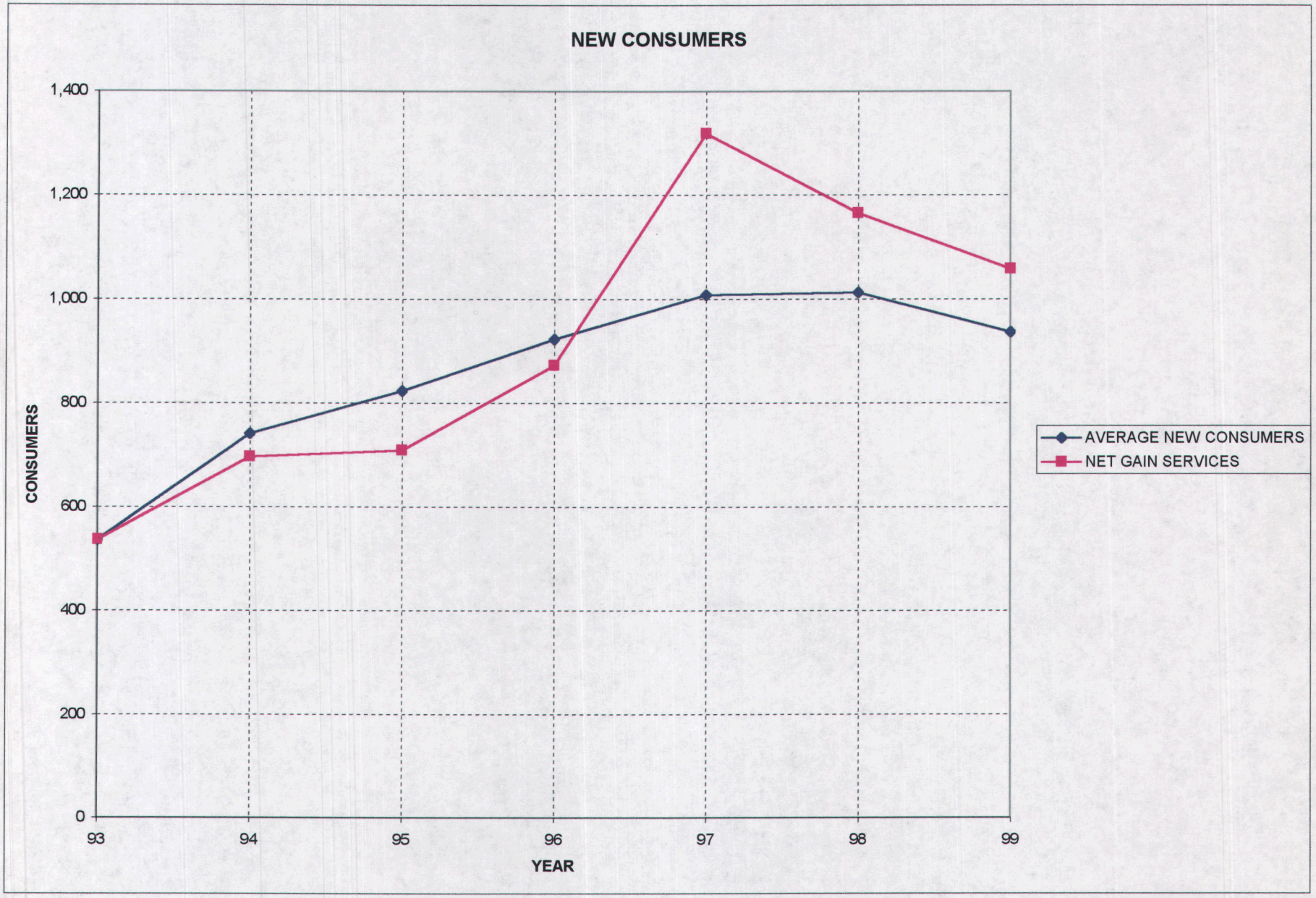
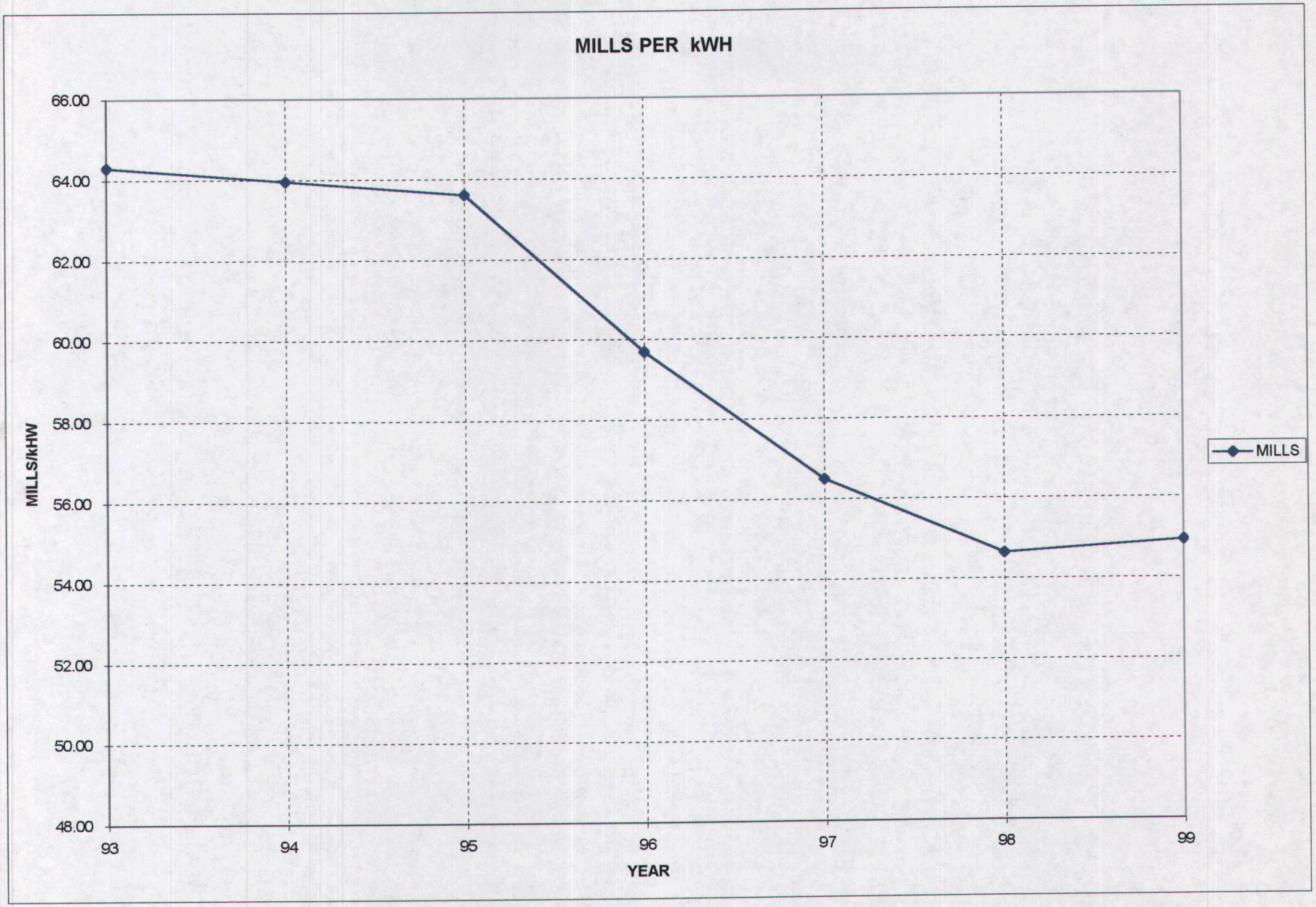


NAVOPACHE ELECTRIC COOPERATIVE

NAVOPACHE ELECTRIC COOPERATIVE



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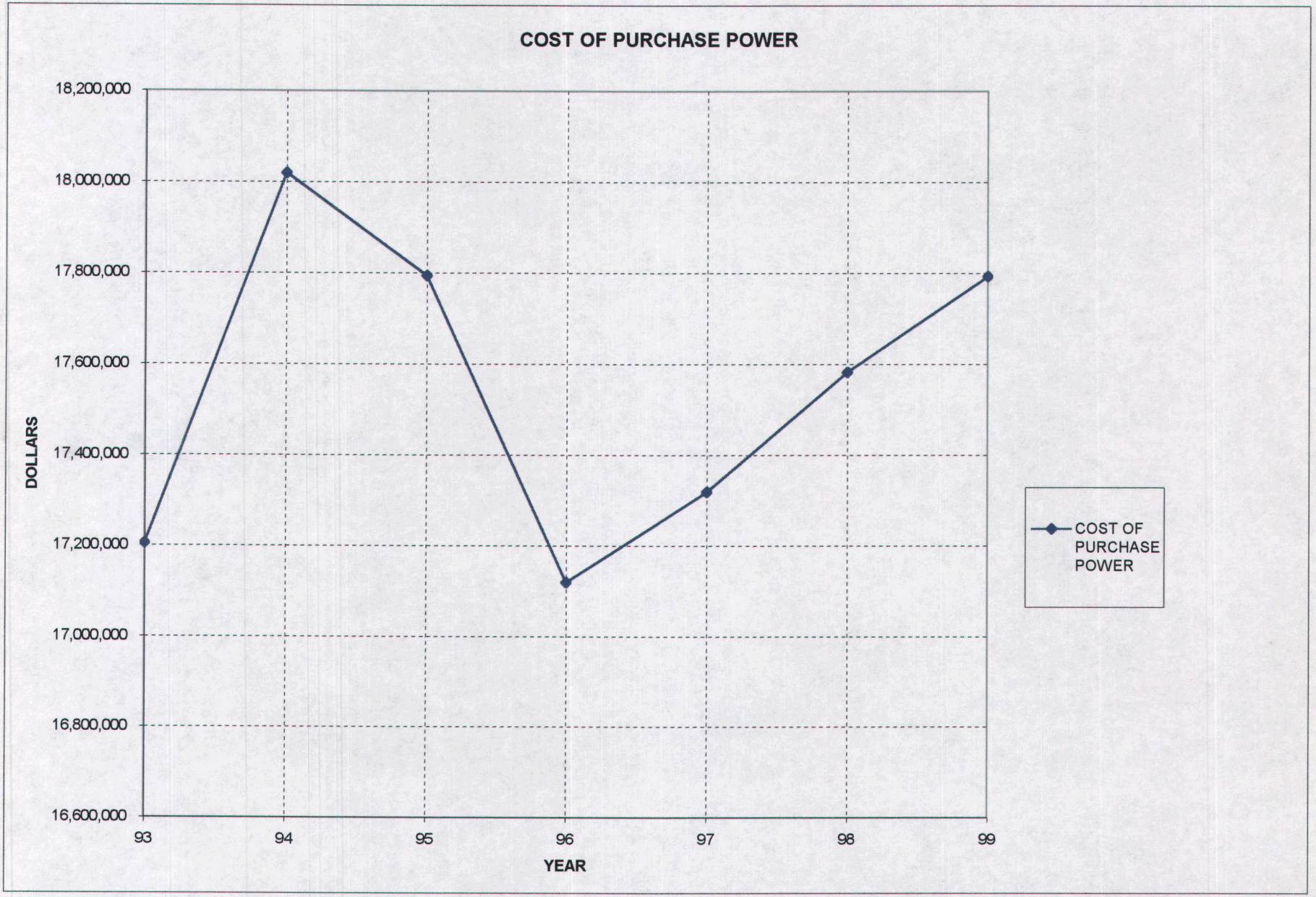

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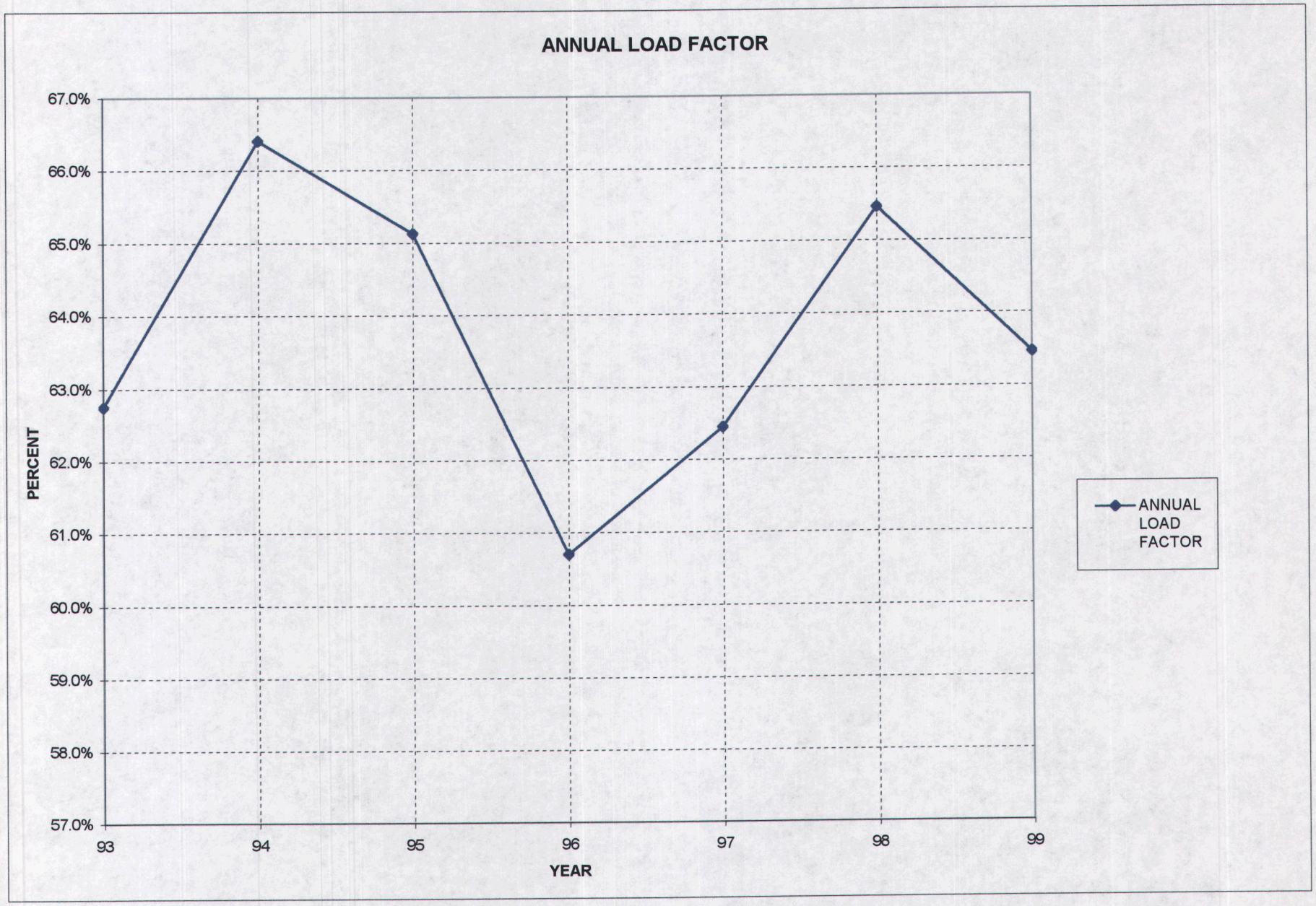

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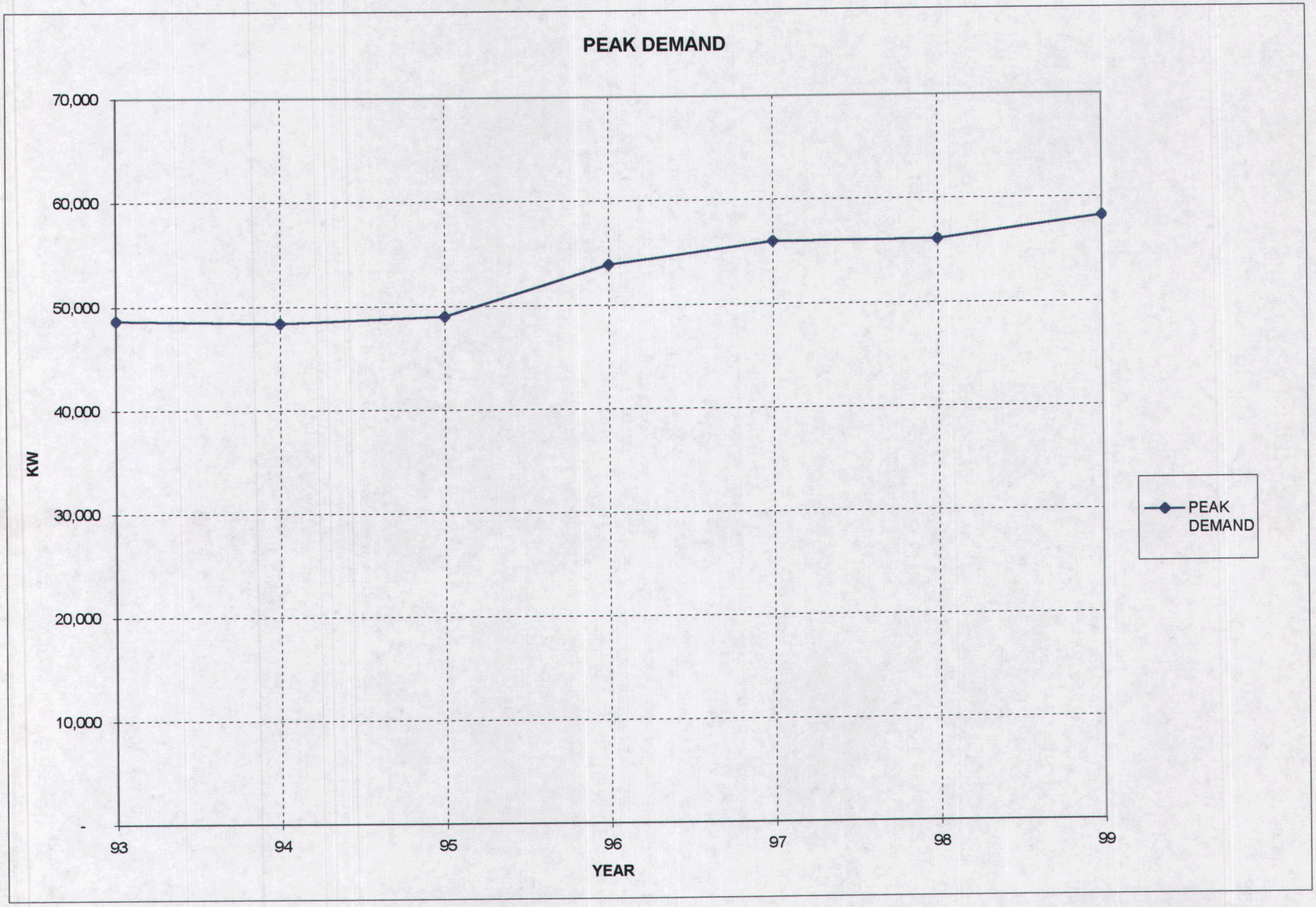

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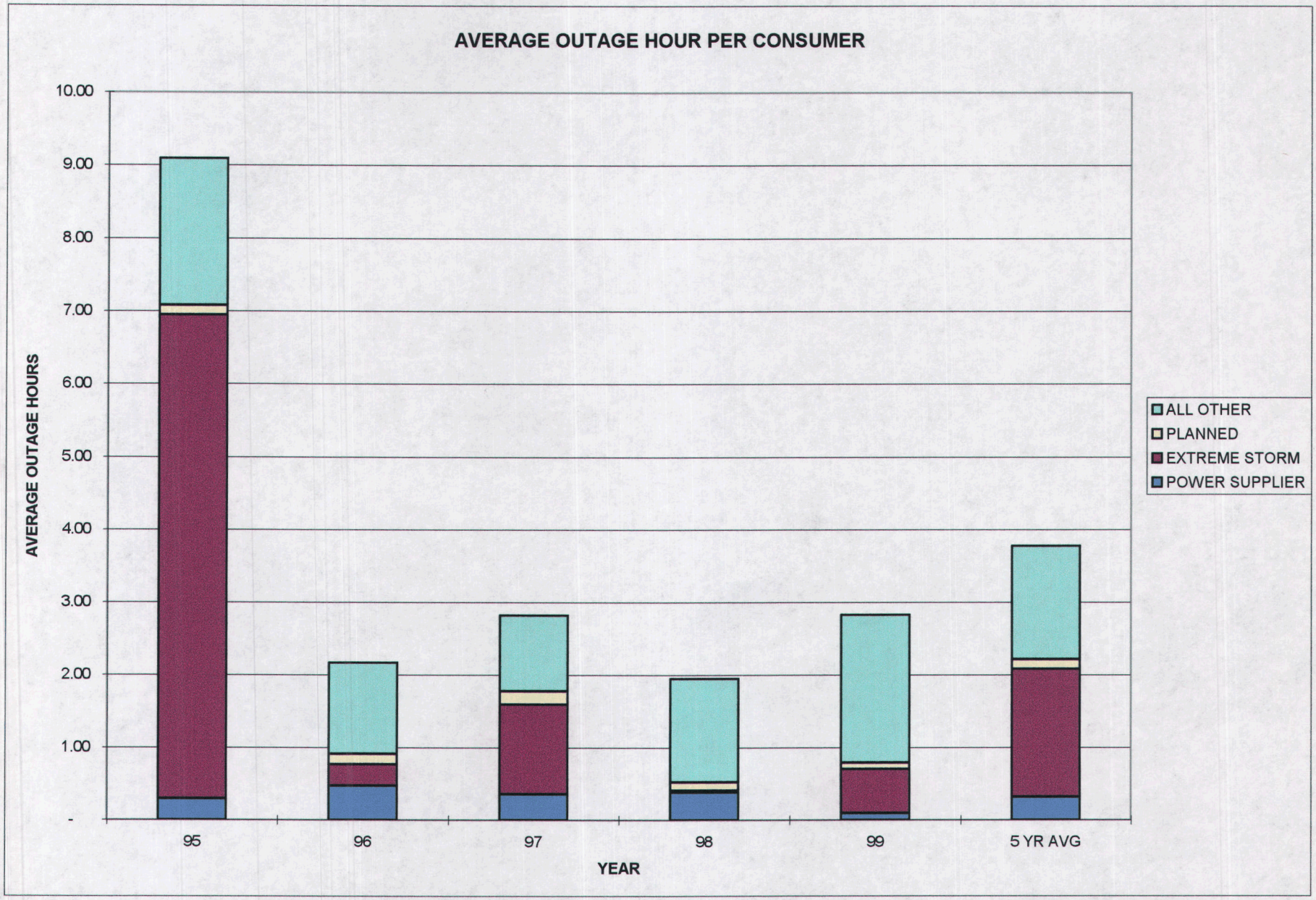

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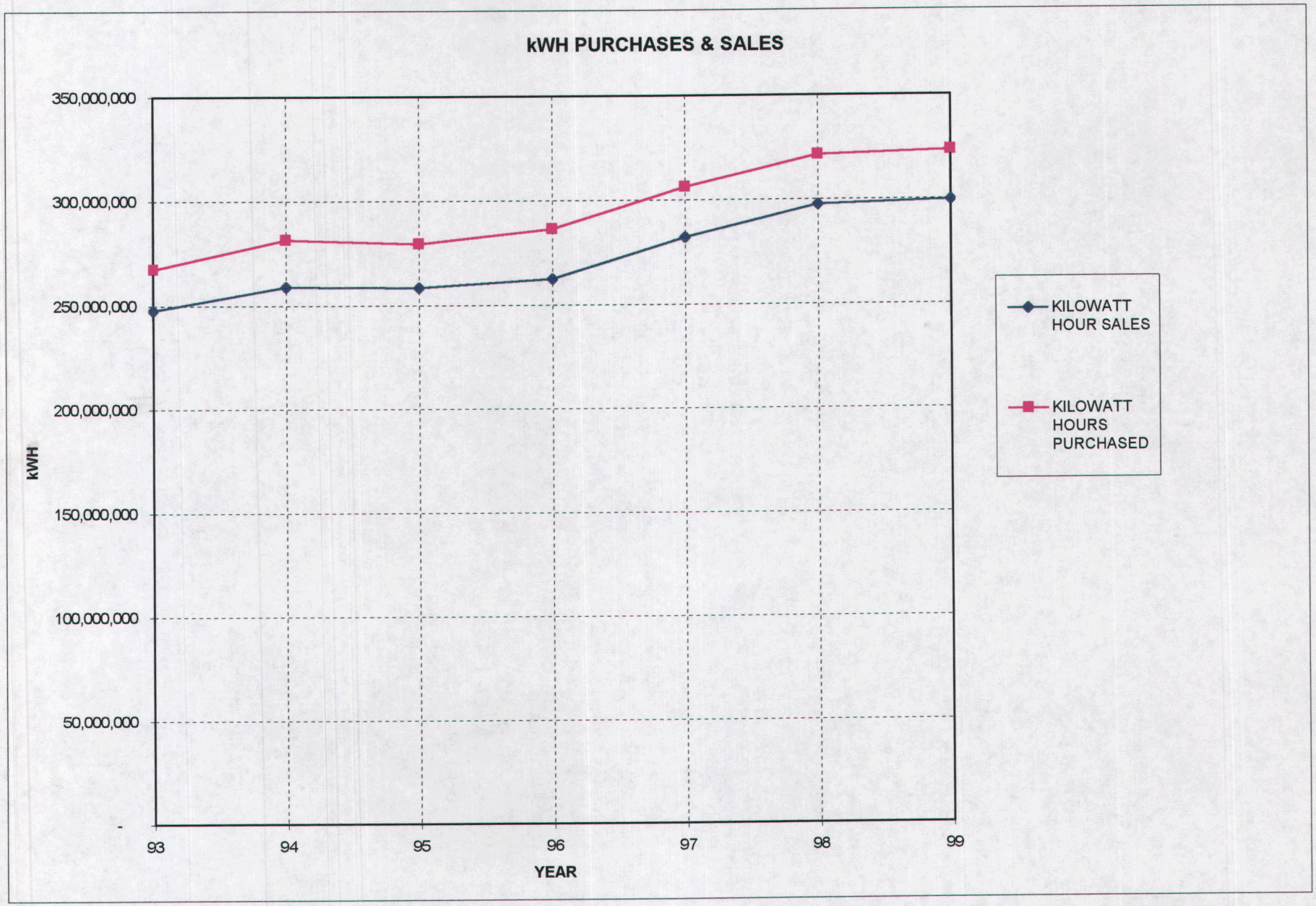

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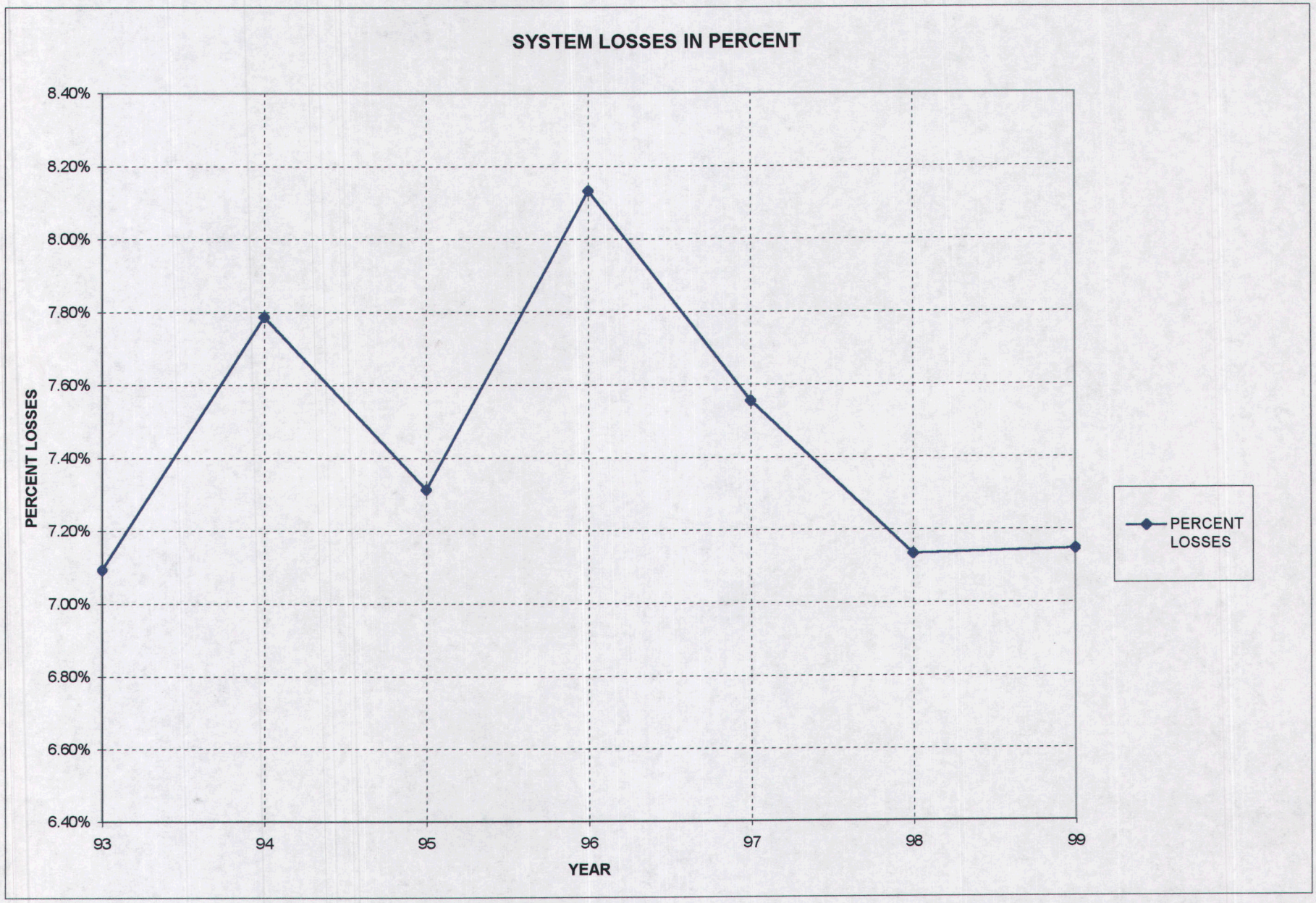

APPENDIX B

Operations and Maintenance Report

OPERATION AND MAINTENANCE SUMMARY

RIGHTS OF WAY

Many of our lines are located in heavily forested areas and therefore we do have rights-of-way problems associated with these areas, such as trees growing up into the lines, and dead and leaning trees outside the right-of-way which need to be constantly removed. We have a full time right-of-way maintenance crew consisting of three men working full-time throughout the system. Line crews in each area also help clear right-of-ways as well as an independent contractor. We have a brush clipper which is pulled by a truck with a dump bed on it that is utilized by the right-of-way crew in all areas, along with an insulated bucket truck to facilitate these operations and in order to do the work in a safer manner. This crew is also equipped with a four-wheel drive pickup and various types of power equipment and tools. Patrols are made periodically of our lines and the necessary maintenance functions performed immediately thereafter.

Weed control chemicals are used in all substation and material yards to control weeds, lessen fire danger, and improve overall appearance. All chemicals that are used in the above manner have previously been approved by the Forest Service and are also E.P.A. approved. The chemical applications are applied by a privately licensed applicator.

SUBSTATIONS

We have 21 substations of various sizes, age, voltage and type from 100 kVa to 10,000 kVa. Most stations are a new steel structure with SCADA controlled systems and complete metering. All substations are visited at monthly intervals and all systems and equipment checked visually. All meters, gauges and relays are read and recorded for future reference. A control building is in place in those stations which have SCADA equipment installed. Extra power fuses are kept at each location. A spare 7,500 kVa three-phase transformer and a spare 2,500 kVa transformer is available. For those stations which utilize single-phase transformers, a spare is presently located in each station, except the very small stations. We presently have a two-person substation crew consisting of one journeyman and one technician.

POLES

We have in service approximately 41,550 poles of greatly varying ages. The first poles were installed in 1948, but a majority of the poles are less than 20 years old. In 1961 we started a pole inspection program with the poles being inspected and treated in the field and a record made.

Poles found to be defective are changed almost immediately. Salvaged poles are checked and those meeting specifications are reused without retreatment. The pole inspection program was suspended in 1974. However, in 1984 the Board of Directors authorized restarting this program as an ongoing program to inspect and treat approximately 10% of our poles each year. In 1994 all poles had gone through another complete cycle, and we are now in a repeat cycle through the system. Only those poles 5 years and older are inspected.

In 1984, 2,851 poles were inspected and treated by the Osmose Company. Of these 64 (2.3%) were classified as reject poles, with 38 of these classified as candidates for pole reinforcement.

In 1985, 2,613 poles were inspected and treated by the same company with 287 (11.0%) classified as rejects. Of these, 170 were listed as candidates for pole reinforcement. Equipment was purchased and a four-wheel drive truck was equipped with pole reinforcing tools and equipment to reinforce those poles identified as "candidates for reinforcement". All poles identified in 1984 and 1985 for replacement and reinforcement have been replaced or reinforced.

In 1986, 3,046 poles were inspected and treated by Osmose with 271 poles (8.9%) being rejected. Of these, 44 (1.44%) were categorized as danger poles which needed replacement and 227 (7.45%) were candidates for reinforcement. All poles identified for replacement or reinforcement in 1986 have been completed.

In 1987, 4,175 poles were inspected and treated, again by the Osmose Company, resulting in 27 poles (0.65%) needing replacement and 58 poles (1.39%) needing reinforcement. Those poles so identified have all either been replaced or reinforced.

In 1988, 2,987 poles were inspected and treated, again by Osmose. These poles constituted all the 69 KV transmission system poles, regardless of age. Of these, 16 poles (0.54%) needed to be replaced and 74 poles (2.48%) were candidates for reinforcement. All of these replacements and reinforcements have been completed.

In 1989, 3,884 poles were inspected and treated by Pole Tech, Inc. Of these, 35 poles (0.90%) were found to need replacement and 49 poles (1.26%) needed reinforcement. All of these replacements and reinforcements have been completed.

In 1990, 2,931 poles were inspected and treated by Pole Tech., Inc. Of these, 38 poles 1.12%) were found to need replacement and 11 poles (0.33%) needed reinforcement. All of these replacements and reinforcements have been completed.

In 1991, 3,627 poles were inspected and treated by Osmose. Of these, 36 poles (0.99%) were found to need replacement and 36 poles (0.99%) needed reinforcement. All of the replacements and reinforcements have also been completed.

In 1992, 4,199 poles were inspected and treated by Pole Tech., Inc. Of these, 78 poles (1.86%) were found to need replacement and 43 poles (1.02%) needed reinforcement. All of these replacements and reinforcements have been completed.

In 1993, 1,114 poles were inspected and treated by the Osmose Company. This has completed an entire cycle of our system and in 1994 we have started the cycle once again. Of these 1,114 poles, 8 (0.72%) needed replacements and 6 (0.54%) needed reinforcements. This work has also been completed.

In 1994, 3,452 poles were inspected and treated by the Osmose Company. Of these, 36 poles (1.04%) were found to need replacement and 35 poles (1.01%) needed reinforcement. All of these replacements and reinforcements have been completed.

In 1995, 3,368 poles were inspected and treated by the Osmose Company. Of these 60 poles (1.78%) were found to need replacement and 103 poles (3.06%) needed reinforcement. All of these replacements and reinforcements have been completed.

In 1996, no pole inspections or treatment was performed.

In 1997, 4,093 poles were inspected and treated by the Osmose Company. Of these, 8 poles (0.2%) were found to need replacement and 11 poles (0.27%) were found to need reinforcement. All of these replacements and reinforcements have been completed.

In 1998, 4,140 poles were inspected and treated by the Osmose Company. Of these, 7 poles (0.17%) were found to need replacement and 7 poles (0.17%) were found to need reinforcement. All of these replacements and reinforcements have been completed.

TEN-YEAR POLE INSPECTION SUMMARY

Year	Contractor	Total Inspected	Total Replaced	Percent of Total	Total Reinforced	Percent of Total
1984	Osmose	2,851	64	2.24%	38	1.33%
1985	Osmose	2,613	287	10.98%	170	6.51%
1986	Osmose	3,046	44	1.44%	227	7.45%
1987	Osmose	4,175	27	0.65%	58	1.39%
1988	Osmose	2,987	16	0.54%	74	2.48%
1989	Pole Tech	3,884	35	0.90%	49	1.26%
1990	Pole Tech	2,931	38	1.30%	11	0.38%
1991	Osmose	3,627	36	0.99%	36	0.99%
1992	Pole Tech	4,199	78	1.86%	43	1.02%
1993	Osmose	1,114	8	0.72%	6	0.54%
1994	Osmose	3,452	36	1.04%	35	1.01%
1995	Osmose	3,368	60	1.78%	103	3.06%
1996	--	- 0 -				
1997	Osmose	4,093	8	0.20%	11	0.27%
1998	Osmose	4,140	7	0.17%	7	0.17%
Ten-Year Totals		46,480	744	1.60%	[illegible]	[illegible]

NOTE: *All transmission poles were inspected in 1988*

During the pole inspections, a complete visual inspection is also made of all equipment and attachments. Using these reports, follow-up maintenance is done by our crews.

TRANSFORMERS

We have more than 14,000 transformers on our system. Transformer cards, as well as transformer locations are set up and maintained on each transformer. At the present time, we have a transformer shop equipped for minor transformer repair. However, no transformer winding or core replacements are done in our shop. We do not have a formal program of changing out transformers for routine maintenance.

All transformers removed from service are sent through the shop for routine maintenance and checking. All new transformers are evaluated for losses with a percentage of all those received tested for losses and compared against the guaranteed losses from the manufacturer. All old transformers are also checked for losses and PCB content and those with high losses or PCB's are retired from service.

REGULATORS

We have in service approximately 75 voltage regulators with individual records on each regulator showing history, locations, etc. All regulators are field checked at least quarterly by our technicians with individual field inspections and untankings scheduled on each regulator at intervals of no more than four years, depending on the number of operations recorded on the regulators. A formal changeout program is not set up; however, all regulators brought into stock through routine work are put through the shop, tested, cleaned and painted if necessary. Our shop is equipped to handle regulators and we have experienced personnel to do the work.

OIL CIRCUIT RECLOSERS

We have about 375 oil circuit reclosers on our system. Our shop is equipped to handle recloser repairs and our shop men are experienced in this work. We have set up a program whereby each recloser is removed from the field at intervals of no more than four years and tested, cleaned and any necessary repairs made. In addition, all reclosers brought into stock through routine work are put through the shop, cleaned, tested, painted and any necessary repairs made. A complete new Sectionalizing Study was completed in November, 1991. The recommendations included in this most recent study have been implemented. We have the necessary test equipment and personnel for checking time current curves, etc.

FUSE CUTOUTS

We have on the system more than 2,600 fuse cutouts as line protection. These are used to isolate small line segments behind reclosers. Individual records are not established for each cutout. Checks are made as needed on this equipment. During the past few years, we have actively engaged in a program to change out older lower voltage-type cutouts and to add additional cutouts throughout the system to further isolate problems when they occur.

LIGHTNING ARRESTERS

We have approximately 15,000 lightning arresters on our system. We do not have a formal program to inspect and change out arresters other than when a problem is suspected of existing in a certain area.

TRANSPORTATION EQUIPMENT

The transportation equipment consists of 4 passenger cars, 54 pickup and small trucks, 14 heavy trucks and cranes of varying ages, 1 van-type vehicle, and 7 S.U.V. type vehicles. We also have 4 tracked vehicles for use in snow conditions and line patrols, 7 all-terrain vehicles, and 3 forklifts.

We have our own maintenance shop staffed by 3 journeymen mechanics who do all our own maintenance work, including washings, lubrications and even complete rebuilding of vehicles and engines as necessary. Last year our fleet traveled 948,072 miles.

METERS

We have over 37,000 meters. We have a complete meter repair shop fully equipped to handle any repair job with a large inventory of spare meter parts. We have two experienced journeymen metermen and two meter technicians working full time in the meter shop. Meters are changed almost daily and brought into the shop for testing, cleaning and repair. We have an ongoing meter field-testing program which is a random statistical sampling program that has been approved by both state regulatory commissions. Each year, approximately 1,000 meters are randomly tested under this program. All meters are grouped by age and type and compiled in a computer program. Any damaged meters are immediately replaced. In addition, any meters thought to be defective by the meter readers are brought into the shop and are sent through the meter shop for necessary repairs and calibration.

All old Westinghouse Type CS meters were removed from service several years ago. All General Electric meters with company numbers below 4800 have also been removed because they were found to be very inaccurate in the tests we have performed. These meters have primarily consisted of all type I-30-S, I-55-S, and some I-60-S meters. We have installed approximately 200 remotely read meters which are used primarily for load surveys and test metering. Our shop is also equipped to repair and test these meters.

From 1985 until 1993, we have purchased only electronic meters, specifically the General Electric type TM-80, T-90, TM-91 family, the TMR 900, and the DAC retrofit kit.

This decision was made due to increased accuracy and in anticipation of the implementation of time-of-use rates, which at this time numbers approximately 6,000 meters system wide. During 1995 to 1998, we purchased approximately 2,000 I-70-S meters for non-T.O.U. residential customers. In 1998, we began purchasing meters through a combined effort with the other co-op. members of our statewide association. The program has resulted in N.E.C. acquiring watt-hour meters by additional manufacturers such as ABB & Schlumberger.

We have a crew of 9 meter readers who read all our meters system wide in a 9 cycle sequence. Each meter is visited each month, whether connected or not. These meter readers have been trained to spot any damaged meters, vandalized meters, or meters that may have been tampered with. Any such cases are reported and action taken immediately to rectify any such situation.

SCADA SYSTEM

In 1982 we began the installation of a comprehensive SCADA system, which initially consisted of a master station with two (one of which was a standby) Advanced Control System MPM 3070's, both of which were powered by uninterruptible power supplies. Due to the growth of our system and the use put upon the SCADA system, in 1989 the master station was replaced with a Hewlett Packard HPM-7035 and the system reconfigured. In 1996, the SCADA master station was upgraded, again due to growth, to a fully redundant Hewlett Packard HPM-9000 system.

To date the software and hardware has been developed to complete the installation of 20 substations and 33 downstream devices. The system provides us with total control and complete metering of the above mentioned installations. In addition, the system allows us to implement load management techniques by lowering substation voltage regulators and to issue commands to activate radio controlled switches on electric water heaters in consumer's homes. At the present time, approximately 3,200 water heater controls have been installed.

COMMUNICATION EQUIPMENT

To handle our system communications, we have microwave systems located on Porter Mountain, Green's Peak, South Mountain, Frisco Ridge and Seven Mile Hill. This equipment maintains communications with 53 radio controlled SCADA remotes located in substations and at switching points throughout the system.

Radio communication is maintained throughout the system. A completely new radio system was installed and placed into operation in October of 1980. This equipment consists of three 100 watt mobile repeaters at Porter Mountain, Green's Peak and South Mountain; 60 watt base stations at Lakeside, Springerville, St. Johns, Overgaard, Whiteriver and Reserve, and 70, 60 watt mobile units, plus 40 hand-held portable units. Selection of the repeater to be used is by touch tone channels from any base station or mobile unit.

Two frequencies or channels are available so communications can be carried on between local units without using the mountain top repeaters.

A 2 Ghz microwave system was installed in September 1981. This gives the dispatcher at Lakeside direct control of the mountain top repeaters by touch tone selection. Also, mobiles accessing the microwave backbone by touch tone selection can communicate with another mobile from one end of the system to the other. In addition, the microwave directly ties the Lakeside headquarters to the offices in Springerville, St. Johns and Overgaard.

In 1989, a point-to-point link was added to the existing microwave backbone between South Mountain and Frisco Ridge, to tie the 50 watt SCADA base station at Frisco Ridge to the SCADA system.

In 1991, the existing 50 watt base stations on Green's Peak and Porter Mountain were changed over to a 952 Mhz 5 watt Multiple Address System (MAS). In January 1992, a 952 Mhz 5 watt MAS was added on Seven Mile Hill. In addition, point-to-point link was added to the microwave backbone between Porter Mountain and Seven Mile Hill to tie the MAS base to the SCADA system.

An automatic phone patch has been installed which gives mobile radio users direct contact with any commercial telephone at any time.

We have three full-time radio technicians and a fully equipped shop for complete maintenance of our communication and SCADA systems. The hardware, which comprises these systems, is changed out and upgraded as necessary to insure reliable operation.

APPENDIX C

Distribution Voltage Analyses

Navopache Electric Cooperative

2000-2003 Construction Work Plan Circuit Summary

Substation	Circuit	Non-Demand Metered Consumers 1998	Non-Demand Metered Consumers 2003	Feeder Loading in kW 1998	Feeder Loading in kW 2003	Feeder Loading in kVAR 1998	Feeder Loading in kVAR 2003	kW Losses 1998	kW Losses 2003	Heaviest Loaded Conductor 1998	Heaviest Loaded Conductor 2003	Maximum Voltage Drop (120 Volt Base) Reg. 1998	Unreg. 1998	Reg. 2003	Unreg. 2003
Alchesay	11 - Pinetop	734	940	2,112	2,377	326	408	16	19	19%	22%	--	1.7	--	1.9
	12 - Whiteriver	40	51	192	206	77	83	0	0	2%	2%	--	0.7	--	0.7
Alpine	131 - Town	642	745	883	983	83	92	8	9	19%	22%	--	5.2	--	5.8
	132 - George's Lake	2	2	13	13	1	1	0	0	1%	1%	--	0.0	--	0.0
Concho	161 - Town	73	83	110	122	-1	7	0	0	3%	3%	--	0.1	--	0.1
	162 - Hunt Valley	120	136	768	793	-76	-65	9	10	16%	17%	--	2.9	--	3.0
	163 - Concho Valley	1,045	1,182	2,103	2,323	164	220	145	83	40%	30%	13.1	19.5	5.8	8.8
Drumbeat	15 - Ft. Apache	541	705	4,915	5,120	1,857	1,958	44	47	46%	48%	--	4.3	--	4.4
	16 - Whiteriver	1,928	2,513	3,552	4,301	0	370	20	28	33%	40%	--	1.3	--	1.9
Frisco Ridge	139 - Frisco Ridge	4	5	22	29	9	12	0	0	1%	2%	--	0.0	--	0.0
Green's Peak	51 - Green's Peak	37	42	95	111	31	39	1	1	8%	9%	--	1.1	--	1.3
Greer	61 - St. Johns	21	24	449	460	121	126	6	6	10%	10%	--	1.9	--	1.9
	62 - Greer	495	560	2,894	3,031	799	859	77	84	22%	23%	4.3	8.3	4.6	8.6
Heber	191 - Heber	674	913	1,210	1,620	-11	192	6	12	25%	32%	--	1.1	--	1.3
	192 - Overgaard	2,311	3,131	3,153	4,221	-10	503	65	65	68%	60%	--	4.1	--	4.7
Jenk's Ranch	135 - Jenk's Ranch	1	1	19	19	8	8	0	0	1%	1%	--	0.0	--	0.0
Linden	41 - Lakeside	1,212	1,348	2,150	2,952	-10	366	28	57	24%	33%	--	2.7	--	4.0
	42 - Pinedale	1,307	1,771	2,592	3,311	-19	332	54	88	30%	38%	--	5.1	--	6.9
Luna	136 - Town	134	163	165	200	34	41	0	0	4%	5%	--	0.2	--	0.2
McNary	111 - McNary	114	14	291	29	72	9	9	1	43%	7%	8.2	10.5	6.5	7.1
Nutrioso	121 - Town	255	296	402	465	179	173	3	3	16%	22%	--	1.5	--	1.7
	122 - Sawmill	32	37	407	426	190	183	1	1	9%	10%	--	0.4	--	0.5
Pinetop Lakes	1 - Country Club	2,083	2,666	4,066	4,880	-77	329	36	51	55%	64%	--	1.9	--	2.7
	2 - Sky-Hi Retreat	336	430	696	1,030	78	245	2	2	11%	11%	--	0.5	--	0.6
	3 - Sports Village	306	392	691	1,195	0	252	0	1	8%	9%	--	0.1	--	0.2
Round Valley	181 - North	786	912	2,957	3,134	-39	53	29	32	33%	34%	--	2.7	--	2.9
	182 - South	1,895	2,199	3,994	1,549	480	519	64	9	40%	23%	4.6	4.6	--	2.1
Saffel Canyon	185 - Saffel Canyon	59	1,380	2,794	3,309	-1,242	474	23	57	23%	44%	--	0.4	4.6	4.6

Navopache Electric Cooperative

2000-2003 Construction Work Plan Circuit Summary

Substation	Circuit	Non-Demand Metered Consumers 1998	Non-Demand Metered Consumers 2003	Feeder Loading in kW 1998	Feeder Loading in kW 2003	Feeder Loading in kVAR 1998	Feeder Loading in kVAR 2003	kW Losses 1998	kW Losses 2003	Heaviest Loaded Conductor 1998	Heaviest Loaded Conductor 2003	Maximum Voltage Drop (120 Volt Base) Reg. 1998	Unreg. 1998	Reg. 2003	Unreg. 2003
Springer Mountain	71 - North	2,235	2,477	5,914	6,339	0	210	65	78	45%	49%	--	4.0	--	5.1
	72 - South	841	932	2,304	2,457	1	75	6	7	18%	19%	--	0.4	--	0.5
St. Johns	171 - SRP Plant	171	193	741	788	-10	12	3	3	8%	9%	--	1.3	--	1.4
	172 - Town & Vortac	531	600	1,373	1,455	327	366	8	9	25%	26%	--	1.3	--	1.3
	173 - North	605	684	1,747	1,940	-142	-46	9	11	33%	35%	--	1.0	--	1.1
	174 - Concho	143	162	394	418	86	98	0	0	5%	5%	--	0.1	--	0.2
Stevens	141 - Reserve	613	746	865	980	0	54	21	27	19%	22%	5.1	7.8	5.9	8.9
	142 - Glenwood	466	535	629	693	93	127	28	33	11%	12%	7.5	9.4	7.4	8.2
Wagon Wheel	151 - Show Low Lake	93	149	211	315	58	110	0	0	7%	10%	--	0.2	--	0.3
	152 - Lakeside	1,392	1,543	2,611	2,914	-154	-3	13	16	23%	26%	--	1.3	--	1.5
	153 - Cibecue	633	825	1,757	2,139	562	-62	196	259	25%	27%	12.6	18.7	11.1	15.8
	154 - Wagon Wheel	808	896	3,168	5,027	576	1,502	23	40	33%	44%	--	1.6	--	1.7

Appendix C - 1

Existing System with Projected Loading

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
11	102	101	A	0	0	0	0	0	640	73	0	3/0 ACSR	0.42	0.42	24.94	0.1	0.1	0.3	14.2
			B	1	1,691	0	11	0	771	107	0					0.1	0.1	0.8	17.2
			C	0	0	0	0	0	967	187	0					0.2	0.2	1.0	21.7
102	104	103	A	4	466	0	10	0	105	25	0	#4 ACSR	0.06	0.48	24.94	0.0	0.1	0.0	5.1
			B	0	0	0	0	0	68	8	0					0.0	0.1	0.0	3.2
			C	0	0	0	0	0	63	19	0					0.0	0.2	0.0	3.1
104	106	105	A	0	0	64	0	50	50	9	0	#4 ACSR	0.24	0.72	24.94	0.0	0.1	0.0	2.4
			B	0	0	86	0	68	68	8	0					0.0	0.2	0.0	3.2
			C	3	159	76	3	60	63	19	0					0.0	0.2	0.0	3.1
104	108	107	A	29	536	0	45	0	45	14	0	#4 ACSR	0.29	0.77	24.94	0.0	0.1	0.0	2.2
			B	0	0	0	0	0	0	0	0					0.0	0.1	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.2	0.0	0.0
102	176	113	A	4	363	15	8	12	534	47	0	3/0 ACSR	2.66	3.08	24.94	0.3	0.4	0.9	11.8
			B	1	111	15	1	12	692	96	0					0.8	1.0	4.3	15.4
			C	1	111	15	1	12	903	167	0					1.0	1.1	5.6	20.3
176	114	175	A	0	0	0	0	0	513	42	110	3/0 ACSR	0.02	3.10	24.94	0.0	0.4	0.0	11.4
			B	0	0	0	0	0	675	92	109					0.0	1.0	0.0	15.1
			C	0	0	0	0	0	885	157	108					0.0	1.1	0.0	20.0
114	262	165	A	0	0	0	0	0	513	152	0	3/0 ACSR	0.12	3.21	24.94	0.0	0.4	0.0	11.8
			B	0	0	0	0	0	674	201	0					0.0	1.0	0.2	15.6
			C	0	0	0	0	0	885	265	0					0.0	1.2	0.2	20.5
262	166	261	A	0	0	0	0	0	513	152	0	3/0 ACSR	0.02	3.23	24.94	0.0	0.4	0.0	11.8
			B	0	0	0	0	0	674	201	0					0.0	1.0	0.0	15.6
			C	0	0	0	0	0	884	265	0					0.0	1.2	0.0	20.5

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
166	~~169~~	167	A	0	0	0	0	0	248	75	0	#4 ACSR	0.42	3.65	24.94	0.1	0.6	0.3	12.3
			B	9	766	0	27	0	308	93	0					0.2	1.2	0.4	15.3
			C	0	0	0	0	0	246	72	0					0.1	1.3	0.3	12.2
168	~~170~~	169	A	11	370	291	16	230	247	75	0	#4 ACSR	0.89	4.54	24.94	0.3	0.9	0.5	12.3
			B	14	385	329	20	259	281	85	0					0.3	1.6	0.7	14.0
			C	8	305	291	11	230	246	72	0					0.3	1.6	0.6	12.2
170	172	171	A	1	139	0	1	0	1	0	0	4_4-3 AWAC	0.58	5.12	24.94	0.0	0.9	-0.1	0.1
			B	1	139	0	1	0	1	0	0					0.0	1.6	0.0	0.1
			C	1	139	0	1	0	1	0	0					0.0	1.6	0.1	0.1
170	174	173	C	1	437	0	3	0	3	-1	0	#4 ACSR	2.28	6.82	24.94	0.0	1.6	0.0	0.2
166	248	249	A	0	0	0	0	0	265	77	0	3/0 ACSR	0.07	3.30	24.94	0.0	0.4	0.0	6.1
			B	0	0	0	0	0	366	107	0					0.0	1.1	0.0	8.5
			C	0	0	0	0	0	638	193	0					0.0	1.2	0.1	14.8
248	256	255	A	1	1	27	0	21	265	77	0	3/0 ACSR	1.13	4.43	24.94	0.1	0.5	-0.1	6.1
			B	19	867	27	50	21	366	107	0					0.2	1.3	0.6	8.5
			C	17	835	27	44	21	638	193	0					0.4	1.6	1.4	14.8
256	258	257	A	4	883	19	18	15	33	10	0	#2 ACSR	0.27	4.69	24.94	0.0	0.5	0.0	1.3
			B	7	455	19	15	15	30	9	0					0.0	1.3	0.0	1.2
			C	27	861	38	64	30	94	29	0					0.0	1.6	0.0	3.7
256	178	177	A	0	0	0	0	0	211	62	0	3/0 ACSR	0.08	4.50	24.94	0.0	0.5	0.0	4.9
			B	0	0	0	0	0	265	78	0					0.0	1.3	0.0	6.2
			C	0	0	0	0	0	478	143	0					0.0	1.6	0.1	11.1

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
178	226	225	A	147	375	15	137	12	149	44	0	#4 ACSR	1.68	6.18	24.94	0.2	0.7	0.0	7.4
			B	2	702	15	9	12	80	22	0					0.2	1.5	0.1	3.9
			C	140	525	23	176	18	195	59	0					0.3	1.8	0.5	9.8
226	180	179	B	53	413	0	59	0	59	18	0	#4 ACSR	0.59	6.77	24.94	0.0	1.5	0.0	2.9
178	182	181	A	0	0	0	0	0	62	18	0	3/0 ACSR	0.16	4.66	24.94	0.0	0.5	0.0	1.4
			B	1	2,926	0	17	0	186	56	0					0.0	1.3	0.0	4.3
			C	4	96	0	3	0	282	85	0					0.0	1.6	0.0	6.6
182	184	183	A	1	1	16	0	12	12	4	0	#4 ACSR	0.23	4.89	24.94	0.0	0.5	0.0	0.6
			B	25	248	48	20	38	58	18	0					0.0	1.3	0.0	2.9
			C	7	486	16	15	12	183	55	0					0.1	1.7	0.1	9.1
184	186	185	C	125	418	32	129	25	155	47	0	#4 ACSR	1.73	6.62	24.94	0.3	1.9	0.3	7.8
182	260	259	A	3	1,172	39	19	31	50	14	0	3/0 ACSR	0.74	5.40	24.94	0.0	0.5	-0.1	1.1
			B	33	366	95	35	75	110	33	0					0.0	1.4	0.0	2.6
			C	29	226	96	21	76	97	29	0					0.0	1.6	0.1	2.3
114	264	263	A	0	0	0	0	0	0	0	0	#2 ACSR	0.02	3.12	24.94	0.0	0.4	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	1.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	1.1	0.0	0.0

Feeder Data: (Dom. Customers = 734 at an average of 464 kWh/Month) (Measured Demand = 1,735 kW) (Losses = 20 kW) (Total Loading = 2,378 kW)

12 - Alchesay Whiteriver & Hawley

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
9012	2	1	A	0	0	0	0	0	40	18	0	3/0 ACSR	0.15	0.15	24.94	0.0	0.0	0.0	1.0
			B	0	0	0	0	0	90	40	0					0.0	0.0	0.0	2.2
			C	0	0	0	0	0	76	25	0					0.0	0.0	0.0	1.8
2	4	3	A	0	0	0	0	0	0	-1	0	1/0 ACSR	0.78	0.93	24.94	0.0	0.0	-0.1	0.0
			B	0	0	0	0	0	50	22	0					0.0	0.1	0.0	1.6
			C	0	0	0	0	0	30	4	0					0.0	0.0	0.1	0.9
4	6	5	B	0	0	0	0	0	50	23	0	#2 ACSR	1.06	1.99	24.94	0.1	0.1	-0.1	2.0
			C	0	0	0	0	0	30	5	0					0.0	0.0	0.2	1.1
6	8	7	B	0	0	0	0	0	50	24	0	#2 ACSR	7.47	9.46	24.94	0.5	0.6	-1.0	2.0
			C	0	0	0	0	0	30	6	0					0.1	0.2	1.2	1.1
8	10	9	C	4	673	0	15	0	15	8	0	#4 ACSR	2.13	11.59	24.94	0.0	0.2	0.0	0.8
8	12	11	B	8	417	5	15	4	51	32	0	#2 ACSR	0.62	10.07	24.94	0.0	0.7	-0.1	2.2
			C	2	6	7	0	6	14	6	0					0.0	0.2	0.1	0.6
12	14	13	B	1	49	0	0	0	31	20	0	#2 ACSR	0.23	10.30	24.94	0.0	0.7	0.0	1.4
			C	0	0	0	0	0	8	3	0					0.0	0.2	0.0	0.3
14	30	15	B	7	543	0	18	0	31	19	0	#2 ACSR	1.02	11.33	24.94	0.0	0.7	-0.2	1.4
			C	5	110	0	3	0	8	3	0					0.0	0.2	0.2	0.3
30	16	29	B	5	345	5	10	4	13	8	0	#2 ACSR	0.96	12.28	24.94	0.0	0.7	-0.1	0.6
			C	1	1	5	0	4	4	2	0					0.0	0.2	0.2	0.2
2	18	17	A	0	0	0	0	0	40	19	0	3/0 ACSR	0.76	0.91	24.94	0.0	0.0	-0.1	1.0
			B	0	0	0	0	0	41	18	0					0.0	0.0	0.0	1.0
			C	0	0	0	0	0	45	22	0					0.0	0.0	0.1	1.1

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
18	32	31	A	0	0	0	0	0	40	20	0	3/0 ACSR	5.48	6.38	24.94	0.1	0.1	-0.6	1.0
			B	0	0	0	0	0	41	19	0					0.1	0.1	0.1	1.0
			C	0	0	0	0	0	45	23	0					0.1	0.2	0.6	1.1
32	36	35	A	0	0	0	0	0	40	28	0	3/0 ACSR	0.05	6.43	24.94	0.0	0.2	0.0	1.1
			B	0	0	0	0	0	40	27	0					0.0	0.1	0.0	1.1
			C	0	0	0	0	0	45	31	0					0.0	0.2	0.0	1.2
36	20	19	A	2	2	49	0	40	40	28	0	3/0 ACSR	0.16	6.60	24.94	0.0	0.2	0.0	1.1
			B	2	2	49	0	40	40	28	0					0.0	0.2	0.0	1.1
			C	3	207	49	4	40	45	31	0					0.0	0.2	0.0	1.2
36	38	37	B	0	0	0	0	0	0	0	0	#8 Cu	0.39	6.82	24.94	0.0	0.1	0.0	0.0

Feeder Data: (Dom. Customers = 40 at an average of 320 kWh/Month) (Measured Demands = 170 kW) (Losses = 0 kW) (Total Loading = 206 kW)

131 - Alpine Town

Projected System and Loading

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
131	1402	1401	A	2	255	0	3	0	458	18	0	#4 ACSR	0.36	0.36	24.94	0.2	0.2	0.7	21.7
			B	15	313	0	16	0	149	18	0					0.0	0.0	0.0	7.1
			C	54	527	0	68	0	376	56	0					0.2	0.2	0.6	17.9
1402	1404	1403	A	4	497	0	10	0	221	35	0	#4 ACSR	0.20	0.56	24.94	0.1	0.3	0.1	10.6
			B	5	1,183	21	25	15	40	7	0					0.0	0.0	0.0	1.9
			C	5	334	21	8	15	23	4	0					0.0	0.2	0.0	1.1
1404	1406	1405	A	18	851	34	43	24	211	33	0	#6A CWC o	0.16	0.71	24.94	0.0	0.3	0.1	10.1
1406	1408	1407	A	106	583	8	137	6	143	21	0	#6A CWC o	4.28	4.99	24.94	0.5	0.8	0.5	6.9
1402	1410	1409	A	1	230	2	2	1	234	-17	0	#4 ACSR	1.06	1.42	24.94	0.3	0.5	0.4	11.1
			B	20	345	13	21	9	93	9	0					0.1	0.1	0.1	4.4
			C	39	827	2	77	1	284	40	0					0.4	0.6	0.9	13.6
1410	1412	1411	A	2	164	10	2	7	20	1	0	#4 ACSR	1.57	2.99	24.94	0.0	0.5	-0.1	1.0
			B	32	328	10	29	7	36	4	0					0.0	0.2	0.0	1.7
			C	27	317	10	24	7	32	4	0					0.0	0.6	0.1	1.5
1412	1414	1413	A	5	469	0	11	0	11	1	0	#6A CWC o	1.24	4.23	24.94	0.0	0.5	0.0	0.5
1410	1416	1415	A	0	0	0	0	0	210	-17	0	#4 ACSR	0.70	2.12	24.94	0.2	0.6	0.2	10.0
			B	0	0	0	0	0	27	1	0					0.0	0.1	0.0	1.3
			C	4	756	0	14	0	173	23	0					0.2	0.8	0.3	8.3
1416	1418	1417	C	28	314	0	25	0	25	4	0	#6A CWC o	0.68	2.80	24.94	0.0	0.8	0.0	1.2
1416	1420	1419	A	0	0	0	0	0	210	-17	0	#4 ACSR	0.30	2.43	24.94	0.1	0.7	0.1	10.0
			B	0	0	0	0	0	27	2	0					0.0	0.1	0.0	1.3
			C	1	172	0	1	0	133	18	0					0.1	0.9	0.1	6.4

Projected System and Loading

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1420	1422	1421	C	38	582	0	55	0	55	9	0	#4 ACSR	1.19	3.62	24.94	0.0	0.9	0.0	2.6
1420	1424	1423	A	0	0	0	0	0	210	-16	0	#4 ACSR	1.50	3.93	24.94	0.4	1.1	0.5	10.0
			B	22	339	0	22	0	27	2	0					-0.1	0.1	0.0	1.3
			C	8	464	0	15	0	77	9	0					0.2	1.1	0.3	3.7
1424	1426	1425	C	62	414	0	62	0	62	9	0	#4 ACSR	1.92	5.85	24.94	0.1	1.2	0.0	3.0
1424	1428	1427	A	0	0	0	0	0	209	-15	0	#4 ACSR	0.45	4.38	24.94	0.1	1.2	0.2	10.0
			B	8	133	0	5	0	5	0	0					0.0	0.0	0.0	0.2
			C	0	0	0	0	0	0	-1	0					0.0	1.1	0.0	0.0
1428	1430	1429	A	12	435	0	18	0	209	-15	0	#4 ACSR	0.72	5.10	24.94	0.2	1.4	0.3	10.0
1430	1432	1431	A	69	249	0	43	0	43	6	0	#4 ACSR	1.55	6.65	24.94	0.1	1.4	0.0	2.1
1430	1434	1433	A	8	226	1	8	1	147	-24	0	#4 ACSR	2.65	7.75	24.94	0.5	1.8	0.6	7.1
1434	1436	1435	A	0	0	0	0	0	138	-23	0	#4 ACSR	1.74	9.49	24.94	0.3	2.1	0.4	6.7
1436	1438	1437	A	0	0	0	0	0	137	-21	0	3#8 ALW	2.59	12.08	24.94	1.1	3.2	1.3	8.5
1438	1440	1439	A	1	899	0	6	0	78	-9	0	3#8 ALW	2.95	15.03	24.94	0.7	3.9	0.4	4.8
1440	1442	1441	A	0	0	0	0	0	72	-7	0	4_4-3 AWAC	5.58	20.61	24.94	0.6	4.5	0.4	3.5
1442	1444	1443	A	0	0	0	0	0	71	-2	0	4_4-3 AWAC	3.40	24.01	24.94	0.4	4.9	0.2	3.5
1444	1446	1445	A	3	502	26	8	19	71	1	0	1/0 AL UG	0.35	24.36	24.94	0.0	4.9	0.0	2.0
1446	1448	1447	A	0	0	0	0	0	44	1	0	4_4-3 AWAC	0.13	24.49	24.94	0.0	4.9	0.0	2.1

Projected System and Loading

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1448	1450	1449	A	6	606	38	16	28	44	1	0	3#8 ALW	7.64	32.13	24.94	0.9	5.8	0.3	2.7
1438	1452	1451	A	0	0	0	0	0	59	-10	0	#4 ACSR	0.91	12.99	24.94	0.1	3.3	0.0	2.9
1452	1454	1453	A	0	0	0	0	0	59	-10	0	3#8 ALW	1.37	14.36	24.94	0.3	3.6	0.1	3.7
1454	1456	1455	A	5	532	0	12	0	59	-8	0	#4 ACSR	0.39	14.75	24.94	0.0	3.6	0.0	2.9
1456	1458	1457	A	15	323	0	16	0	46	-10	0	#6A CWC o	9.72	24.47	24.94	0.5	4.1	0.2	2.3
1458	1460	1459	A	17	586	0	30	0	30	-4	0	#6A CWC o	10.59	35.06	24.94	0.2	4.3	0.1	1.5

Feeder Data: (Dom. Customers = 642 at an average of 469 kWh/Month) (Measured Demands = 196 kW) (Losses = 9 kW) (Total Loading = 983 kW)

132 - ALPINE GEORGE'S LAKE ?

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
132	1492	1491	C	0	0	0	0	0	13	1	0	1/0 ACSR	0.20	0.20	24.94	0.0	0.0	0.0	0.4
1492	1494	1493	C	2	1,488	0	13	0	13	1	0	3#8 ALW	1.00	1.20	24.94	0.0	0.0	0.0	0.8

Feeder Data: (Dom. Customers = 2 at an average of 1,488 kWh/Month) (Measured Demands = 0 kW) (Losses = 0 kW) (Total Loading = 13 kW)

161 - Concho Town

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
161	2102	2101	A	1	273	0	2	0	45	5	0	4/0 AL UG	0.09	0.09	24.94	0.0	0.0	0.0	0.8
			B	1	273	0	2	0	22	-5	0					0.0	0.0	0.0	0.4
			C	1	273	0	2	0	56	7	0					0.0	0.0	0.0	1.0
2102	2106	2105	A	34	373	7	29	4	43	6	0	#6 Cu	1.05	1.13	24.94	0.0	0.0	-0.1	2.4
			B	1	1	7	0	4	20	-5	0					0.0	0.0	0.0	1.1
			C	10	680	7	21	4	54	8	0					0.1	0.1	0.1	3.0
2106	2108	2107	C	11	571	0	19	0	19	5	0	#6 Cu	1.15	2.28	24.94	0.0	0.1	0.0	1.1
2106	2110	2109	A	6	149	8	4	5	9	-5	0	#6 Cu	4.53	5.66	24.94	0.0	0.1	-0.4	0.6
			B	2	713	8	7	5	16	-5	0					0.1	0.1	0.0	0.9
			C	1	810	8	4	5	10	-5	0					0.0	0.1	0.4	0.6
2110	2112	2111	B	2	291	0	3	0	3	0	0	#4 ACSR	1.53	7.19	24.94	0.0	0.1	0.0	0.2
2110	2114	2113	A	1	88	1	1	1	1	-2	0	#6 Cu	2.40	8.06	24.94	0.0	0.1	-0.2	0.1
			B	1	1	1	0	1	1	-3	0					0.0	0.1	0.0	0.2
			C	1	1	1	0	1	1	-3	0					0.0	0.1	0.2	0.1
2102	2104	2103	A	0	0	0	0	0	0	0	0	#6 Cu	0.02	0.10	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0

Feeder Data: (Dom. Customers = 73 at an average of 416 kWh/Month) (Measured Demands = 47 kW) (Losses = 0 kW) (Total Loading = 122 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
162	2002	2001	A	0	0	0	0	0	305	-8	0	4/0 AL UG	0.05	0.05	24.94	0.0	0.0	0.0	5.3
			B	0	0	0	0	0	222	-35	0					0.0	0.0	0.0	3.9
			C	0	0	0	0	0	266	-22	0					0.0	0.0	0.0	4.6
2002	2004	2003	A	0	0	0	0	0	305	-7	0	#6 Cu	0.68	0.72	24.94	0.3	0.3	0.6	16.8
			B	0	0	0	0	0	222	-34	0					0.2	0.2	0.3	12.4
			C	0	0	0	0	0	266	-22	0					0.2	0.2	0.5	14.7
2004	2006	2005	A	0	0	0	0	0	0	-22	0	1/0 AL UG	0.57	1.30	24.94	0.0	0.3	0.0	0.6
			B	0	0	0	0	0	1	-22	0					0.0	0.2	0.0	0.6
			C	1	1,475	0	9	0	9	-20	0					0.0	0.2	0.0	0.6
2006	2008	2007	A	0	0	0	0	0	0	-8	0	1/0 AL UG	0.59	1.89	24.94	0.0	0.3	0.0	0.2
			B	0	0	0	0	0	0	-8	0					0.0	0.2	0.0	0.2
			C	0	0	0	0	0	0	-8	0					0.0	0.2	0.0	0.2
2006	2010	2009	A	0	0	0	0	0	0	-7	0	1/0 AL UG	0.55	1.85	24.94	0.0	0.3	0.0	0.2
			B	3	43	0	1	0	1	-7	0					0.0	0.2	0.0	0.2
			C	0	0	0	0	0	0	-7	0					0.0	0.2	0.0	0.2
2004	2012	2011	A	0	0	0	0	0	304	16	0	#6 Cu	0.99	1.71	24.94	0.4	0.6	0.8	16.8
			B	0	0	0	0	0	221	-11	0					0.2	0.4	0.4	12.2
			C	0	0	0	0	0	256	-1	0					0.3	0.5	0.7	14.2
2012	2014	2013	A	0	0	0	0	0	0	-24	0	1/0 AL UG	1.85	3.56	24.94	0.0	0.6	0.0	0.6
			B	2	349	0	5	0	5	-22	0					0.0	0.4	0.0	0.6
			C	0	0	0	0	0	0	-24	0					0.0	0.5	0.0	0.6
2012	2016	2015	A	1	1	201	0	153	303	40	0	#6 Cu	2.07	3.78	24.94	0.8	1.5	1.7	17.0
			B	1	1	201	0	153	216	12	0					0.5	0.9	0.8	12.0
			C	2	295	201	4	153	256	23	0					0.7	1.2	1.5	14.2

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2016	2018	2017	A	0	0	0	0	0	149	2	0	#6 Cu	1.04	4.82	24.94	0.2	1.7	0.2	8.3
			B	0	0	0	0	0	62	-25	0					0.0	0.9	0.0	3.7
			C	0	0	0	0	0	97	-15	0					0.1	1.4	0.2	5.5
2018	2020	2019	A	8	514	0	17	0	149	3	0	#6 Cu	4.82	9.64	24.94	0.9	2.6	0.6	8.3
			B	1	254	0	2	0	62	-24	0					0.2	1.1	0.1	3.7
			C	5	890	0	20	0	97	-14	0					0.6	1.9	0.8	5.5
2020	2022	2021	A	14	439	0	21	0	21	-1	0	#6 Cu	5.44	15.08	24.94	0.0	2.6	-0.4	1.2
			B	0	0	0	0	0	0	-7	0					0.0	1.1	0.0	0.4
			C	23	504	0	34	0	35	3	0					0.1	2.1	0.5	1.9
2020	2024	2023	A	2	360	0	5	0	111	4	0	#6 Cu	0.69	10.33	24.94	0.1	2.7	0.0	6.2
			B	0	0	0	0	0	60	-12	0					0.0	1.1	0.0	3.4
			C	0	0	0	0	0	41	-17	0					0.0	1.9	0.1	2.5
2024	2026	2025	A	0	0	0	0	0	85	9	0	#6 Cu	0.06	10.39	24.94	0.0	2.7	0.0	4.8
			B	0	0	0	0	0	46	-3	0					0.0	1.1	0.0	2.6
			C	0	0	0	0	0	29	-8	0					0.0	1.9	0.0	1.7
2026	2028	2027	A	5	494	0	12	0	12	0	0	#6 Cu	3.29	13.68	24.94	0.0	2.7	-0.3	0.7
			B	1	362	0	3	0	3	-3	0					0.0	1.1	0.0	0.2
			C	1	362	0	3	0	3	-3	0					0.0	2.0	0.3	0.2
2026	2030	2029	A	7	993	15	28	12	73	9	0	#6 Cu	2.10	12.49	24.94	0.2	2.8	-0.1	4.1
			B	3	263	12	5	9	43	0	0					0.1	1.2	0.0	2.4
			C	1	15	4	0	3	26	-5	0					0.1	2.0	0.2	1.5
2030	2032	2031	A	0	0	0	0	0	0	-3	0	#4 ACSR	2.49	14.98	24.94	0.0	2.8	-0.2	0.1
			B	0	0	0	0	0	0	-3	0					0.0	1.2	0.0	0.2
			C	0	0	0	0	0	0	-3	0					0.0	2.0	0.2	0.1

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2030	2034	2033	A	4	614	23	13	18	34	4	0	#6 Cu	3.40	15.89	24.94	0.1	3.0	-0.2	1.9
			B	2	1,427	17	16	13	29	2	0					0.1	1.3	0.0	1.6
			C	1	35	23	0	18	22	-1	0					0.1	2.1	0.3	1.3
2034	2036	2035	A	1	1	5	0	4	4	0	0	#6 Cu	0.97	16.85	24.94	0.0	3.0	-0.1	0.2
			B	1	60	0	1	0	1	-1	0					0.0	1.3	0.0	0.1
			C	1	1	5	0	4	4	0	0					0.0	2.1	0.1	0.2
2034	2038	2037	A	0	0	0	0	0	0	0	0	#4 ACSR	0.06	15.95	24.94	0.0	3.0	0.0	0.0
			B	1	33	0	0	0	0	0	0					0.0	1.3	0.0	0.0
			C	0	0	0	0	0	0	-1	0					0.0	2.1	0.0	0.1
2038	2040	2039	C	1	50	0	0	0	0	-1	0	#4 ACSR	1.50	17.45	24.94	0.0	2.1	0.0	0.1
2024	2042	2041	A	0	0	0	0	0	21	-5	0	#6 Cu	2.80	13.13	24.94	0.1	2.7	-0.2	1.2
			B	0	0	0	0	0	14	-8	0					0.0	1.1	0.0	0.9
			C	0	0	0	0	0	13	-8	0					0.0	2.0	0.2	0.8
2042	2044	2043	A	17	311	5	18	4	21	-2	0	#6 Cu	6.92	20.05	24.94	0.1	2.8	-0.5	1.2
			B	6	443	2	12	2	14	-5	0					0.0	1.2	0.0	0.8
			C	4	276	7	6	6	12	-5	0					0.1	2.1	0.5	0.7
2002	2092	2091	A	0	0	0	0	0	0	0	0	#6 Cu	0.02	0.06	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
2092	2094	2093	A	0	0	0	0	0	0	0	0	#6 Cu	0.02	0.08	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2094	2096	2095	A	0	0	0	0	0	0	0	0	#6 Cu	0.02	0.10	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
2096	2098	2097	A	0	0	0	0	0	0	0	0	#6 Cu	0.02	0.12	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
2096	2088	2089	A	0	0	0	0	0	0	0	0	#2 ACSR	0.02	0.12	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0

Feeder Data: (Dom. Customers = 120 at an average of 464 kWh/Month) (Measured Demands = 723 kW) (Losses = 10 kW) (Total Loading = 793 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
163	6502	6501	A	0	0	0	0	0	605	19	0	4/0 AL UG	0.08	0.08	24.94	0.0	0.0	0.0	10.5
			B	0	0	0	0	0	1,216	224	0					0.0	0.0	0.4	21.5
			C	0	0	0	0	0	512	26	0					0.0	0.0	0.0	8.9
6502	6504	6503	A	15	726	1	37	1	605	20	0	#2 ACSR	3.44	3.52	24.94	2.1	2.1	9.2	22.3
			B	1	118	1	1	1	1,215	226	0					4.1	4.1	35.7	45.4
			C	6	600	8	17	6	512	27	0					0.5	0.5	2.0	18.8
6504	6506	6505	A	1	1	1	0	1	1	-3	0	#2 ACSR	2.09	5.61	24.94	0.0	2.1	-0.2	0.1
			B	1	1	1	0	1	1	-3	0					0.0	4.1	0.0	0.1
			C	1	1	1	0	1	1	-3	0					0.0	0.5	0.2	0.1
6504	6508	6507	A	4	620	37	14	31	557	22	0	#2 ACSR	0.51	4.02	24.94	0.3	2.4	1.3	20.8
			B	2	266	37	4	31	1,177	206	0					0.6	4.7	5.2	45.4
			C	10	536	49	22	40	485	28	0					0.1	0.5	0.2	17.9
6508	6510	6509	A	0	0	0	0	0	512	18	0	#2 AL UG	0.11	4.13	24.94	0.0	2.4	0.2	19.2
			B	0	0	0	0	0	1,138	199	0					0.1	4.8	1.3	44.1
			C	0	0	0	0	0	423	22	0					0.0	0.5	0.0	15.6
6510	6512	6511	A	22	729	26	49	21	512	19	0	#2 ACSR	0.10	4.23	24.94	0.1	2.5	0.2	19.2
			B	1	1	26	0	21	1,136	199	0					0.1	5.0	1.0	44.1
			C	5	754	26	19	21	423	23	0					0.0	0.5	0.0	15.6
6512	6514	6513	A	36	564	8	58	7	65	3	0	#4 ACSR	3.45	7.68	24.94	0.2	2.6	0.1	3.1
6512	6516	6515	A	41	537	51	62	42	376	9	0	#2 ACSR	0.48	4.71	24.94	0.2	2.7	0.5	14.1
			B	1	1	21	0	17	1,114	196	0					0.6	5.5	4.7	43.3
			C	42	631	21	73	17	383	19	0					0.0	0.5	0.0	14.1

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
6516	6518	6517	A	17	294	12	18	10	80	7	0	#2 ACSR	0.38	5.09	24.94	0.0	2.7	0.0	3.0
			B	1	1	12	0	10	10	0	0					0.0	5.5	0.0	0.4
			C	5	428	12	11	10	170	16	0					0.1	0.6	0.1	6.3
6518	6520	6519	A	22	771	1	52	0	52	5	0	#4 ACSR	0.38	5.47	24.94	0.0	2.7	0.0	2.5
			B	1	1	1	0	0	0	0	0					0.0	5.5	0.0	0.0
			C	76	782	1	148	0	148	15	0					0.0	0.6	0.1	7.1
6516	6522	6521	A	0	0	0	0	0	192	-8	0	1/0 ACSR	1.04	5.76	24.94	0.3	2.9	0.3	5.6
			B	0	0	0	0	0	1,082	192	0					0.9	6.4	6.5	33.1
			C	13	639	0	30	0	123	-6	0					-0.3	0.2	-0.2	3.6
6522	6524	6523	A	0	0	0	0	0	191	-7	0	1/0 ACSR	0.87	6.62	24.94	0.2	3.2	0.3	5.6
			B	0	0	0	0	0	1,076	185	0					0.7	7.1	5.4	33.1
			C	0	0	0	0	0	93	-8	0					-0.3	-0.1	-0.1	2.7
6524	6526	6525	A	2	678	0	9	0	9	0	0	#4 ACSR	0.84	7.46	24.94	0.0	3.2	-0.1	0.4
			B	0	0	0	0	0	0	-1	0					0.0	7.1	0.0	0.1
			C	1	1,282	0	9	0	9	0	0					0.0	-0.1	0.1	0.4
6524	6528	6527	A	3	722	0	13	0	182	-5	0	1/0 ACSR	2.45	9.07	24.94	0.7	3.9	0.7	5.4
			B	0	0	0	0	0	1,070	180	0					2.0	9.1	15.2	33.1
			C	4	686	0	15	0	84	-6	0					-0.8	-0.9	-0.3	2.4
6528	6530	6529	A	0	0	0	0	0	0	-1	0	#4 ACSR	1.06	10.13	24.94	0.0	3.9	-0.1	0.1
			B	0	0	0	0	0	0	-1	0					0.0	9.1	0.0	0.1
			C	0	0	0	0	0	0	-1	0					0.0	-0.9	0.1	0.1
6528	6532	6531	A	11	401	0	18	0	169	-1	0	1/0 ACSR	4.20	13.27	24.94	1.2	5.0	1.2	5.0
			B	0	0	0	0	0	1,055	165	0					3.4	12.4	26.0	33.1
			C	16	731	0	39	0	70	-3	0					-1.5	-2.5	-0.2	2.0

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
6532	6560	6559	A	12	410	0	19	0	19	-1	0	#4 ACSR	2.84	16.11	24.94	0.0	5.1	0.0	1.0	
6532	6558	6557	A	1	383	0	3	0	130	4	0	1/0 ACSR	1.19	14.46	24.94	0.3	5.3	0.3	3.9	
			B	0	0	0	0	0	1,029	136	0					0.9	13.4	7.4	33.1	
			C	0	0	0	0	0	30	-2	0					-0.5	-2.9	0.0	0.9	
6558	6536	6535	A	19	517	0	33	0	33	0	0	1/0 ACSR	2.43	16.89	24.94	0.5	5.8	-0.1	1.0	
			B	4	505	0	11	0	1,022	128	0					2.0	15.4	15.8	33.1	
			C	17	520	0	30	0	30	0	0					-1.0	-3.9	0.1	0.9	
• 6536	10001	10001	B	0	0	0	0	0	994	109	0	Regulator	0.00	16.89	24.94	-11.1	4.3	0.0	75.4	15.4
10001	6538	6537	B	89	583	0	132	0	994	109	0	1/0 ACSR	4.90	21.80	24.94	3.2	7.5	21.8	29.8	
6538	6540	6539	B	57	471	0	73	0	841	75	0	#4 ACSR	0.89	22.68	24.94	1.1	8.6	7.1	42.4	
• 6540	6542	6541	B	0	0	0	0	0	761	64	0	#6 Cu	0.68	23.37	24.94	0.8	9.3	4.9	45.1	20.4
6542	6544	6543	B	114	574	0	163	0	266	22	0	#6A CWC o	4.40	27.76	24.94	1.2	10.6	2.2	13.6	
6544	6546	6545	B	0	0	0	0	0	0	0	0	#6A CWC o	0.10	27.86	24.94	0.0	10.6	0.0	0.0	21.7
6544	6548	6547	B	71	538	0	100	0	100	8	0	#6A CWC o	3.20	30.96	24.94	0.2	10.8	0.2	5.2	21.9
6542	6550	6549	B	108	737	0	194	0	490	40	0	#6A CWC o	2.24	25.61	24.94	1.3	10.7	4.6	25.1	
6550	6552	6551	B A	84	615	22	131	18	150	11	0	#6A CWC o	5.35	30.96	24.94	0.7	11.4	0.8	7.8	22.5
6550	6554	6553	B C	33	769	0	71	0	142	8	0	#6A CWC o	2.50	28.12	24.94	0.4	11.1	0.4	7.3	
6554	6556	6555	B C	3	2,129	45	33	37	70	3	0	#4 ACSR	5.48	33.60	24.94	0.5	11.5	0.2	3.7	22.6

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
6558	**6534**	6533	A B	77	463	0	94	0	94	5	0	#2 ACSR	4.58	19.04	24.94	0.2	5.5	0.2	3.6
6502	6598	6597	A	0	0	0	0	0	0	0	0	#2 ACSR	0.02	0.10	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0

Feeder Data: (Dom. Customers = 1,050 at an average of 604 kWh/Month) (Measured Demands = 419 kW) (Losses = 183 kW) (Total Loading = 2,333 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
15	2702	2701	A	0	0	0	0	0	1,531	466	0	4/0 AL UG	0.05	0.05	24.94	0.0	0.0	0.2	27.8
			B	0	0	0	0	0	1,981	942	0					0.0	0.0	0.6	38.1
			C	0	0	0	0	0	1,608	548	0					0.0	0.0	0.3	29.5
2702	2710	2709	A	26	398	0	35	0	1,530	467	0	3/0 ACSR	0.57	0.62	24.94	0.4	0.4	3.7	35.3
			B	6	371	18	12	16	1,981	942	0					0.7	0.7	8.0	48.4
			C	9	365	18	16	16	1,608	549	0					0.3	0.4	2.6	37.5
2710	2736	2735	A	1	1	1,309	0	1,146	1,150	293	925	#2 ACSR	0.40	1.02	24.94	0.4	0.8	3.6	43.8
			B	1	1	1,309	0	1,146	1,150	297	920					0.4	1.1	3.6	43.9
			C	1	1	1,309	0	1,146	1,150	292	926					0.4	0.8	3.4	43.7
2710	2740	2739	A	1	1	3	0	2	341	134	109	#2 ACSR	0.29	0.91	24.94	0.1	0.5	0.2	13.5
			B	2	431	3	6	2	794	606	108					0.3	1.0	2.1	36.9
			C	1	392	3	3	2	424	217	109					0.1	0.4	0.2	17.5
2740	2744	2743	A	4	2,921	130	58	114	339	241	0	#2 ACSR	1.02	1.93	24.94	0.3	0.8	1.0	15.3
			B	6	1,376	134	39	118	783	704	0					1.2	2.2	7.9	39.0
			C	2	203	101	3	88	418	321	0					0.3	0.8	0.9	19.4
2744	2754	2753	A	1	583	0	5	0	22	19	0	#4 ACSR	1.41	3.34	24.94	0.0	0.8	-0.2	1.4
			B	0	0	0	0	0	310	317	0					1.0	3.1	3.3	21.3
			C	3	290	0	6	0	106	108	0					0.1	0.9	0.2	7.2
2754	2756	2755	B	87	431	0	106	0	106	111	0	#2 ACSR	1.17	4.51	24.94	0.1	3.2	0.1	5.8
2754	2758	2757	A	0	0	0	0	0	17	16	0	#4 ACSR	0.45	3.78	24.94	0.0	0.7	0.0	1.1
			B	0	0	0	0	0	200	206	0					0.2	3.3	0.4	13.9
			C	3	293	0	6	0	100	103	0					0.1	1.0	0.1	6.8

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2758	2760	2759	A	2	60	18	1	16	17	17	0	#6A CWC o	1.24	5.02	24.94	0.0	0.7	-0.1	1.1
			B	16	353	18	22	16	200	207	0					0.5	3.8	1.1	14.0
			C	36	499	18	56	16	93	97	0					0.1	1.0	0.1	6.4
2760	2762	2761	B	3	341	0	7	0	161	167	0	#6A CWC o	0.15	5.17	24.94	0.1	3.9	0.1	11.3
			C	12	422	0	21	0	21	22	0					0.0	1.0	0.0	1.5
2762	2764	2763	B	125	446	0	153	0	154	160	0	#6A CWC o	3.11	8.28	24.94	0.5	4.4	0.9	10.8
2744	2746	2745	A	0	0	0	0	0	144	41	0	#4 ACSR	0.08	2.01	24.94	0.0	0.8	0.0	7.1
			B	0	0	0	0	0	309	217	0					0.0	2.2	0.1	18.2
			C	0	0	0	0	0	220	116	0					0.0	0.8	0.0	11.8
2746	404	403	A	0	0	0	0	0	144	41	109	#2 ACSR	0.96	2.97	24.94	0.1	0.9	0.0	5.5
			B	0	0	0	0	0	309	217	106					0.4	2.6	1.1	14.1
			C	0	0	0	0	0	220	116	109					0.2	1.0	0.3	9.2
404	416	415	A	6	272	52	9	46	55	57	0	#2 ACSR	0.67	3.64	24.94	0.0	0.9	0.0	2.9
			B	11	247	153	13	134	181	191	0					0.2	2.8	0.3	9.9
			C	18	775	25	48	22	80	83	0					0.0	1.0	0.1	4.3
416	420	419	B	17	545	0	34	0	34	36	0	#2 ACSR	0.37	4.01	24.94	0.0	2.8	-0.1	1.8
			C	3	485	0	10	0	10	10	0					0.0	1.0	0.1	0.5
404	430	429	A	19	640	54	42	47	90	93	0	#2 ACSR	1.55	4.52	24.94	0.1	1.0	-0.1	4.8
			B	44	378	33	52	29	127	132	0					0.2	2.9	0.3	6.9
			C	7	370	33	13	29	140	142	0					0.3	1.3	0.5	7.4
430	436	435	B	25	562	0	46	0	46	49	0	#6A CWC o	0.39	4.91	24.94	0.0	2.9	0.0	3.2
			C	9	366	16	16	14	97	98	0					0.1	1.3	0.1	6.6
436	438	437	C	30	514	0	49	0	66	67	0	#4 ACSR	0.47	5.38	24.94	0.0	1.4	0.0	4.5

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
438	458	457	C	4	738	0	17	0	17	15	0	#2 ACSR	3.14	8.52	24.94	0.0	1.4	0.0	0.8

Feeder Data: (Dom. Customers = 541 at an average of 479 kWh/Month) (Measured Demands = 4,760 kW) (Losses = 47 kW) (Total Loading = 5,120 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
16	2802	2801	A	0	0	0	0	0	1,110	14	0	4/0 AL UG	0.04	0.04	24.94	0.0	0.0	0.1	19.3
			B	0	0	0	0	0	1,410	112	0					0.0	0.0	0.2	24.6
			C	0	0	0	0	0	1,781	244	0					0.0	0.0	0.4	31.2
2802	2804	2803	A	0	0	0	0	0	0	0	0	3/0 ACSR	0.03	0.07	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
2802	2806	2805	A	2	1,255	2	13	1	1,110	15	0	3/0 ACSR	0.25	0.29	24.94	0.1	0.1	0.5	24.5
			B	1	430	2	3	1	1,410	113	0					0.1	0.2	1.6	31.2
			C	1	430	2	3	1	1,781	244	0					0.2	0.2	1.9	39.6
2806	2832	2831	A	1	1	27	0	19	939	75	110	3/0 ACSR	0.25	0.54	24.94	0.1	0.1	0.4	20.8
			B	1	1	27	0	19	1,077	118	110					0.1	0.3	0.9	23.9
			C	1	1	27	0	19	1,358	218	110					0.1	0.3	1.2	30.4
2832	2834	2833	B	1	1	7	0	5	5	1	0	#4 ACSR	0.69	1.23	24.94	0.0	0.3	-0.1	0.2
			C	387	405	7	321	5	326	110	0					0.2	0.5	0.5	16.3
2832	2888	2887	A	0	0	25	0	17	920	178	0	3/0 ACSR	0.11	0.65	24.94	0.0	0.2	0.3	20.7
			B	1	769	25	5	17	1,052	221	0					0.1	0.3	0.4	23.8
			C	0	0	25	0	17	1,012	210	0					0.0	0.4	0.3	22.9
2888	2890	2889	A	1	1	113	0	76	76	24	0	1/0 AL UG	0.10	0.75	24.94	0.0	0.2	0.0	2.2
			B	1	1	113	0	76	76	24	0					0.0	0.3	0.0	2.2
			C	1	1	113	0	76	76	24	0					0.0	0.4	0.0	2.2
2888	2836	2835	A	19	1,109	55	53	37	827	148	0	#2 ACSR	0.37	1.03	24.94	0.3	0.4	1.5	30.9
			B	1	1	37	0	25	955	189	0					0.3	0.7	2.3	35.8
			C	15	449	37	20	25	919	179	0					0.3	0.6	1.8	34.5

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2836	2840	2839	A	16	831	84	36	57	199	65	0	#4 ACSR	0.53	1.55	24.94	0.1	0.6	0.1	10.0
			B	51	568	78	65	52	203	66	0					0.1	0.8	0.2	10.1
			C	15	434	75	20	51	209	69	0					0.1	0.8	0.3	10.4
2840	2842	2841	A	6	570	9	14	6	20	6	0	#4 ACSR	0.46	2.01	24.94	0.0	0.6	0.0	1.0
			B	3	527	11	8	7	15	5	0					0.0	0.8	0.0	0.8
			C	17	418	11	21	7	28	9	0					0.0	0.8	0.0	1.4
2840	2850	2849	A	25	586	70	37	47	84	28	0	#4 ACSR	0.56	2.11	24.94	0.1	0.6	0.0	4.2
			B	9	698	71	21	48	69	23	0					0.0	0.8	0.0	3.5
			C	20	362	102	20	69	90	30	0					0.1	0.9	0.1	4.5
2840	2844	2843	A	1	116	1	1	1	2	0	0	#4 ACSR	0.21	1.75	24.94	0.0	0.6	0.0	0.1
			B	1	1	1	0	1	1	0	0					0.0	0.8	0.0	0.0
			C	20	357	1	20	1	21	7	0					0.0	0.8	0.0	1.1
2836	2808	2807	A	0	0	0	0	0	536	52	0	#2 ACSR	0.31	1.33	24.94	0.1	0.6	0.5	19.8
			B	0	0	0	0	0	725	113	0					0.2	0.9	1.1	27.1
			C	1	402	0	3	0	663	95	0					0.2	0.8	0.8	24.7
2808	2810	2809	B	20	446	0	25	0	25	8	0	#4 ACSR	0.31	1.64	24.94	0.0	0.9	0.0	1.2
2808	2812	2811	A	2	340	0	4	0	98	32	0	#4 ACSR	0.12	1.45	24.94	0.0	0.6	0.0	4.9
			B	22	399	0	24	0	170	56	0					0.0	0.9	0.0	8.5
			C	0	0	0	0	0	88	29	0					0.0	0.8	0.0	4.4
2812	2884	2883	A	1	387	17	2	12	14	4	0	#4 ACSR	0.07	1.52	24.94	0.0	0.6	0.0	0.7
			B	19	311	17	17	12	55	18	0					0.0	0.9	0.0	2.7
			C	9	363	17	12	12	24	8	0					0.0	0.8	0.0	1.2

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2884	2886 *	2885	A	0	0	0	0	0	0	0	0	#4 ACSR	0.30	1.82	24.94	0.0	0.6	0.0	0.0
			B	25	389	0	26	0	26	8	0					0.0	0.9	0.0	1.3
			C	0	0	0	0	0	0	0	0					0.0	0.8	0.0	0.0
2812	2862	2861	A	27	457	71	32	48	80	26	0	#4 ACSR	0.42	1.87	24.94	0.0	0.6	0.0	4.0
			B	22	469	95	28	64	92	30	0					0.0	0.9	0.0	4.6
			C	13	400	71	17	48	65	21	0					0.0	0.8	0.1	3.2
2808	2852	2851	A	0	0	0	0	0	437	20	0	#2 ACSR	0.32	1.65	24.94	0.1	0.7	0.3	16.2
			B	3	631	0	9	0	529	49	0					0.2	1.0	0.6	19.7
			C	3	963	0	14	0	572	65	0					0.1	0.9	0.6	21.3
2852	2892	2891	A	10	676	0	22	0	81	27	0	#6A CWC o	0.43	2.09	24.94	0.0	0.7	0.0	4.1
			B	18	539	0	27	0	96	31	0					0.1	1.1	0.0	4.8
			C	37	481	0	42	0	134	43	0					0.1	1.0	0.1	6.7
2892	2854	2853	A	5	338	76	8	51	59	20	0	#4 ACSR	0.25	2.33	24.94	0.0	0.7	0.0	3.0
			B	4	1,800	51	29	34	63	21	0					0.0	1.1	0.0	3.2
			C	9	480	51	15	34	50	16	0					0.0	1.0	0.0	2.5
2892	2838	2837	B	2	472	0	5	0	5	2	0	#4 ACSR	0.09	2.18	24.94	0.0	1.1	0.0	0.3
			C	0	0	0	0	0	42	13	0					0.0	1.0	0.0	2.1
2838	2846	2845	B	0	0	0	0	0	0	0	0	#6A CWC o	0.16	2.33	24.94	0.0	1.1	0.0	0.0
			C	7	570	0	15	0	15	5	0					0.0	1.0	0.0	0.8
2846	2848	2847	C	0	0	0	0	0	0	0	0	#6A CWC o	0.26	2.59	24.94	0.0	1.0	0.0	0.0
2838	2882	2881	C	26	391	0	27	0	27	9	0	#6A CWC o	0.52	2.70	24.94	0.0	1.0	0.0	1.3

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2852	2858	2857	A	0	0	0	0	0	356	-7	0	3/0 ACSR	0.06	1.71	24.94	0.0	0.7	0.0	7.9
			B	0	0	0	0	0	423	14	0					0.0	1.0	0.0	9.4
			C	0	0	0	0	0	423	17	0					0.0	0.9	0.0	9.4
2858	2866	2865	A	3	1,169	14	16	9	322	-15	108	#3/0 ACSR	3.33	5.04	24.94	0.4	1.1	0.5	7.1
			B	1	1	14	0	9	353	-6	108					0.3	1.3	1.3	7.8
			C	4	605	14	11	9	266	-34	108					0.1	1.1	0.6	6.0
2866	2868	2867	A	49	589	119	64	81	296	88	0	#3/0 ACSR	0.12	5.17	24.94	0.0	1.1	0.0	6.9
			B	48	468	119	52	81	342	102	0					0.0	1.4	0.0	8.0
			C	67	543	119	79	81	245	71	0					0.0	1.1	0.0	5.7
2868	2870	2869	B	53	542	0	64	0	64	21	0	#4 ACSR	0.66	5.83	24.94	0.0	1.4	0.0	3.2
2868	2872	2871	A	29	643	5	45	3	151	39	0	#3/0 ACSR	2.31	7.48	24.94	0.2	1.3	-0.3	3.5
			B	57	504	5	64	3	146	36	0					0.1	1.4	0.3	3.4
			C	31	476	5	36	3	85	17	0					0.0	1.1	0.2	1.9
2872	2874	2873	A	60	479	28	64	19	103	26	0	3/0 ACSR	1.75	9.23	24.94	0.1	1.4	-0.2	2.4
			B	8	500	28	15	19	79	17	0					0.0	1.5	0.0	1.8
			C	1	1	28	0	19	46	7	0					0.0	1.1	0.2	1.0
2874	2876	2875	A	4	161	6	3	4	7	1	0	#6A CWC o	1.06	10.29	24.94	0.0	1.4	-0.2	0.4
			B	21	354	6	21	4	25	7	0					0.0	1.5	0.2	1.2
2874	2878	2877	A	5	263	12	6	8	13	-1	0	3/0 ACSR	4.32	13.54	24.94	0.0	1.4	-0.5	0.3
			B	8	415	12	12	8	20	1	0					0.0	1.5	0.0	0.5
			C	7	708	12	18	8	27	3	0					0.0	1.2	0.5	0.6
2858	2860	2859	A	25	459	6	30	4	34	9	0	#6A CWC o	2.46	4.18	24.94	0.0	0.7	-0.2	1.7
			B	62	481	6	66	4	70	21	0					0.2	1.2	0.1	3.5
			C	149	496	6	153	4	157	50	0					0.3	1.2	0.5	7.9

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2806	**2816**	2815	A	6	223	152	6	102	156	-66	0	#2 ACSR	0.47	0.75	24.94	0.0	0.1	0.0	6.2
			B	8	482	201	14	136	328	-8	0					0.2	0.3	0.4	12.1
			C	7	662	174	17	118	416	22	0					0.1	0.3	0.5	15.3
2816	**2818**	2817	A	0	0	0	0	0	48	-102	0	#4 ACSR	0.15	0.91	24.94	0.0	0.1	0.0	5.3
			B	3	325	28	5	19	178	-58	0					0.0	0.4	0.1	8.9
			C	3	325	28	5	19	281	-23	0					0.1	0.4	0.1	13.3
2818	**2820**	2819	A	0	0	0	0	0	48	-102	110	#4 ACSR	2.30	3.21	24.94	-0.1	0.0	-0.1	5.3
			B	2	307	0	4	0	154	-66	109					0.5	0.8	0.9	7.9
			C	30	417	0	32	0	257	-31	108					0.7	1.0	1.5	12.3
2820	**2822**	2821	A	1	178	0	1	0	48	11	0	#4 ACSR	1.08	4.29	24.94	0.0	0.0	-0.1	2.3
			B	24	426	0	27	0	149	44	0					0.3	1.1	0.4	7.4
			C	0	0	0	0	0	224	69	0					0.3	1.4	0.6	11.1
2822	**2824**	2823	C	26	443	0	30	0	30	8	0	#8 Cu	2.86	7.15	24.94	0.1	1.5	0.0	2.3
2822	**2826**	2825	A	0	0	0	0	0	47	12	0	#4 ACSR	0.66	4.95	24.94	0.0	0.0	-0.1	2.3
			B	28	382	0	28	0	122	37	0					0.1	1.2	0.1	6.1
			C	25	396	0	26	0	193	62	0					0.2	1.6	0.3	9.7
2826	**2828**	2827	B	29	343	0	26	0	26	8	0	#6A CWC o	0.76	5.71	24.94	0.0	1.2	0.0	1.3
2826	**2830**	2829	A	1	1	70	0	47	47	13	0	#4 ACSR	2.30	7.25	24.94	0.1	0.1	-0.2	2.3
			B	20	371	70	21	47	68	20	0					0.2	1.4	0.1	3.4
			C	120	471	70	119	47	167	54	0					0.4	1.9	0.6	8.4

Feeder Data: (Dom. Customers = 1,928 at an average of 472 kWh/Month) (Measured Demands = 2,978 kW) (Losses = 28 kW) (Total Loading = 4,301 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
139	2960	2959	C	4	828	0	29	0	29	12	0	#4 ACSR	0.34	0.34	24.94	0.0	0.0	0.0	1.5
2960	2910	2909	C	0	0	0	0	0	0	0	0	#4 ACSR	0.34	0.68	24.94	0.0	0.0	0.0	0.0

Feeder Data: (Dom. Customers = 4 at an average of 828 kWh/Month) (Measured Demands = 0 kW) (Losses = 0 kW) (Total Loading = 29 k

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Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
51	5102	5101	B	2	38	0	1	0	111	39	0	#6A CWC o	3.96	3.96	24.94	0.7	0.7	0.6	5.6
5102	5104	5103	B	0	0	0	0	0	110	42	0	9D CWC	0.20	4.16	24.94	0.1	0.8	0.1	9.2
5104	5106	5105	B	0	0	0	0	0	62	26	0	9D CWC	2.68	6.84	24.94	0.5	1.3	0.3	5.3
5106	5108	5107	B	18	1,190	0	62	0	62	29	0	1/0 AL UG	0.11	6.95	24.94	0.0	1.3	0.0	1.9
5104	5110	5109	B	0	0	0	0	0	48	16	0	#2 ACSR	3.62	7.77	24.94	0.2	1.0	0.1	1.9
5110	5112	5111	B	4	854	0	17	0	48	20	0	1/0 AL UG	0.03	7.81	24.94	0.0	1.0	0.0	1.4
5112	5114	5113	B	6	807	0	21	0	21	10	0	1/0 AL UG	0.06	7.87	24.94	0.0	1.0	0.0	0.6
5112	5116	5115	B	7	279	0	9	0	9	2	0	1/0 AL UG	0.16	7.96	24.94	0.0	1.0	0.0	0.3

Feeder Data: (Dom. Customers = 37 at an average of 857 kWh/Month) (Measured Demands = 0 kW) (Losses = 1 kW) (Total Loading = 111 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
61	8552	8551	A	0	0	0	0	0	136	36	0	#6 Cu	4.46	4.46	24.94	0.8	0.8	0.6	7.8
			B	0	0	0	0	0	176	50	0					1.1	1.1	1.5	10.1
			C	1	94	0	1	0	148	40	0					0.8	0.8	1.2	8.4
8552	8554	8553	A	0	0	0	0	0	0	-5	0	#4 ACSR	4.02	8.48	24.94	0.0	0.8	-0.4	0.2
			B	14	582	0	39	0	39	9	0					0.1	1.2	0.1	1.9
			C	0	0	0	0	0	0	-5	0					0.0	0.8	0.3	0.2
8552	8556	8555	A	1	115	0	1	0	136	46	0	#6 Cu	3.74	8.20	24.94	0.7	1.6	0.5	8.0
			B	0	0	0	0	0	135	45	0					0.7	1.8	0.8	7.9
			C	2	543	0	10	0	145	49	0					0.7	1.5	1.1	8.5
8556	8558	8557	A	0	0	0	0	0	134	49	0	#6 Cu	0.02	8.22	24.94	0.0	1.6	0.0	8.0
			B	0	0	0	0	0	134	49	0					0.0	1.8	0.0	8.0
			C	0	0	0	0	0	135	49	0					0.0	1.5	0.0	8.0
8558	8560	8559	A	1	1	124	0	134	134	50	0	#2 ACSR	1.02	9.24	24.94	0.1	1.7	0.0	5.3
			B	1	1	124	0	134	134	49	0					0.1	1.9	0.1	5.3
			C	1	1	124	0	134	135	49	0					0.1	1.6	0.2	5.3
8558	8562	8561	A	0	0	0	0	0	0	0	0	#6 Cu	0.02	8.24	24.94	0.0	1.6	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	1.8	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	1.5	0.0	0.0

Feeder Data: (Dom. Customers = 21 at an average of 449 kWh/Month) (Measured Demands = 372 kW) (Losses = 6 kW) (Total Loading = 460 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
62	802	801	A	1	237	0	2	0	1,150	345	0	477 ACSR	7.70	7.70	24.94	2.6	2.6	14.7	11.9	
			B	1	237	0	2	0	1,027	292	0					1.2	1.2	3.5	10.5	
			C	2	819	0	13	0	854	222	0					0.9	0.9	4.2	8.7	
802	804	803	A	0	0	0	0	0	1,133	322	0	477 ACSR	0.66	8.36	24.94	0.2	2.8	1.3	11.9	
			B	1	157	0	2	0	1,021	280	0					0.1	1.3	0.3	10.5	
			C	0	0	0	0	0	837	216	0					0.1	1.0	0.4	8.6	
804	806	805	C	39	423	8	61	8	69	22	0	#6 Cu	1.10	9.46	24.94	0.1	1.1	0.0	4.0	
804	808	807	A	1	1	2	0	2	1,131	320	0	477 ACSR	2.62	10.98	24.94	0.9	3.7	5.4	11.9	
			B	1	1	2	0	2	1,019	278	0					0.4	1.6	0.9	10.5	
			C	1	1	2	0	2	767	194	0					0.2	1.2	1.1	7.9	
808	810	809	B	20	348	0	30	0	30	8	0	#6 Cu	1.91	12.89	24.94	0.0	1.7	0.0	1.8	
808	878	877	A	0	0	0	0	0	1,124	312	0	4/0 ACSR	0.51	11.49	24.94	0.3	4.0	1.9	23.4	
			B	0	0	0	0	0	986	265	0					0.1	1.8	0.7	20.1	
			C	0	0	0	0	0	764	194	0					0.1	1.4	0.6	15.5	
878	812	811	A	0	0	0	0	0	1,122	309	0	477 ACSR	1.01	12.50	24.94	0.3	4.3	2.0	11.9	
			B	0	0	0	0	0	985	263	0					0.1	1.9	0.3	10.2	
			C	0	0	0	0	0	764	194	0					0.1	1.5	0.5	7.9	
812	10001	10001	A	0	0	0	0	0	1,120	306	0	Regulator	0.00	12.50	24.94	-2.3	2.0	0.0	79.5	
			B	0	0	0	0	0	985	262	0					0.0	1.9	0.0	68.4	
			C	0	0	0	0	0	763	194	0					0.0	1.5	0.0	52.7	
10001	814	813	A	0	0	0	0	0	1,120	306	0	4/0 ACSR	0.23	12.73	24.94	0.1	2.2	0.8	23.0	4.5
			B	0	0	0	0	0	985	262	0					0.1	2.0	0.3	20.1	
			C	0	0	0	0	0	763	194	0					0.0	1.5	0.2	15.5	

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
814	816	815	A	2	2,213	2	32	2	213	66	0	#4 ACSR	1.94	14.67	24.94	0.6	2.8	0.7	10.7	
			B	3	718	3	16	3	22	5	0					-0.1	1.9	0.0	1.1	
			C	6	319	16	13	16	38	10	0					0.1	1.6	0.2	1.9	
816	818	817	A	53	496	3	91	3	94	31	0	#4 ACSR	0.17	14.84	24.94	0.0	2.8	0.0	4.8	
			B	1	1	3	0	3	3	1	0					0.0	1.9	0.0	0.1	
			C	1	695	3	6	3	9	3	0					0.0	1.6	0.0	0.5	
816	820	819	A	19	858	19	65	20	85	25	0	#4 ACSR	3.11	17.78	24.94	0.3	3.0	0.1	4.3	
814	822	821	A	7	99	3	5	3	8	2	0	#4 ACSR	0.48	13.22	24.94	0.0	2.2	0.0	0.4	
			B	2	210	3	4	3	7	2	0					0.0	2.0	0.0	0.4	
			C	7	468	3	20	3	23	7	0					0.0	1.5	0.0	1.2	
814	824	823	A	0	0	0	0	0	898	238	0	4/0 ACSR	0.34	13.07	24.94	0.1	2.3	0.8	18.4	
			B	6	1,733	0	57	0	955	255	0					0.1	2.1	0.6	19.5	
			C	1	93	0	1	0	702	177	0					0.1	1.6	0.3	14.3	
824	826	825	B	41	449	0	67	0	67	22	0	#6A CWC o	0.60	13.67	24.94	0.0	2.1	0.0	3.4	
824	828	827	A	57	821	92	151	95	897	237	0	4/0 ACSR	1.64	14.71	24.94	0.6	2.9	2.9	18.4	5.2
			B	81	458	31	124	32	831	214	0					0.4	2.5	1.7	17.0	
			C	31	515	10	60	10	701	177	0					0.3	1.9	1.5	14.2	
828	830	829	A	29	586	0	64	0	648	153	0	3/0 ACSR	1.03	15.74	24.94	0.3	3.2	1.1	15.0	5.5
			B	33	691	20	82	21	674	161	0					0.3	2.8	1.1	15.6	
			C	0	0	0	0	0	629	153	0					0.3	2.1	1.1	14.5	
830	832	831	A	0	0	0	0	0	2	-14	0	4_4-3 AWAC	2.95	18.68	24.94	0.0	3.2	-0.4	0.7	
			B	0	0	0	0	0	4	-11	0					0.0	2.8	0.3	0.6	
			C	3	450	0	11	0	15	-7	0					0.0	2.2	0.2	0.8	

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
832	834	833	A	0	0	0	0	0	3	-10	0	#2 ACSR	2.51	21.19	24.94	0.0	3.2	-0.4	0.4	
			B	0	0	0	0	0	4	-7	0					0.0	2.8	0.2	0.3	
			C	0	0	0	0	0	4	-7	0					0.0	2.2	0.2	0.3	
834	836	835	A	1	1	3	0	3	3	-7	0	4_4-3 AWAC	2.60	23.79	24.94	0.0	3.2	-0.4	0.4	5.5
			B	1	1	3	0	3	4	-4	0					0.0	2.8	0.2	0.3	
			C	1	1	3	0	3	4	-4	0					0.0	2.2	0.2	0.3	
836	838	837	A	0	0	0	0	0	0	-5	0	150 kVA SD	0.00	23.79	4.16	-0.2	3.0	0.0	10.5	
			B	0	0	0	0	0	0	-2	0					-0.1	2.7	0.0	3.9	
			C	0	0	0	0	0	0	-2	0					-0.1	2.1	0.0	4.1	
838	840	839	A	0	0	0	0	0	0	-5	0	1/0 AL UG	3.56	27.34	4.16	-0.2	2.8	0.0	0.9	5.1
			B	0	0	0	0	0	0	-2	0					-0.1	2.6	0.0	0.3	
			C	0	0	0	0	0	0	-2	0					0.1	2.2	0.0	0.3	
840	9982	9981	A	0	0	0	0	0	0	-4	0	1/0 AL UG	0.87	28.21	4.16	0.0	2.7	0.0	0.7	
			B	0	0	0	0	0	0	-1	0					0.0	2.6	0.0	0.1	
			C	0	0	0	0	0	0	-1	0					0.0	2.3	0.0	0.1	
9982	9984	9983	C	0	0	0	0	0	0	0	0	1/0 AL UG	0.19	28.40	4.16	0.0	2.3	0.0	0.0	
9982	9988	9987	A	0	0	0	0	0	0	-4	0	1/0 AL UG	1.02	29.23	4.16	0.0	2.7	0.0	0.6	
			B	0	0	0	0	0	0	0	0					0.0	2.6	0.0	0.1	
			C	0	0	0	0	0	0	0	0					0.0	2.3	0.0	0.1	
9988	9990	9989	A	0	0	0	0	0	0	-3	0	1/0 AL UG	0.13	29.36	4.16	0.0	2.7	0.0	0.6	
			B	0	0	0	0	0	0	0	0					0.0	2.6	0.0	0.0	
			C	0	0	0	0	0	0	0	0					0.0	2.3	0.0	0.0	
9990	9992	9991	A	0	0	0	0	0	0	-3	0	1/0 AL UG	0.34	29.70	4.16	0.0	2.7	0.0	0.6	

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
9992	9998	9997	A	0	0	0	0	0	0	-3	0	1/0 AL UG	0.11	29.81	4.16	0.0	2.6	0.0	0.5	
9998	899	899	A	0	0	0	0	0	0	-3	0	1/0 AL UG	0.20	30.01	24.94	0.0	2.6	0.0	0.1	
9992	9996	9995	A	0	0	0	0	0	0	0	0	1/0 AL UG	0.47	30.17	4.16	0.0	2.7	0.0	0.0	
9992	9994	9993	A	0	0	0	0	0	0	0	0	1/0 AL UG	0.37	30.07	4.16	0.0	2.7	0.0	0.0	
9982	9986	9985	A	0	0	0	0	0	0	0	0	1/0 AL UG	0.25	28.46	4.16	0.0	2.7	0.0	0.0	
			B	0	0	0	0	0	0	0	0					0.0	2.6	0.0	0.0	
			C	0	0	0	0	0	0	0	0					0.0	2.3	0.0	0.0	
830	842	841	A	0	0	0	0	0	580	145	0	#1/0 ACSR	3.23	18.97	24.94	1.3	4.4	4.6	17.6	
			B	0	0	0	0	0	566	138	0					1.1	3.8	4.5	17.1	
			C	0	0	0	0	0	613	159	0					1.2	3.4	5.3	18.5	
842	844	843	A	0	0	0	0	0	575	145	0	2/0 AL UG	0.64	19.61	24.94	0.2	4.6	0.8	14.4	6.9
			B	0	0	0	0	0	561	138	0					0.2	4.0	0.8	13.9	
			C	0	0	0	0	0	608	158	0					0.2	3.6	0.9	15.1	
844	10002	10002	A	0	0	0	0	0	575	153	0	Regulator	0.00	19.61	24.94	-3.0	1.6	0.0	40.8	5.8
			B	0	0	0	0	0	560	146	0					-2.3	1.7	0.0	39.6	
			C	0	0	0	0	0	607	166	0					-0.8	2.8	0.0	42.8	
10002	846	845	A	0	0	0	0	0	575	153	0	#1/0 ACSR	1.44	21.06	24.94	0.5	2.1	1.9	17.3	7.4
			B	0	0	0	0	0	560	146	0					0.5	2.2	2.0	16.9	
			C	0	0	0	0	0	607	166	0					0.6	3.4	2.4	18.5	
846	848	847	A	0	0	0	0	0	483	130	0	#1/0 ACSR	1.73	22.78	24.94	0.6	2.7	1.6	14.6	8.0
			B	9	849	2	39	2	522	143	0					0.5	2.7	2.0	15.8	
			C	13	630	7	38	7	550	154	0					0.6	3.9	2.2	16.9	

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
848	850	849	A	1	1	126	0	131	131	43	0	#1/0 ACSR	0.38	23.16	24.94	0.0	2.7	0.0	4.1
			B	1	1	126	0	131	131	43	0					0.0	2.8	0.1	4.1
			C	2	1,548	126	23	131	154	51	0					0.0	4.0	0.1	4.8
848	852	851	A	1	1	63	0	65	350	88	0	#4 ACSR	0.28	23.06	24.94	0.1	2.8	0.3	17.4
			B	1	1	63	0	65	349	87	0					0.1	2.9	0.4	17.4
			C	1	1	63	0	65	349	88	0					0.1	4.1	0.4	17.5
852	854	853	A	2	98	31	2	32	285	66	0	#4 ACSR	0.72	23.78	24.94	0.3	3.1	0.6	14.1
			B	1	1	31	0	32	283	66	0					0.3	3.1	0.7	14.0
			C	1	1	31	0	32	283	66	0					0.3	4.4	0.7	14.2
854	856	855	A	1	1	7	0	7	7	2	0	#4 ACSR	0.13	23.91	24.94	0.0	3.1	0.0	0.4
			B	1	1	7	0	7	7	2	0					0.0	3.1	0.0	0.4
			C	1	1	7	0	7	7	2	0					0.0	4.4	0.0	0.4
854	858	857	A	0	0	0	0	0	242	53	0	#4 ACSR	0.20	23.97	24.94	0.1	3.2	0.1	12.0
			B	0	0	0	0	0	242	53	0					0.1	3.2	0.1	12.0
			C	0	0	0	0	0	242	54	0					0.1	4.4	0.1	12.1
858	860	859	A	1	1	159	0	164	164	54	0	#4 ACSR	0.37	24.35	24.94	0.1	3.3	0.1	8.4
			B	1	1	159	0	164	164	54	0					0.1	3.3	0.1	8.4
			C	1	1	159	0	164	164	54	0					0.1	4.5	0.1	8.5
858	862	861	A	1	1	75	0	78	78	-1	0	1/0 AL UG	2.18	26.15	24.94	0.1	3.3	0.1	2.2 3.6
			B	1	1	75	0	78	78	-1	0					0.1	3.3	0.1	2.2
			C	1	1	75	0	78	78	0	0					0.1	4.5	0.1	2.2
846	864	863	A	1	1	5	0	5	90	23	0	#1/0 ACSR	0.74	21.80	24.94	0.0	2.2	-0.1	2.7
			B	0	0	0	0	0	36	4	0					0.0	2.2	0.1	1.1
			C	1	1	5	0	5	54	11	0					0.0	3.4	0.1	1.6

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
864	866	865	A	1	1	47	0	49	49	16	0	#2 ACSR	0.25	22.05	24.94	0.0	2.2	0.0	1.9
			B	1	1	34	0	35	35	11	0					0.0	2.2	0.0	1.4
			C	1	1	47	0	49	49	16	0					0.0	3.4	0.0	1.9
864	868	867	A	0	0	0	0	0	36	6	0	#1/0 ACSR	0.13	21.93	24.94	0.0	2.2	0.0	1.1
			B	0	0	0	0	0	1	-7	0					0.0	2.2	0.0	0.2
			C	0	0	0	0	0	0	-6	0					0.0	3.4	0.0	0.2
868	870	869	A	0	0	0	0	0	36	6	0	#2 ACSR	0.58	22.51	24.94	0.0	2.2	-0.1	1.4
			B	0	0	0	0	0	1	-6	0					0.0	2.2	0.1	0.2
			C	0	0	0	0	0	0	-6	0					0.0	3.4	0.0	0.2
870	872	871	A	2	2,586	0	37	0	37	11	0	#2 ACSR	0.74	23.25	24.94	0.0	2.2	-0.1	1.4
			B	0	0	0	0	0	0	-1	0					0.0	2.2	0.1	0.0
			C	0	0	0	0	0	0	-1	0					0.0	3.4	0.0	0.0
870	874	873	A	1	1	0	0	0	0	-5	0	#2 ACSR	3.63	26.13	24.94	0.0	2.2	-0.6	0.2 7.5
			B	1	1	0	0	0	0	-5	0					0.0	2.2	0.3	0.2
			C	1	1	0	0	0	0	-4	0					0.0	3.4	0.2	0.2

Feeder Data: (Dom. Customers = 505 at an average of 547 kWh/Month) (Measured Demands = 1,765 kW) (Losses = 84 kW) (Total Loading = 3,031 kW)

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Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
191	2502	2501	A	4	579	0	10	0	504	64	0	1/0 ACSR	0.37	0.37	24.94	0.1	0.1	0.3	14.6
			B	1	359	0	2	0	527	67	0					0.1	0.1	0.4	15.3
			C	1	817	0	5	0	589	61	0					0.1	0.1	0.5	17.0
2502	2504	2503	A	2	535	0	6	0	493	62	0	#6 Cu	0.13	0.49	24.94	0.1	0.2	0.3	27.4
			B	5	236	0	5	0	524	67	0					0.1	0.2	0.4	29.2
			C	1	834	0	5	0	584	60	0					0.1	0.2	0.4	32.4
2504	2506	2505	A	230	485	26	222	17	240	43	0	#4 ACSR	0.65	1.15	24.94	0.1	0.3	0.2	11.5
2504	2508	2507	A	2	2	107	0	71	247	18	0	#6 Cu	1.49	1.98	24.94	0.4	0.6	0.7	13.7
			B	28	848	107	55	71	519	66	0					1.1	1.3	4.1	28.9
			C	84	780	119	131	78	579	59	0					0.9	1.1	3.5	32.1
2508	2510	2509	A	18	779	35	37	23	59	10	0	#2 ACSR	0.41	2.39	24.94	0.0	0.6	0.0	2.2
			B	19	706	35	35	23	224	39	0					0.1	1.4	0.1	8.4
			C	18	677	35	32	23	118	19	0					0.0	1.1	0.0	4.4
2510	2512	2511	B	73	595	114	91	75	166	29	0	#2 ACSR	1.60	3.99	24.94	0.2	1.6	0.0	6.3
			C	47	542	9	57	6	63	10	0					0.0	1.1	0.2	2.4
2508	2514	2513	A	1	423	0	3	0	116	-3	0	#6 Cu	0.15	2.13	24.94	0.0	0.6	0.0	6.4
			B	0	0	0	0	0	165	5	0					0.0	1.3	0.0	9.2
			C	0	0	0	0	0	248	2	0					0.0	1.1	0.1	13.8
2514	2516	2515	B	10	1,096	5	33	3	37	6	0	#6 Cu	0.22	2.35	24.94	0.0	1.3	0.0	2.1
			C	56	572	5	69	3	72	13	0					0.0	1.1	0.0	4.1
2514	2518	2517	A	0	0	0	0	0	114	-4	0	#6 Cu	0.15	2.28	24.94	0.0	0.6	0.0	6.3
			B	0	0	0	0	0	128	-1	0					0.0	1.3	0.0	7.1
			C	0	0	0	0	0	175	-11	0					0.0	1.1	0.1	9.8

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2518	2520	2519	A	0	0	0	0	0	114	-4	0	#2 ACSR	0.55	2.83	24.94	0.0	0.7	0.0	4.2
			B	0	0	0	0	0	128	-1	0					0.1	1.4	0.1	4.8
			C	0	0	0	0	0	175	-11	0					0.1	1.2	0.2	6.5
2520	2522	2521	A	0	0	0	0	0	65	4	0	#2 ACSR	1.20	4.03	24.94	0.0	0.7	-0.1	2.4
			B	0	0	0	0	0	65	4	0					0.1	1.5	0.1	2.4
			C	0	0	0	0	0	128	-3	0					0.1	1.3	0.2	4.8
2522	2530	2529	A	0	0	90	0	60	65	5	0	1/0 AL UG	0.01	4.04	24.94	0.0	0.7	0.0	1.8
			B	0	0	90	0	60	65	5	0					0.0	1.5	0.0	1.8
			C	0	0	90	0	60	128	-2	0					0.0	1.3	0.0	3.5
2530	2532	2531	A	1	1	8	0	5	5	-6	0	1/0 AL UG	0.58	4.62	24.94	0.0	0.7	0.0	0.2
			B	1	1	8	0	5	5	-6	0					0.0	1.5	0.0	0.2
			C	3	2,301	8	29	5	40	-6	0					0.0	1.3	0.0	1.1
2532	2534	2533	C	1	1,165	0	6	0	6	-5	0	1/0 AL UG	0.50	5.12	24.94	0.0	1.3	0.0	0.2
2530	2536	2535	C	5	732	13	15	8	28	-7	0	1/0 AL UG	0.66	4.70	24.94	0.0	1.3	0.0	0.8
2536	2538	2537	C	0	0	0	0	0	5	-3	0	1/0 AL UG	0.13	4.83	24.94	0.0	1.3	0.0	0.1
2538	2540	2539	C	1	807	0	5	0	5	-1	0	#2 ACSR	1.87	6.70	24.94	0.0	1.3	0.0	0.2
2520	2524	2523	A	0	0	0	0	0	49	-6	0	#2 ACSR	0.86	3.69	24.94	0.0	0.7	-0.1	1.8
			B	0	0	0	0	0	63	-4	0					0.0	1.5	0.0	2.4
			C	0	0	0	0	0	47	-7	0					0.0	1.2	0.1	1.8
2524	2526	2525	A	19	616	20	31	13	44	-3	0	1/0 AL UG	0.86	4.55	24.94	0.0	0.7	0.0	1.2
			B	24	735	20	43	13	56	-1	0					0.0	1.5	0.0	1.5
			C	24	378	20	24	13	37	-4	0					0.0	1.2	0.0	1.0

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2524	2528	2527	A	1	1	8	0	5	5	-2	0	#2 ACSR	2.66	6.35	24.94	0.0	0.7	-0.3	0.2
			B	2	2	10	0	7	7	-2	0					0.0	1.5	0.0	0.3
			C	9	68	10	3	7	10	-2	0					0.0	1.2	0.2	0.4

Feeder Data: (Dom. Customers = 691 at an average of 595 kWh/Month) (Measured Demands = 989 kW) (Losses = 12 kW) (Total Loading = 1,620 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
192	2602	2601	A	2	426	0	5	0	967	66	0	1/0 ACSR	0.32	0.32	24.94	0.1	0.1	0.9	27.9
			B	0	0	0	0	0	1,636	225	0					0.4	0.4	4.5	47.5
			C	11	637	0	22	0	1,688	247	0					0.3	0.3	2.9	49.1
2602	2604	2603	B	167	514	0	170	0	170	39	0	#4 ACSR	1.26	1.58	24.94	0.2	0.5	0.2	8.3
2602	2606	2605	A	3	393	0	6	0	961	65	0	#6 Cu	0.79	1.11	24.94	0.8	1.0	6.2	53.2
			B	7	956	0	23	0	1,461	184	0					1.6	2.0	18.4	81.4
			C	21	906	3	46	2	1,663	238	0					1.6	1.8	19.5	92.8
2606	2608	2607	B	121	565	0	136	0	136	31	0	#4 ACSR	1.38	2.49	24.94	0.1	2.1	0.2	6.7
2606	2610	2609	A	0	0	0	0	0	949	63	0	#6 Cu	0.11	1.22	24.94	0.1	1.1	0.8	52.8
			B	0	0	0	0	0	1,284	142	0					0.2	2.2	2.0	72.3
			C	2	1,568	0	15	0	1,596	217	0					0.2	2.0	2.7	90.1
2610	2612	2611	A	8	687	14	19	9	28	6	0	#2 ACSR	0.23	1.45	24.94	0.0	1.1	0.0	1.1
			B	1	1	14	0	9	45	10	0					0.0	2.2	0.0	1.7
			C	2	817	14	8	9	90	21	0					0.0	2.1	0.0	3.4
2612	2614	2613	B	41	382	0	37	0	36	8	0	#2 ACSR	0.27	1.72	24.94	0.0	2.2	0.0	1.4
			C	75	455	0	72	0	72	17	0					0.0	2.1	0.0	2.8
2610	2616	2615	A	13	369	0	15	0	921	56	0	#6 Cu	0.32	1.54	24.94	0.3	1.4	2.3	51.3
			B	16	638	0	28	0	1,236	132	0					0.6	2.8	5.4	69.7
			C	11	719	0	24	0	1,489	191	0					0.6	2.6	6.8	84.1
2616	2618	2617	A	0	0	0	0	0	640	11	107	#6 Cu	0.35	1.89	24.94	0.2	1.6	1.2	35.7
			B	3	228	0	4	0	918	79	105					0.5	3.2	3.3	51.9
			C	13	303	0	12	0	1,103	127	105					0.5	3.1	4.0	62.5
2618	2620	2619	A	169	353	0	123	0	123	28	0	#4 ACSR	1.04	2.93	24.94	0.1	1.7	0.1	6.0

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2618	2622	2621	A	1	345	0	2	0	515	90	0	#6 Cu	0.58	2.46	24.94	0.3	2.0	1.3	29.2
			B	1	1,943	0	10	0	911	183	0					0.8	4.0	5.9	52.5
			C	0	0	0	0	0	1,087	227	0					0.8	3.9	6.6	62.7
2622	2670	2623	A	53	300	0	37	0	371	86	0	#4 ACSR	0.88	3.34	24.94	0.4	2.3	0.8	18.2
			B	181	378	0	140	0	213	48	0					0.2	4.2	0.3	10.7
			C	111	398	0	92	0	551	129	0					0.7	4.6	2.9	27.6
2670	2624	2669	A	3	908	13	13	8	21	5	0	#4 ACSR	0.25	3.59	24.94	0.0	2.3	0.0	1.0
			B	1	1	13	0	8	8	2	0					0.0	4.2	0.0	0.4
			C	4	1,117	13	18	8	406	96	0					0.2	4.8	0.5	20.4
2624	2626	2625	C	374	525	0	378	0	378	89	0	#2 ACSR	1.03	4.62	24.94	0.2	5.0	0.6	14.8
2670	2672	2671	A	1	1	17	0	11	312	73	0	#2 ACSR	0.66	4.00	24.94	0.2	2.5	0.4	12.0
			B	2	47	17	1	11	65	14	0					0.0	4.1	0.0	2.5
			C	2	2,969	17	26	11	50	11	0					0.0	4.7	0.1	2.0
2672	2674	2673	B	3	316	0	5	0	5	1	0	#4 ACSR	0.09	4.09	24.94	0.0	4.1	0.0	0.2
2672	2676	2675	A	0	0	0	0	0	301	70	0	#2 ACSR	0.07	4.07	24.94	0.0	2.6	0.0	11.6
			B	2	1,627	0	15	0	48	11	0					0.0	4.1	0.0	1.9
			C	0	0	0	0	0	13	3	0					0.0	4.7	0.0	0.5
2676	2678	2677	A	8	474	19	14	13	26	6	0	#2 ACSR	0.23	4.30	24.94	0.0	2.6	0.0	1.0
			B	11	576	19	20	13	33	7	0					0.0	4.1	0.0	1.3
			C	1	1	19	0	13	13	3	0					0.0	4.7	0.0	0.5
2676	2680	2679	A	191	593	83	219	54	274	64	0	#4 ACSR	1.09	5.16	24.94	0.3	2.8	0.5	13.6

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Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2622	2628	2627	A	0	0	0	0	0	142	4	0	#6 Cu	0.03	2.50	24.94	0.0	2.0	0.0	7.9
			B	0	0	0	0	0	682	131	0					0.0	4.1	0.2	39.5
			C	0	0	0	0	0	529	95	0					0.0	3.9	0.1	30.6
2628	2630	2629	A	62	432	8	58	5	64	-2	0	1/0 AL UG	1.41	3.91	24.94	0.0	2.0	0.0	1.8
			B	52	410	0	48	0	48	-6	0					0.0	4.1	0.0	1.3
			C	11	153	0	6	0	6	-16	0					0.0	3.9	0.0	0.5
2628	2632	2631	A	0	0	0	0	0	78	7	0	#6 Cu	0.42	2.91	24.94	0.0	2.0	0.0	4.4
			B	38	361	0	33	0	634	137	0					0.4	4.5	2.1	36.9
			C	0	0	0	0	0	523	111	0					0.2	4.2	0.9	30.4
2632	2634	2633	A	13	580	0	22	0	22	-4	0	1/0 AL UG	0.72	3.63	24.94	0.0	2.0	0.0	0.6
			B	22	715	0	39	0	39	1	0					0.0	4.5	0.0	1.1
			C	10	663	0	21	0	21	-4	0					0.0	4.2	0.0	0.6
2632	2636	2635	A	0	0	42	0	27	56	11	0	#6 Cu	0.14	3.05	24.94	0.0	2.0	0.0	3.2
			B	14	309	42	13	27	561	128	0					0.1	4.6	0.6	32.9
			C	0	0	42	0	27	501	114	0					0.1	4.2	0.3	29.3
2636	2638	2637	B	37	515	86	44	56	100	23	0	#6A CWC o	1.19	4.24	24.94	0.2	4.8	-0.1	5.0
			C	15	1,022	86	40	56	97	22	0					0.1	4.4	0.2	4.9
2636	2640	2639	A	0	0	0	0	0	28	5	0	#6 Cu	0.08	3.12	24.94	0.0	2.0	0.0	1.6
			B	2	1,044	211	10	138	419	96	0					0.1	4.7	0.2	24.6
			C	2	992	211	10	138	377	86	0					0.0	4.3	0.1	22.0
2640	2642	2641	A	1	1	7	0	4	4	0	0	#4 ACSR	0.53	3.66	24.94	0.0	2.0	0.0	0.2
			B	3	867	7	12	4	16	3	0					0.0	4.7	0.0	0.8
			C	3	542	7	8	4	12	2	0					0.0	4.3	0.0	0.6

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2640	2644	2643	A	2	374	0	4	0	24	4	0	#6 Cu	0.37	3.50	24.94	0.0	2.0	0.0	1.4
			B	3	203	0	3	0	255	57	0					0.2	4.8	0.3	14.9
			C	32	298	0	24	0	216	48	0					0.1	4.4	0.1	12.7
2644	2648	2647	B	148	415	92	125	60	186	43	0	#4 ACSR	1.72	5.21	24.94	0.4	5.2	0.2	9.4
			C	98	437	87	89	57	146	33	0					0.2	4.6	0.4	7.3
2644	2650	2649	A	5	469	15	10	10	20	4	0	#6 Cu	1.03	4.52	24.94	0.0	2.0	-0.1	1.1
			B	16	989	37	41	24	65	14	0					0.1	4.9	0.0	3.8
			C	19	648	22	32	14	46	10	0					0.0	4.4	0.1	2.7
2616	2652	2651	A	0	0	0	0	0	264	41	0	#6 Cu	0.51	2.05	24.94	0.2	1.6	0.3	14.9
			B	0	0	0	0	0	285	45	0					0.2	3.0	0.5	16.3
			C	1	514	0	3	0	354	56	0					0.2	2.9	0.7	20.2
2652	2654	2653	A	0	0	0	0	0	263	42	0	#6 Cu	2.42	4.47	24.94	0.8	2.4	1.4	14.9
			B	0	0	0	0	0	285	45	0					1.0	3.9	2.2	16.3
			C	10	928	0	28	0	351	55	0					1.0	3.9	2.9	20.0
2654	2656	2655	C	3	677	0	10	0	10	0	0	#2 ACSR	2.06	6.53	24.94	0.0	3.9	0.0	0.4
2654	2658	2657	A	0	0	0	0	0	262	44	0	#6 Cu	3.35	7.81	24.94	1.1	3.5	2.0	14.9
			B	6	144	0	4	0	283	47	0					1.3	5.2	2.9	16.3
			C	0	0	0	0	0	310	50	0					1.3	5.3	3.5	17.8
2658	2660	2659	A	1	1	357	0	233	236	50	0	#4 ACSR	5.85	13.66	24.94	1.9	5.4	3.1	11.7
			B	1	1	357	0	233	237	50	0					1.9	7.1	3.7	11.9
			C	10	88	357	4	233	241	51	0					1.9	7.2	4.1	12.1
2658	2662	2661	A	2	197	3	2	2	24	-3	0	#4 ACSR	0.75	8.56	24.94	0.0	3.5	-0.1	1.2
			B	5	123	3	3	2	39	0	0					0.0	5.2	0.0	1.9
			C	2	1,168	3	11	2	66	0	0					0.1	5.3	0.1	3.2

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2662	2664	2663	A	0	0	0	0	0	20	-3	0	#6 Cu	3.48	12.04	24.94	0.0	3.5	-0.3	1.1
			B	10	685	8	22	5	34	-1	0					0.1	5.4	0.1	2.0
			C	0	0	0	0	0	52	-2	0					0.2	5.6	0.3	3.0
2664	2666	2665	C	16	935	10	39	7	46	5	0	#2 ACSR	6.58	18.62	24.94	0.2	5.7	0.1	1.8
2664	2668	2667	A	7	811	0	20	0	20	0	0	#6 Cu	4.19	16.22	24.94	0.1	3.6	-0.3	1.1
			B	2	656	0	7	0	7	-3	0					0.0	5.4	0.0	0.4
			C	5	266	0	6	0	6	-3	0					0.0	5.6	0.3	0.4

Feeder Data: (Dom. Customers = 2,325 at an average of 489 kWh/Month) (Measured Demands = 2,373 kW) (Losses = 135 kW) (Total Loading = 4,291 kW)

135 - Jenk's Ranch

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
135	2982	2983	C	0	0	0	0	0	19	8	0	#4 ACSR	0.51	0.51	24.94	0.0	0.0	0.0	1.0
2982	2970	2971	C	1	2,553	0	19	0	19	9	0	#4 ACSR	0.51	1.03	24.94	0.0	0.0	0.0	1.0

Feeder Data: (Dom. Customers = 1 at an average of 2,553 kWh/Month) (Measured Demands = 0 kW) (Losses = 0 kW) (Total Loading = 19 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
41	502	501	A	17	1,372	0	64	0	933	109	0	1/0 ACSR	2.64	2.64	24.94	1.3	1.3	7.9	27.0
			B	43	812	3	83	2	910	107	0					1.3	1.3	8.2	26.3
			C	105	965	3	215	2	1,110	150	0					1.5	1.5	10.9	32.2
502	532	531	A	6	957	4	24	3	27	4	0	#4 Cu	0.69	3.33	24.94	0.0	1.3	-0.1	1.1
			B	1	1	4	0	3	3	0	0					0.0	1.3	0.0	0.1
			C	5	778	32	18	24	41	7	0					0.0	1.5	0.1	1.7
502	504	503	A	0	0	0	0	0	834	87	0	#4 Cu	0.07	2.71	24.94	0.0	1.3	0.3	33.0
			B	0	0	0	0	0	814	88	0					0.0	1.3	0.3	32.2
			C	2	1,140	0	13	0	840	93	0					0.0	1.5	0.3	33.3
504	506	505	C	49	777	0	90	0	90	16	0	#4 ACSR	1.37	4.07	24.94	0.1	1.6	0.1	4.4
504	508	507	A	4	286	62	6	46	834	87	0	#4 Cu	1.53	4.23	24.94	1.1	2.4	6.9	33.0
			B	3	57	62	1	46	813	88	0					1.0	2.3	6.0	32.2
			C	2	2	63	0	47	738	74	0					0.9	2.4	5.0	29.2
508	510	509	A	26	614	26	43	19	193	36	0	#4 ACSR	1.09	5.31	24.94	0.3	2.7	0.3	9.5
			B	113	601	26	152	19	599	115	0					0.9	3.2	3.7	29.4
			C	134	737	35	213	25	474	91	0					0.4	2.8	1.4	23.2
510	512	511	A	21	603	129	36	95	131	25	0	#2 ACSR	0.38	5.69	24.94	0.0	2.7	0.0	5.0
			B	51	478	129	60	95	155	30	0					0.0	3.2	0.0	6.0
			C	18	605	129	32	95	127	24	0					0.0	2.8	0.1	4.9
510	514	513	A	0	0	0	0	0	0	0	0	#4 ACSR	0.09	5.40	24.94	0.0	2.7	0.0	0.0
			B	0	0	0	0	0	270	52	0					0.0	3.2	0.1	13.3
			C	0	0	0	0	0	107	20	0					0.0	2.8	0.0	5.2
514	516	515	B	69	586	0	94	0	94	18	0	#4 ACSR	0.34	5.74	24.94	0.0	3.2	0.0	4.7
			C	69	563	21	91	15	107	21	0					0.0	2.8	0.1	5.2

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
514	518	517	B	119	529	45	142	33	176	34	0	#4 ACSR	0.70	6.10	24.94	0.1	3.3	0.1	8.7
508	520	519	A	0	0	0	0	0	582	38	0	#4 Cu	0.16	4.39	24.94	0.1	2.5	0.4	23.1
			B	0	0	0	0	0	161	-38	0					0.0	2.3	0.0	6.6
			C	0	0	0	0	0	213	-28	0					0.0	2.4	0.1	8.5
520	522	521	A	0	0	0	0	0	581	38	53	#4 Cu	0.21	4.60	24.94	0.1	2.6	0.5	23.1
			B	4	497	0	10	0	161	-38	53					0.0	2.3	0.0	6.6
			C	10	668	0	24	0	213	-27	53					0.0	2.4	0.1	8.5
522	524	523	A	0	0	0	0	0	581	91	0	1/0 Cu	1.94	6.54	24.94	0.5	3.2	1.9	12.8
			B	0	0	0	0	0	151	14	0					-0.1	2.1	-0.2	3.3
			C	0	0	0	0	0	189	21	0					0.2	2.7	0.5	4.1
524	530	529	A	92	580	0	121	0	121	20	0	1/0 Cu	3.17	9.71	24.94	0.1	3.2	-0.3	2.7
			B	6	619	0	16	0	16	-1	0					0.0	2.1	0.0	0.4
			C	19	999	0	53	0	53	6	0					0.1	2.7	0.3	1.2
524	534	533	A	0	0	0	0	0	458	70	0	1/0 AL UG	0.47	7.01	24.94	0.2	3.3	0.6	12.9
			B	0	0	0	0	0	135	17	0					0.0	2.1	0.0	3.8
			C	0	0	0	0	0	135	17	0					0.0	2.7	0.0	3.8
534	526	525	A	101	479	0	112	0	322	52	0	1/0 AL UG	0.60	7.61	24.94	0.1	3.5	0.3	9.1
526	528	527	A	173	549	0	209	0	210	39	0	#4 ACSR	2.90	10.51	24.94	0.5	4.0	0.8	10.4
534	536	535	A	28	620	85	46	62	135	23	0	1/0 AL UG	0.23	7.24	24.94	0.0	3.4	0.0	3.8
			B	28	620	85	46	62	135	23	0					0.0	2.1	0.0	3.8
			C	28	620	85	46	62	135	23	0					0.0	2.7	0.0	3.8

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
536	538	537	A	1	1	37	0	27	27	5	0	1/0 AL UG	0.03	7.27	24.94	0.0	3.4	0.0	0.8
			B	1	1	37	0	27	27	5	0					0.0	2.1	0.0	0.8
			C	1	1	37	0	27	27	5	0					0.0	2.7	0.0	0.8

Feeder Data: (Dom. Customers = 1,348 at an average of 640 kWh/Month) (Measured Demands = 1,139 kW) (Losses = 57 kW) (Total Loading = 2,952 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
42	600	601	A	7	701	0	24	0	906	79	0	1/0 ACSR	1.08	1.08	24.94	0.4	0.4	2.7	26.1
			B	0	0	0	0	0	1,081	111	0					0.7	0.7	6.1	31.2
			C	1	239	0	2	0	1,325	142	0					0.7	0.7	7.1	38.3
600	602	603	A	4	1,232	7	27	6	34	5	0	#4 ACSR	0.60	1.67	24.94	0.0	0.4	0.1	1.6
			C	51	891	7	127	6	133	21	0					0.1	0.8	0.0	6.4
600	610	609	A	12	623	0	31	0	845	69	0	1/0 ACSR	1.31	2.39	24.94	0.5	0.9	3.1	24.5
			B	73	884	4	173	3	1,075	108	0					0.8	1.6	6.1	31.2
			C	38	1,013	4	111	3	1,182	114	0					0.8	1.5	6.3	34.4
610	612	611	C	155	758	67	304	59	364	57	0	#4 ACSR	1.39	3.78	24.94	0.4	1.9	1.1	17.6
610	614	613	A	1	1,045	30	8	26	812	63	0	#4 Cu	1.60	3.98	24.94	1.2	2.1	7.1	31.9
			B	10	1,082	30	44	26	892	78	0					1.1	2.7	7.4	35.3
			C	15	618	30	35	26	699	33	0					0.7	2.2	4.0	27.5
614	616	615	A	69	1,009	31	185	27	212	33	0	#6A CWC o	0.55	4.53	24.94	0.1	2.2	0.1	10.3
			B	6	575	21	18	19	37	5	0					0.0	2.7	0.0	1.8
			C	57	666	21	108	19	127	20	0					0.1	2.3	0.1	6.2
614	618	617	A	2	455	4	7	3	558	22	0	#4 Cu	1.01	4.99	24.94	0.5	2.6	2.2	22.1
			B	18	860	4	54	3	777	59	0					0.6	3.3	3.8	31.0
			C	4	499	4	12	3	506	4	0					0.3	2.5	1.2	20.0
618	656	655	A	1	6	13	0	12	12	1	0	#4 ACSR	0.40	5.39	24.94	0.0	2.6	0.0	0.6
			B	2	1	17	0	15	15	2	0					0.0	3.3	0.0	0.7
			C	12	349	13	18	12	67	6	0					0.0	2.5	0.0	3.2
656	658	657	C	18	563	0	37	0	37	2	0	#4 ACSR	4.46	9.84	24.94	0.1	2.7	0.0	1.8

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
618	620	619	A	4	936	0	21	0	534	20	0	#4 Cu	0.50	5.49	24.94	0.3	2.9	1.0	21.2
			B	5	643	0	18	0	702	46	0					0.3	3.6	1.6	28.1
			C	4	507	0	12	0	422	-5	0					0.1	2.6	0.4	16.8
620	622	621	A	0	0	0	0	0	0	-3	0	#4 ACSR	2.57	8.06	24.94	0.1	2.9	-0.2	0.1
			B	66	608	20	113	18	288	41	0					0.9	4.5	1.8	14.1
			C	30	692	20	65	18	83	10	0					0.0	2.6	0.2	4.0
622	624	623	B	138	400	0	154	0	155	23	0	#4 ACSR	2.07	10.13	24.94	0.2	4.8	0.3	7.7
620	626	625	A	13	770	0	39	0	512	20	0	#4 Cu	1.06	6.55	24.94	0.5	3.3	1.8	20.4
			B	2	1,188	0	16	0	394	2	0					0.3	3.9	0.8	15.8
			C	0	0	0	0	0	326	-17	0					0.2	2.9	0.8	13.0
626	628	627	A	0	0	0	0	0	471	13	0	#4 Cu	1.49	8.04	24.94	0.6	3.9	2.2	18.8
			B	4	1,730	0	37	0	378	0	0					0.3	4.2	1.0	15.2
			C	0	0	0	0	0	326	-16	0					0.4	3.2	1.1	13.0
628	630	629	A	0	0	0	0	0	469	14	0	#6 Cu	0.61	8.65	24.94	0.4	4.3	1.4	26.7
			B	1	2,334	0	16	0	340	-5	0					0.2	4.4	0.6	19.4
			C	0	0	0	0	0	325	-14	0					0.2	3.5	0.7	18.4
630	632	631	A	1	1	0	0	0	0	0	0	#4 ACSR	0.36	9.01	24.94	0.0	4.3	0.0	0.0
			B	18	403	16	27	15	42	6	0					0.0	4.4	0.0	2.1
			C	2	750	16	11	15	25	4	0					0.0	3.5	0.0	1.2
630	634	633	A	0	0	0	0	0	468	14	0	#6 Cu	0.43	9.08	24.94	0.3	4.6	1.0	26.7
			B	0	0	0	0	0	281	-13	0					0.1	4.5	0.3	16.1
			C	0	0	0	0	0	299	-17	0					0.2	3.6	0.4	17.0
634	636	635	A	1	1	0	0	0	0	0	0	#6 Cu	0.34	9.41	24.94	0.0	4.6	0.0	0.0
			C	2	22	0	0	0	94	12	0					0.0	3.7	0.0	5.4

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
636	638	637	C	63	511	0	93	0	93	12	0	#6 Cu	2.95	12.37	24.94	0.2	3.9	0.1	5.3
634	640	639	A	0	0	0	0	0	466	14	0	#6 Cu	0.10	9.18	24.94	0.1	4.7	0.2	26.7
			B	0	0	0	0	0	281	-13	0					0.0	4.6	0.1	16.1
			C	0	0	0	0	0	204	-29	0					0.0	3.7	0.0	11.7
640	642	641	C	1	342	0	3	0	3	-2	0	#6 Cu	2.65	11.83	24.94	0.0	3.7	0.0	0.2
640	644	643	A	26	870	0	71	0	466	14	0	#6 Cu	1.34	10.52	24.94	0.8	5.5	2.8	26.7
			B	0	0	0	0	0	281	-13	0					0.4	4.9	0.8	16.1
			C	1	39	0	0	0	201	-27	0					0.3	4.0	0.6	11.5
644	646	645	A	23	658	0	51	0	191	29	0	#6A CWC o	0.36	10.88	24.94	0.1	5.6	0.1	9.5
646	648	647	A	81	556	16	126	14	140	21	0	#6A CWC o	1.35	12.23	24.94	0.2	5.7	0.2	7.0
644	650	649	A	4	694	24	16	22	201	-26	49	#6 Cu	5.26	15.78	24.94	1.3	6.8	1.8	11.7
			B	70	511	26	102	23	280	-12	50					1.5	6.4	3.1	16.1
			C	18	400	26	27	23	200	-26	51					1.0	5.0	2.1	11.5
650	652	651	A	24	528	0	43	0	43	5	0	#4 ACSR	2.10	17.87	24.94	0.1	6.9	0.0	2.2
650	654	653	A	41	898	14	106	12	118	17	0	#6 Cu	1.58	17.36	24.94	0.1	6.9	0.0	6.9
			B	55	864	22	132	19	151	22	0					0.2	6.6	0.2	8.9
			C	58	753	28	122	25	147	22	0					0.2	5.2	0.3	8.5

Feeder Data: (Dom. Customers = 1,312 at an average of 690 kWh/Month) (Measured Demands = 534 kW) (Losses = 88 kW) (Total Loading = 3,311 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
136	4502	4501	A	0	0	0	0	0	12	0	0	1/0 AL UG	0.02	0.02	24.94	0.0	0.0	0.0	0.3
			B	0	0	0	0	0	101	22	0					0.0	0.0	0.0	2.8
			C	0	0	0	0	0	87	19	0					0.0	0.0	0.0	2.4
4502	4504	4503	A	0	0	0	0	0	12	2	0	1/0 ACSR	0.01	0.03	24.94	0.0	0.0	0.0	0.4
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
4504	4506	4505	A	8	316	0	12	0	12	2	0	#6 Cu	1.84	1.87	24.94	0.0	0.0	0.0	0.7
4502	4508	4507	A	0	0	0	0	0	0	-1	0	1/0 ACSR	0.57	0.59	24.94	0.0	0.0	-0.1	0.0
			B	3	369	0	7	0	101	22	0					0.1	0.1	0.0	3.0
			C	0	0	0	0	0	87	19	0					0.0	0.0	0.1	2.6
4508	4510	4509	A	0	0	0	0	0	0	0	0	1/0 ACSR	0.05	0.64	24.94	0.0	0.0	0.0	0.0
			B	4	362	0	9	0	13	3	0					0.0	0.1	0.0	0.4
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
4510	4512	4511	B	2	293	0	4	0	4	1	0	#6A CWC o	0.05	0.69	24.94	0.0	0.1	0.0	0.2
4508	4514	4513	A	0	0	0	0	0	0	0	0	1/0 ACSR	0.09	0.68	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	80	18	0					0.0	0.1	0.0	2.4
			C	0	0	0	0	0	87	20	0					0.0	0.0	0.0	2.6
4514	4516	4515	C	0	0	0	0	0	80	18	0	#6 Cu	0.05	0.73	24.94	0.0	0.0	0.0	4.5
4516	4518	4517	C	56	507	0	80	0	80	18	0	#6 Cu	2.62	3.36	24.94	0.2	0.2	0.1	4.5
4514	4520	4519	A	0	0	0	0	0	0	0	0	1/0 ACSR	0.08	0.76	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	80	18	0					0.0	0.1	0.0	2.4
			C	1	923	0	7	0	7	2	0					0.0	0.0	0.0	0.2

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
4520	4522	4521	B	7	237	0	9	0	9	2	0	#4 ACSR	0.64	1.40	24.94	0.0	0.1	0.0	0.4
4520	4524	4523	B	53	466	0	71	0	71	16	0	#6 Cu	2.16	2.91	24.94	0.1	0.2	0.1	4.0

Feeder Data: (Dom. Customers = 134 at an average of 458 kWh/Month) (Measured Demands = 0 kW) (Losses = 0 kW) (Total Loading = 200 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
111	2914	2913	A	0	0	0	0	0	64	18	0	#6 CWC	0.24	0.24	2.40	2.5	2.5	1.2	32.6
			B	0	0	0	0	0	86	17	0					3.0	3.0	1.8	43.2
			C	0	0	0	0	0	76	37	0					2.5	2.5	1.8	41.5
2914	2916	2915	A	1	116	0	1	0	13	0	0	#6 CWC	0.26	0.50	2.40	0.5	3.0	0.0	6.5
			B	1	241	0	2	0	9	7	0					0.2	3.2	0.0	5.9
			C	1	125	0	1	0	5	1	0					0.3	2.8	0.0	2.4
2916	2920	2919	A	0	0	0	0	0	12	0	0	#2 ACSR	0.70	1.20	2.40	0.9	3.8	0.1	4.7
			B	0	0	0	0	0	8	7	0					0.3	3.5	0.1	4.2
			C	0	0	0	0	0	3	0	0					0.4	3.2	0.0	1.4
2920	2924	2923	A	0	0	0	0	0	12	0	0	#6 CWC	2.39	3.59	2.40	4.3	8.2	0.4	6.0
			B	0	0	0	0	0	8	7	0					1.5	5.1	0.3	5.3
			C	0	0	0	0	0	3	0	0					2.3	5.4	0.0	1.7
2924	10001	10001	A	0	0	0	0	0	12	0	0	Regulator	0.00	3.59	2.40	-6.3	1.9	0.0	8.4
	2964		B	0	0	0	0	0	7	7	0					-4.5	0.5	0.0	7.5
			C	0	0	0	0	0	3	0	0					-4.9	0.6	0.0	2.4
10001	2926	2925	A	2	135	4	2	3	12	0	0	#6 CWC	0.30	3.89	2.40	0.5	2.4	0.0	5.7 8.7
			B	1	72	1	1	1	7	7	0					0.2	0.7	0.0	5.1
			C	1	198	4	1	3	3	0	0					0.2	0.8	0.0	1.7
2926	2928	2927	A	7	352	0	11	0	6	-1	0	#4 ACSR	0.12	4.01	2.40	0.1	2.4	0.0	3.3 8.7
			B	0	0	0	0	0	4	5	0					0.0	0.7	0.0	3.3
2914	2936	2935	A	1	534	0	4	0	50	18	0	#6 CWC	0.16	0.39	2.40	1.2	3.7	0.5	26.4
			B	6	339	0	10	0	75	9	0					1.7	4.7	0.9	38.0
			C	3	192	20	4	15	69	36	0					1.4	3.9	0.9	39.2

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2936	2942	2941	A	5	228	4	6	3	14	8	0	#4 ACSR	0.29	0.69	2.40	0.4	4.1	0.0	8.0
			B	7	633	4	18	3	16	1	0					0.5	5.2	0.0	8.3
			C	8	552	4	18	3	21	7	0					0.5	4.4	0.1	11.1
2936	2944	2943	A	17	490	0	26	0	26	2	0	#4 ACSR	0.15	0.55	2.40	0.6	4.3	0.1	13.1
			B	17	490	0	26	0	51	7	0					0.9	5.6	0.3	26.2
			C	0	0	0	0	0	33	27	0					0.5	4.4	0.2	21.6
2944	2946	2945	B	20	455	0	27	0	16	-4	0	#4 ACSR	0.35	0.90	2.40	0.5	6.1	0.1	8.6
			C	0	0	0	0	0	11	13	0					0.1	4.5	0.1	8.6
2944	2948	2947	A	3	492	0	8	0	10	5	0	#4 ACSR	0.06	0.60	2.40	0.0	4.3	0.0	5.8
			B	5	341	0	9	0	8	3	0					0.0	5.6	0.0	4.5
			C	8	398	0	13	0	11	2	0					0.1	4.5	0.0	5.8

Feeder Data: (Dom. Customers = 114 at an average of 428 kWh/Month) (Measured Demands = 41 kW) (Losses = 9 kW) (Total Loading = 226 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
121	1302	1301	A	0	0	0	0	0	0	0	0	#2 ACSR	0.06	0.06	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	465	173	0					0.0	0.0	0.1	18.2
1302	1304	1303	C	3	542	0	14	0	465	173	0	#2 ACSR	0.13	0.19	24.94	0.1	0.1	0.2	18.2
1304	1306	1305	C	18	259	0	24	0	24	8	0	#6A CWC o	1.91	2.10	24.94	0.0	0.1	0.0	1.2
1304	1308	1307	C	1	91	0	1	0	427	159	0	#2 ACSR	0.03	0.23	24.94	0.0	0.1	0.0	16.7
1308	1310	1309	C	17	370	0	32	0	425	159	0	#6A CWC o	0.42	0.64	24.94	0.3	0.4	0.9	21.5
1310	1312	1311	C	127	393	0	183	0	183	72	0	#6A CWC o	2.76	3.40	24.94	0.4	0.8	0.6	9.3
1310	1314	1313	C	27	796	0	88	0	209	74	0	#6A CWC o	3.41	4.05	24.94	0.9	1.3	1.2	10.5
1314	1316	1315	C	59	422	0	97	0	97	35	0	#6A CWC o	4.69	8.74	24.94	0.4	1.7	0.3	4.9
1314	1318	1317	C	3	960	0	23	0	23	6	0	#6A CWC o	3.83	7.88	24.94	0.1	1.4	0.0	1.1

Feeder Data: (Dom. Customers = 255 at an average of 439 kWh/Month) (Measured Demands = 0 kW) (Losses = 3 kW) (Total Loading = 465 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
122	1386	1385	A	0	0	0	0	0	186	78	0	#4 ACSR	0.01	0.01	24.94	0.0	0.0	0.0	9.5
			B	0	0	0	0	0	118	52	0					0.0	0.0	0.0	6.1
			C	0	0	0	0	0	121	53	0					0.0	0.0	0.0	6.3
1386	1388	1387	A	0	0	0	0	0	186	78	0	#4 ACSR	0.06	0.08	24.94	0.0	0.0	0.0	9.5
			B	1	1,072	0	9	0	118	52	0					0.0	0.0	0.0	6.1
			C	0	0	0	0	0	121	53	0					0.0	0.0	0.0	6.3
1388	1390	1389	A	0	0	0	0	0	186	78	0	Switch	0.00	0.08	24.94	0.0	0.0	0.0	6.7
			B	0	0	0	0	0	109	48	0					0.0	0.0	0.0	3.9
			C	0	0	0	0	0	121	53	0					0.0	0.0	0.0	4.4
1390	1392	1391	A	0	0	0	0	0	186	78	0	#4 ACSR	0.50	0.58	24.94	0.1	0.2	0.2	9.5
			B	0	0	0	0	0	109	48	0					0.1	0.1	0.1	5.6
			C	0	0	0	0	0	121	53	0					0.1	0.1	0.1	6.3
1392	1394	1393	A	3	297	104	7	109	116	52	0	#4 ACSR	0.30	0.88	24.94	0.1	0.2	0.0	6.0
			B	1	1	104	0	109	109	48	0					0.0	0.1	0.0	5.6
			C	2	733	104	12	109	121	54	0					0.1	0.2	0.1	6.3
1392	1396	1395	A	7	268	0	12	0	70	27	0	#6A CWC o	1.52	2.10	24.94	0.2	0.3	0.1	3.5
1396	1398	1397	A	18	771	0	57	0	57	23	0	#4 ACSR	2.74	4.83	24.94	0.1	0.5	0.1	2.9

Feeder Data: (Dom. Customers = 32 at an average of 600 kWh/Month) (Measured Demands = 312 kW) (Losses = 1 kW) (Total Loading = 426 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1	160	227	A	0	0	0	0	0	1,720	88	0	4/0 AL UG	0.04	0.04	24.94	0.0	0.0	0.3	29.9
			B	0	0	0	0	0	1,910	171	0					0.0	0.0	0.4	33.3
			C	0	0	0	0	0	1,250	64	0					0.0	0.0	0.1	21.7
160	156	159	A	0	0	0	0	0	1,720	89	0	477 ACSR	0.74	0.78	24.94	0.3	0.3	3.4	17.0
			B	0	0	0	0	0	1,909	171	0					0.2	0.2	1.7	18.9
			C	1	597	0	5	0	1,250	64	0					0.0	0.0	0.1	12.4
156	142	155	A	25	790	51	68	48	1,487	52	108	#2 ACSR	0.68	1.46	24.94	1.0	1.3	11.0	54.8
			B	76	380	109	91	104	1,744	142	108					0.9	1.1	11.5	64.4 } 60.8
			C	40	714	80	91	76	899	13	110					0.3	0.3	2.0	33.1
142	6052	141	A	9	469	0	21	0	870	71	0	#2 ACSR	0.28	1.74	24.94	0.2	1.5	1.6	32.4
			B	12	271	15	16	14	779	108	0					0.2	1.2	0.9	29.1
			C	5	383	15	12	14	408	54	0					0.1	0.4	0.3	15.2
6052	6054	6053	B	81	464	0	115	0	115	17	0	#4 ACSR	0.38	2.12	24.94	0.0	1.3	0.0	5.5
6052	6066	6065	A	58	535	34	96	33	848	67	0	#2 ACSR	0.29	2.03	24.94	0.2	1.7	1.4	31.6
			B	11	342	0	18	0	633	87	0					0.1	1.4	0.6	23.7
			C	11	484	0	25	0	381	50	0					0.1	0.5	0.3	14.2
6066	6068	6067	B	93	618	0	168	0	168	24	0	#4 ACSR	0.62	2.64	24.94	0.1	1.4	0.1	8.1
6066	118	6069	A	0	0	0	0	0	717	48	0	#2 ACSR	0.39	2.42	24.94	0.3	2.0	1.4	26.8
			B	116	374	9	132	8	447	60	0					0.1	1.4	0.2	16.7
			C	0	0	0	0	0	356	47	0					0.1	0.6	0.4	13.3
118	116	117	A	0	0	0	0	0	0	-1	0	#2 ACSR	1.12	3.54	24.94	0.0	2.0	-0.1	0.1
			B	0	0	0	0	0	0	-2	0					0.0	1.4	0.0	0.1
			C	0	0	0	0	0	0	-1	0					0.0	0.6	0.1	0.1

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
118	6072	6071	A	0	0	0	0	0	716	49	0	#2 ACSR	0.15	2.57	24.94	0.1	2.1	0.5	26.8
			B	0	0	0	0	0	306	41	0					0.0	1.5	0.0	11.5
			C	0	0	0	0	0	356	49	0					0.1	0.7	0.2	13.3
6072	132	6073	A	0	0	0	0	0	716	48	0	#2 ACSR	0.08	2.65	24.94	0.1	2.1	0.3	26.8
			B	0	0	0	0	0	306	41	0					0.0	1.5	0.0	11.5
			C	0	0	0	0	0	356	49	0					0.0	0.7	0.1	13.3
132	128	131	A	5	365	0	12	0	408	33	0	#2 ACSR	0.87	3.52	24.94	0.3	2.4	0.8	15.3
			B	16	418	0	28	0	209	28	0					0.1	1.6	0.1	7.8
			C	62	328	0	66	0	310	44	0					0.2	0.9	0.6	11.6
128	126	127	A	52	608	32	98	30	144	20	0	#2 ACSR	1.03	4.55	24.94	0.1	2.5	0.0	5.5
			B	44	779	62	106	59	181	25	0					0.1	1.7	0.2	6.8
			C	60	1,155	32	196	30	243	35	0					0.1	1.1	0.3	9.1
126	127	125	A	1	1	17	0	16	16	2	0	#2 ACSR	0.12	4.67	24.94	0.0	2.5	0.0	0.6
			B	1	1	17	0	16	16	2	0					0.0	1.7	0.0	0.6
			C	1	1	17	0	16	16	2	0					0.0	1.1	0.0	0.6
128	82	81	A	0	0	0	0	0	251	12	0	1/0 AL UG	0.08	3.60	24.94	0.0	2.5	0.0	7.0
82	84	83	A	36	646	0	76	0	251	13	0	1/0 AL UG	0.66	4.26	24.94	0.1	2.6	0.2	7.0
84	86	85	A	7	1,619	0	54	0	175	11	0	1/0 AL UG	0.09	4.35	24.94	0.0	2.6	0.0	4.9
86	90	89	A	0	0	0	0	0	122	4	0	1/0 AL UG	0.06	4.41	24.94	0.0	2.6	0.0	3.4
90	92	91	A	24	716	0	60	0	122	5	0	1/0 AL UG	0.49	4.90	24.94	0.0	2.6	0.0	3.4
92	94	93	A	30	599	0	61	0	61	3	0	1/0 AL UG	0.40	5.30	24.94	0.0	2.7	0.0	1.7

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
132	134	133	A	1	1	0	0	0	307	15	0	#2 ACSR	1.10	3.74	24.94	0.3	2.5	0.7	11.5
			B	34	901	0	97	0	97	13	0					-0.1	1.4	0.0	3.6
			C	23	545	0	46	0	46	5	0					0.1	0.8	0.1	1.7
134	136	135	A	22	774	1	60	0	306	16	0	1/0 AL UG	0.27	4.01	24.94	0.1	2.5	0.1	8.5
136	140	139	A	14	756	0	43	0	123	9	0	1/0 AL UG	0.07	4.08	24.94	0.0	2.5	0.0	3.4
140	88	87	A	39	641	0	80	0	80	3	0	1/0 AL UG	0.59	4.67	24.94	0.0	2.6	0.0	2.2
136	138	137	A	66	561	10	113	9	122	2	0	1/0 AL UG	1.12	5.13	24.94	0.1	2.6	0.1	3.4
142	144	143	A	1	737	0	6	0	490	68	0	#4 ACSR	0.16	1.61	24.94	0.1	1.4	0.4	23.6
			B	0	0	0	0	0	759	105	0					0.2	1.2	0.9	36.5
			C	0	0	0	0	0	323	44	0					0.0	0.4	0.1	15.4
144	146	145	A	0	0	0	0	0	483	67	0	#4 ACSR	0.07	1.68	24.94	0.1	1.4	0.2	23.3
			B	0	0	0	0	0	758	105	0					0.1	1.3	0.4	36.5
			C	3	176	0	4	0	218	29	0					0.0	0.4	0.0	10.4
146	148	147	A	22	680	9	54	8	449	65	0	#4 ACSR	0.41	2.09	24.94	0.3	1.7	0.9	21.7
			B	11	260	15	14	14	240	33	0					0.1	1.4	0.1	11.6
			C	12	445	9	24	8	33	4	0					0.0	0.4	0.0	1.6
148	6014	6013	A	9	595	0	26	0	386	56	0	#4 ACSR	0.49	2.57	24.94	0.3	2.0	0.8	18.7
			B	10	790	0	36	0	211	29	0					0.1	1.5	0.2	10.2
6014	150	149	A	130	620	40	230	38	359	52	0	#4 ACSR	1.26	3.83	24.94	0.5	2.5	0.9	17.4
			B	37	474	26	59	25	84	11	0					0.0	1.5	0.2	4.0
150	152	151	A	62	466	0	90	0	90	13	0	#4 ACSR	0.46	4.29	24.94	0.0	2.5	0.0	4.4

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
6014	6016	6015	B	47	614	1	91	1	92	13	0	#4 ACSR	0.67	3.25	24.94	0.0	1.5	0.0	4.4
146	5558	5557	B	2	285	2	5	2	6	1	0	#4 ACSR	0.19	1.87	24.94	0.0	1.3	0.0	0.3
146	5564	5563	A	8	415	1	18	1	33	2	0	#4 ACSR	0.89	2.57	24.94	0.1	1.5	-0.1	1.6
			B	40	436	37	59	36	512	71	0					0.7	2.0	2.5	24.7
			C	1	1	1	0	1	181	24	0					0.1	0.5	0.2	8.7
5564	5566	5565	A	1	125	0	1	0	8	1	0	#4 ACSR	0.07	2.64	24.94	0.0	1.5	0.0	0.4
			B	0	0	0	0	0	0	0	0					0.0	2.0	0.0	0.0
			C	15	565	0	35	0	92	13	0					0.0	0.5	0.0	4.4
5566	5568	5567	C	23	564	0	47	0	47	7	0	#4 ACSR	0.35	2.99	24.94	0.0	0.5	0.0	2.3
5566	5570	5569	A	1	803	0	7	0	7	1	0	#4 ACSR	0.19	2.83	24.94	0.0	1.5	0.0	0.3
			B	1	1	0	0	0	0	0	0					0.0	2.0	0.0	0.0
			C	7	231	0	10	0	10	1	0					0.0	0.5	0.0	0.5
5564	5572	5571	A	0	0	0	0	0	7	0	0	#4 ACSR	0.07	2.65	24.94	0.0	1.5	0.0	0.3
			B	0	0	0	0	0	348	49	0					0.0	2.0	0.1	16.9
			C	0	0	0	0	0	88	12	0					0.0	0.5	0.0	4.2
5572	5574	5573	B	38	551	0	69	0	69	10	0	#4 ACSR	0.61	3.26	24.94	0.0	2.1	0.0	3.3
5572	5576	5575	A	0	0	0	0	0	0	-1	0	#2 ACSR	0.76	3.41	24.94	0.0	1.5	-0.1	0.0
			B	28	569	45	55	43	98	14	0					0.1	2.1	0.0	3.7
			C	20	1,098	5	77	5	81	11	0					0.0	0.5	0.1	3.0
5572	5578	5577	A	0	0	0	0	0	7	1	0	#4 ACSR	0.09	2.74	24.94	0.0	1.5	0.0	0.3
			B	4	886	0	22	0	181	26	0					0.0	2.0	0.0	8.8
			C	2	176	2	3	2	7	1	0					0.0	0.4	0.0	0.3

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
5578	154	153	A	2	441	0	7	0	7	1	0	#4 ACSR	0.21	2.95	24.94	0.0	1.5	0.0	0.3
			B	15	654	0	40	0	40	6	0					0.0	2.0	0.0	1.9
			C	1	187	0	2	0	2	0	0					0.0	0.4	0.0	0.1
5578	5582	5581	B	39	617	44	78	42	120	17	0	#4 ACSR	0.66	3.39	24.94	0.1	2.1	0.1	5.8
5564	5596	5595	A	0	0	0	0	0	0	0	0	#4 ACSR	0.06	2.63	24.94	0.0	1.5	0.0	0.0
			B	3	155	0	4	0	67	9	0					0.0	2.0	0.0	3.2
			C	0	0	0	0	0	0	0	0					0.0	0.4	0.0	0.0
5596	5598	5597	B	41	464	0	63	0	63	8	0	#4 ACSR	1.39	4.02	24.94	0.1	2.1	0.0	3.1
144	5556	5555	C	37	762	15	90	14	104	15	0	#4 ACSR	0.30	1.91	24.94	0.0	0.4	0.0	5.0
156	158	157	A	19	591	0	43	0	230	33	0	477 ACSR	0.03	0.81	24.94	0.0	0.3	0.0	2.3
			B	0	0	0	0	0	163	22	0					0.0	0.2	0.0	1.6
			C	0	0	0	0	0	345	50	0					0.0	0.0	0.0	3.4
158	162	161	A	0	0	0	0	0	187	26	0	4/0 ACSR	0.09	0.90	24.94	0.0	0.3	0.0	3.7
			B	0	0	0	0	0	163	22	0					0.0	0.2	0.0	3.2
			C	0	0	0	0	0	345	50	0					0.0	0.0	0.0	6.8
162	5506	5505	A	0	0	0	0	0	187	26	0	4/0 ACSR	0.06	0.95	24.94	0.0	0.3	0.0	3.7
			B	0	0	0	0	0	163	22	0					0.0	0.2	0.0	3.2
			C	0	0	0	0	0	345	50	0					0.0	0.0	0.0	6.8
5506	5508	5507	B	73	524	0	116	0	116	17	0	#4 ACSR	0.70	1.65	24.94	0.1	0.3	0.1	5.6
5506	5510	5509	A	15	602	0	37	0	187	26	0	4/0 ACSR	0.46	1.41	24.94	0.0	0.3	-0.1	3.7
			B	0	0	0	0	0	47	6	0					0.0	0.2	0.0	0.9
			C	0	0	0	0	0	345	50	0					0.1	0.1	0.2	6.8

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
5510	164	163	B	33	409	0	47	0	47	7	0	#4 ACSR	0.37	1.77	24.94	0.0	0.2	0.0	2.3
5510	5512	5511	A	0	0	0	0	0	150	22	0	4/0 ACSR	0.03	1.43	24.94	0.0	0.3	0.0	3.0
			B	0	0	0	0	0	0	0	0					0.0	0.2	0.0	0.0
			C	9	447	0	20	0	345	50	0					0.0	0.1	0.0	6.8
5512	5514	5513	A	95	533	0	150	0	150	22	0	#4 ACSR	0.72	2.15	24.94	0.1	0.4	0.1	7.2
5512	5516	5515	C	53	540	0	90	0	325	47	0	#4 ACSR	0.53	1.96	24.94	0.2	0.3	0.5	15.5
5516	6082	6081	C	67	796	83	156	78	234	34	0	#4 ACSR	0.68	2.64	24.94	0.2	0.5	0.2	11.2

Feeder Data: (Dom. Customers = 2,113 at an average of 580 kWh/Month) (Measured Demands = 834 kW) (Losses = 51 kW) (Total Loading = 4,880 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2	7002	7001	A	0	0	0	0	0	49	3	0	477 ACSR	1.56	1.56	24.94	-0.1	-0.1	-0.3	0.5
			B	0	0	0	0	0	437	105	0					0.3	0.3	0.9	4.4
			C	0	0	0	0	0	545	136	0					0.1	0.1	0.3	5.5
7002	7102	7101	A	0	0	0	0	0	0	-4	0	#2 ACSR	0.57	2.13	24.94	0.0	-0.1	-0.1	0.2
			B	0	0	0	0	0	61	11	0					0.1	0.3	0.0	2.3
			C	0	0	0	0	0	208	51	0					0.1	0.2	0.2	7.9
7102	7104	7103	A	0	0	0	0	0	0	-3	0	#2 ACSR	0.74	2.87	24.94	0.0	-0.2	-0.1	0.1
			B	0	0	0	0	0	61	12	0					0.1	0.4	0.0	2.3
			C	0	0	0	0	0	208	52	0					0.2	0.4	0.3	7.9
7104	7108	7107	A	0	0	0	0	0	0	-2	0	#2 ACSR	1.33	4.20	24.94	-0.1	-0.2	-0.1	0.1
			B	0	0	0	0	0	23	3	0					0.1	0.5	0.0	0.9
			C	0	0	0	0	0	177	45	0					0.3	0.6	0.4	6.7
7108	7112	7111	A	0	0	0	0	0	0	-1	0	#2 ACSR	0.59	4.79	24.94	0.0	-0.2	-0.1	0.0
			B	5	443	0	14	0	14	3	0					0.0	0.5	0.0	0.5
			C	23	401	0	37	0	37	9	0					0.0	0.7	0.1	1.4
7108	7110	7109	B	7	70	5	4	5	8	2	0	#2 ACSR	0.25	4.45	24.94	0.0	0.5	0.0	0.3
			C	60	715	5	135	5	140	37	0					0.0	0.7	0.1	5.4
7104	7106	7105	B	6	1,102	2	36	2	38	10	0	#4 ACSR	0.58	3.45	24.94	0.0	0.4	-0.1	1.9
			C	4	1,128	2	28	2	31	8	0					0.0	0.4	0.1	1.5
7002	7006	7005	A	0	0	50	0	50	50	13	0	#2 ACSR	0.43	1.99	24.94	0.0	-0.1	0.0	1.9
			B	4	1,690	50	41	50	375	99	0					0.2	0.5	0.5	14.3
			C	0	0	50	0	50	336	89	0					0.1	0.2	0.3	12.8
7006	7008	7007	B	118	725	31	253	31	284	75	0	#6A CWC o	0.59	2.58	24.94	0.2	0.6	0.2	13.9
			C	109	747	45	241	45	286	76	0					0.1	0.3	0.3	14.0

2 - SKY-HI RETREAT

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
7002	7004	7003	A	0	0	0	0	0	0	-3	0	477 ACSR	2.07	3.63	24.94	0.0	-0.1	-0.3	0.0
			B	0	0	0	0	0	0	-3	0					0.0	0.3	0.0	0.0
			C	0	0	0	0	0	0	-3	0					0.0	0.1	0.3	0.0

Feeder Data: (Dom. Customers = 336 at an average of 713 kWh/Month) (Measured Demands = 241 kW) (Losses = 3 kW) (Total Loading = 1,031 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
3	120	119	A	4	713	100	23	120	459	100	0	4/0 AL UG	0.44	0.44	24.94	0.1	0.1	0.2	8.2
			B	3	713	100	19	120	405	86	0					0.1	0.1	0.2	7.2
			C	1	6,034	100	50	120	331	66	0					0.0	0.0	0.1	5.9
120	122	121	A	109	657	5	260	6	316	69	0	1/0 AL UG	0.62	1.06	24.94	0.1	0.2	0.2	8.8
			B	84	697	5	215	6	266	56	0					0.1	0.1	0.1	7.4
			C	79	507	5	154	6	161	28	0					0.0	0.0	0.0	4.4
122	124	123	A	29	370	0	49	0	49	6	0	1/0 AL UG	0.57	1.63	24.94	0.0	0.2	0.0	1.3
			B	13	629	0	44	0	44	4	0					0.0	0.1	0.0	1.2
			C	1	82	0	1	0	1	-7	0					0.0	0.0	0.0	0.2

Feeder Data: (Dom. Customers = 323 at an average of 620 kWh/Month) (Measured Demands = 315 kW) (Losses = 1 kW) (Total Loading = 1,195 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
181	2302	2301	A	1	1	105	0	67	878	-43	0	4/0 ACSR	1.43	1.43	24.94	0.3	0.3	2.1	17.1
			B	5	1,170	128	22	81	1,199	74	0					0.6	0.6	5.0	23.4
			C	1	1	105	0	67	1,057	22	0					0.3	0.3	2.3	20.6
2302	[illegible]	2303	A	16	746	0	31	0	810	-67	109	4/0 ACSR	1.17	2.60	24.94	0.2	0.5	1.3	15.8
			B	50	758	0	77	0	1,091	33	109					0.4	1.0	3.2	21.3
			C	12	775	0	27	0	988	-5	109					0.2	0.5	1.7	19.3
2304	2306	2305	A	10	696	28	21	18	58	16	0	1/0 ACSR	0.28	2.89	24.94	0.0	0.5	0.0	1.7
			B	15	346	46	15	29	75	21	0					0.0	1.0	0.0	2.3
			C	4	4	28	0	18	37	8	0					0.0	0.5	0.0	1.1
2306	2308	2307	A	1	1	30	0	19	19	2	0	1/0 AL UG	0.34	3.23	24.94	0.0	0.5	0.0	0.5
			B	4	675	30	12	19	31	6	0					0.0	1.0	0.0	0.9
			C	1	1	30	0	19	19	2	0					0.0	0.5	0.0	0.5
2304	2310	2309	A	9	785	0	22	0	22	7	0	1/0 ACSR	0.23	2.83	24.94	0.0	0.5	0.0	0.7
			B	0	0	0	0	0	7	2	0					0.0	1.0	0.0	0.2
			C	11	672	0	22	0	79	27	0					0.0	0.5	0.0	2.4
2310	2312	2311	A	0	0	0	0	0	0	0	0	#4 ACSR	0.21	3.04	24.94	0.0	0.5	0.0	0.0
			B	4	337	2	6	1	7	2	0					0.0	1.0	0.0	0.4
			C	39	671	2	56	1	57	20	0					0.0	0.5	0.0	2.9
2304	2314	2313	A	15	794	5	32	3	697	8	0	4/0 ACSR	0.23	2.83	24.94	0.0	0.5	0.2	13.6
			B	6	795	5	17	3	928	89	0					0.1	1.0	0.5	18.3
			C	1	1	5	0	3	843	58	0					0.0	0.5	0.3	16.5
2314	2316	2315	A	1	1	0	0	0	0	-1	0	#4 ACSR	0.46	3.29	24.94	0.0	0.5	0.0	0.0
			B	34	667	0	50	0	50	17	0					0.0	1.1	0.0	2.5
			C	17	743	0	32	0	32	11	0					0.0	0.5	0.0	1.6

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2314	2318	2317	A	13	473	159	18	101	532	63	0	#4 ACSR	0.66	3.49	24.94	0.4	1.0	1.7	25.4
			B	14	1,492	152	53	97	710	125	0					0.6	1.7	3.4	34.4
			C	11	543	131	18	84	707	123	0					0.6	1.1	3.2	34.0
2318	2320	2319	A	5	1,239	0	23	0	23	8	0	1/0 ACSR	0.33	3.82	24.94	0.0	1.0	0.0	0.7
			B	24	530	0	31	0	31	10	0					0.0	1.7	0.0	0.9
			C	0	0	0	0	0	0	0	0					0.0	1.1	0.0	0.0
2318	2322	2321	A	5	471	0	10	0	10	3	0	1/0 ACSR	0.36	3.85	24.94	0.0	1.0	0.0	0.3
			B	4	348	0	6	0	6	2	0					0.0	1.7	0.0	0.2
			C	12	654	0	23	0	23	7	0					0.0	1.1	0.0	0.7
2318	2324	2323	A	5	430	3	9	2	378	12	0	#4 ACSR	0.35	3.84	24.94	0.1	1.1	0.4	18.0
			B	6	340	0	8	0	521	61	0					0.3	1.9	1.0	25.1
			C	8	375	3	11	2	579	80	0					0.3	1.3	1.1	27.9
2324	2326	2325	A	1	1	32	0	21	21	7	0	#4 ACSR	0.10	3.93	24.94	0.0	1.1	0.0	1.0
			B	1	1	32	0	21	21	7	0					0.0	1.9	0.0	1.0
			C	4	548	32	10	21	30	10	0					0.0	1.4	0.0	1.5
2324	2328	2327	A	0	0	0	0	0	346	1	0	#4 ACSR	0.06	3.90	24.94	0.0	1.1	0.1	16.5
			B	0	0	0	0	0	491	52	0					0.0	2.0	0.2	23.7
			C	0	0	0	0	0	535	65	0					0.0	1.4	0.2	25.8
2328	2330	2329	A	0	0	0	0	0	81	26	0	#2 ACSR	0.08	3.98	24.94	0.0	1.1	0.0	3.2
			B	0	0	0	0	0	105	34	0					0.0	2.0	0.0	4.1
			C	6	659	0	15	0	126	42	0					0.0	1.4	0.0	4.9
2330	2332	2331	A	0	0	0	0	0	81	26	0	1/0 AL UG	0.10	4.07	24.94	0.0	1.1	0.0	2.3
			B	0	0	0	0	0	105	35	0					0.0	2.0	0.0	3.0
			C	0	0	0	0	0	112	37	0					0.0	1.4	0.0	3.2

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2332	2334	2333	A	6	298	116	7	74	81	28	0	1/0 ACSR	0.34	4.41	24.94	0.0	1.2	0.0	2.5
			B	14	765	119	29	76	105	36	0					0.0	2.0	0.0	3.2
			C	34	462	119	36	76	112	38	0					0.0	1.4	0.0	3.4
2328	2336	2335	A	0	0	0	0	0	265	-25	0	#4 ACSR	0.02	3.92	24.94	0.0	1.1	0.0	12.7
			B	0	0	0	0	0	386	17	0					0.0	2.0	0.0	18.5
			C	0	0	0	0	0	409	23	0					0.0	1.4	0.0	19.6
2336	2338	2337	A	4	4	32	0	20	20	5	0	1/0 AL UG	0.20	4.12	24.94	0.0	1.1	0.0	0.6
			B	4	4	32	0	20	20	5	0					0.0	2.0	0.0	0.6
			C	6	6	93	0	59	59	18	0					0.0	1.4	0.0	1.7
2336	2340	2339	A	0	0	0	0	0	245	-30	0	#4 ACSR	0.10	4.01	24.94	0.0	1.2	0.0	11.8
			B	0	0	0	0	0	366	13	0					0.0	2.0	0.1	17.6
			C	0	0	0	0	0	349	5	0					0.0	1.4	0.1	16.7
2340	2342	2341	A	1	1	127	0	81	81	26	0	1/0 AL UG	0.15	4.16	24.94	0.0	1.2	0.0	2.3
			B	1	1	127	0	81	81	26	0					0.0	2.0	0.0	2.3
			C	1	1	127	0	81	81	26	0					0.0	1.4	0.0	2.3
2340	2344	2343	A	2	131	6	2	4	164	-55	0	#4 ACSR	0.49	4.50	24.94	0.1	1.2	0.1	8.3
			B	1	91	6	1	4	285	-13	0					0.2	2.2	0.5	13.7
			C	1	91	6	1	4	269	-21	0					0.1	1.6	0.4	12.9
2344	2346	2345	A	0	0	0	0	0	0	0	0	#4 ACSR	0.02	4.52	24.94	0.0	1.2	0.0	0.0
			B	0	0	0	0	0	66	22	0					0.0	2.2	0.0	3.3
			C	0	0	0	0	0	0	0	0					0.0	1.6	0.0	0.0
2346	2348	2347	B	18	1,185	23	51	15	66	22	0	#4 ACSR	0.66	5.19	24.94	0.0	2.3	0.0	3.3

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2344	2350	2349	A	3	614	0	9	0	159	-57	0	#4 ACSR	1.10	5.60	24.94	0.2	1.4	0.2	8.1
			B	1	807	0	4	0	214	-36	0					0.3	2.5	0.6	10.5
			C	32	848	0	59	0	264	-22	0					0.3	1.9	0.7	12.7
2350	2352	2351	A	11	681	9	22	5	150	-59	0	#4 ACSR	0.36	5.96	24.94	0.0	1.5	0.0	7.7
			B	1	971	0	5	0	209	-37	0					0.1	2.6	0.2	10.2
			C	1	570	0	3	0	205	-41	0					0.1	2.0	0.2	10.0
2352	2354	2353	A	0	0	0	0	0	0	0	0	#4 ACSR	0.33	6.29	24.94	0.0	1.5	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	2.6	0.0	0.0
			C	0	0	0	0	0	20	4	0					0.0	2.0	0.0	1.0
2354	2356	2355	C	8	758	0	20	0	20	4	0	#4 ACSR	2.63	8.92	24.94	0.0	2.0	0.0	1.0
2352	2358	2357	A	2	1,209	54	12	34	122	-67	108	#4 ACSR	1.01	6.97	24.94	0.1	1.6	0.1	6.7
			B	32	739	106	52	68	204	-38	105					0.2	2.8	0.4	10.0
			C	40	801	103	67	65	181	-46	107					0.1	2.1	0.3	9.0
2358	2360	2359	A	0	0	0	0	0	0	0	0	#4 ACSR	0.21	7.17	24.94	0.0	1.6	0.0	0.0
			B	0	0	0	0	0	37	12	0					0.0	2.9	0.0	1.9
			C	0	0	0	0	0	0	0	0					0.0	2.1	0.0	0.0
2360	2362	2361	B	28	571	0	37	0	37	13	0	#4 ACSR	0.40	7.58	24.94	0.0	2.9	0.0	1.9
2358	2364	2363	A	28	407	0	28	0	77	26	0	#2 ACSR	0.11	7.07	24.94	0.0	1.6	0.0	3.0
			B	16	315	0	15	0	46	15	0					0.0	2.9	0.0	1.8
			C	0	0	0	0	0	48	16	0					0.0	2.1	0.0	1.9
2364	2366	2365	A	10	442	4	14	3	17	5	0	#2 ACSR	0.33	7.40	24.94	0.0	1.6	0.0	0.7
			B	12	492	4	18	3	20	7	0					0.0	2.9	0.0	0.8
			C	7	744	4	18	3	21	7	0					0.0	2.1	0.0	0.8

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2364	2368	2367	A	6	554	31	13	20	32	11	0	#2 ACSR	0.20	7.28	24.94	0.0	1.6	0.0	1.3
			B	1	1	18	0	12	12	4	0					0.0	2.9	0.0	0.5
			C	5	363	31	8	20	27	9	0					0.0	2.1	0.0	1.1
2314	2370	2369	A	5	859	0	17	0	130	-66	0	4/0 ACSR	0.31	3.14	24.94	0.0	0.5	0.0	2.9
			B	36	878	0	67	0	147	-60	0					0.0	1.0	0.0	3.1
			C	0	0	0	0	0	100	-77	0					0.0	0.5	0.0	2.5
2370	2372	2371	A	19	668	90	32	57	89	-79	109	#3/0 ACSR	0.70	3.84	24.94	0.0	0.5	-0.1	2.6
			B	7	714	90	17	57	75	-84	108					0.0	1.0	0.1	2.5
			C	12	672	108	23	69	92	-78	109					0.0	0.5	0.1	2.7
2370	2374	2373	A	11	749	0	24	0	24	8	0	#3/0 ACSR	0.50	3.64	24.94	0.0	0.5	-0.1	0.6
			B	1	970	0	5	0	5	1	0					0.0	1.0	0.1	0.1
			C	3	524	0	8	0	8	2	0					0.0	0.5	0.0	0.2

Feeder Data: (Dom. Customers = 807 at an average of 656 kWh/Month) (Measured Demands = 2,673 kW) (Losses = 32 kW) (Total Loading = 3,134 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
182	1280	2401	A	1	1,539	0	10	0	1,162	158	0	4/0 ACSR	0.02	0.02	24.94	0.0	0.0	0.1	22.8
			B	0	0	0	0	0	1,609	269	0					0.0	0.0	0.2	31.7
			C	0	0	0	0	0	1,652	268	0					0.0	0.0	0.1	32.6
1280	2402	1279	A	0	0	0	0	0	1,150	158	0	4/0 ACSR	1.41	1.43	24.94	0.4	0.5	3.3	22.6
			B	1	542	0	4	0	1,607	272	0					0.9	0.9	9.8	31.7
			C	5	442	0	11	0	1,649	270	0					0.6	0.6	5.9	32.5
2402	2404	2403	A	0	0	0	0	0	1,147	155	0	4/0 ACSR	0.21	1.64	24.94	0.1	0.5	0.5	22.6
			B	0	0	0	0	0	1,593	261	0					0.1	1.0	1.4	31.6
			C	0	0	0	0	0	1,632	254	0					0.1	0.7	0.9	32.3
2404	2406	2405	C	37	523	0	52	0	52	12	0	#4 ACSR	0.79	2.43	24.94	0.0	0.7	0.0	2.5
2404	2408	2407	A	1	1	14	0	11	1,146	154	0	4/0 ACSR	0.30	1.94	24.94	0.1	0.6	0.7	22.6
			B	1	1	14	0	11	1,592	259	0					0.2	1.2	2.0	31.6
			C	1	1	14	0	11	1,579	240	0					0.1	0.8	1.1	31.2
2408	2410	2409	A	28	539	0	43	0	194	46	0	#2 ACSR	0.74	2.68	24.94	0.1	0.8	0.1	7.3
			B	4	493	12	11	10	158	36	0					0.1	1.3	0.1	6.0
			C	16	451	0	24	0	91	20	0					0.0	0.9	0.1	3.5
2410	2412	2411	A	3	484	0	8	0	43	10	0	1/0 ACSR	0.22	2.91	24.94	0.0	0.8	0.0	1.3
			B	7	529	0	16	0	113	27	0					0.0	1.3	0.0	3.4
			C	5	279	18	7	14	52	12	0					0.0	0.9	0.0	1.5
2412	2414	2413	A	3	215	40	4	31	35	8	0	#4 ACSR	0.13	3.04	24.94	0.0	0.8	0.0	1.7
			B	15	634	40	31	31	97	23	0					0.0	1.4	0.0	4.7
			C	1	1	40	0	31	31	7	0					0.0	0.9	0.0	1.5
2414	2416	2415	B	16	675	0	35	0	35	8	0	#4 ACSR	0.30	3.34	24.94	0.0	1.4	0.0	1.7

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2410	2418	2417	A	51	765	15	96	11	107	26	0	1/0 ACSR	0.46	3.15	24.94	0.0	0.8	0.0	3.2
			B	9	718	0	25	0	25	5	0					0.0	1.3	0.0	0.7
			C	6	549	0	15	0	15	3	0					0.0	0.9	0.0	0.5
2408	2420	2419	A	6	543	27	15	21	941	105	0	4/0 ACSR	0.51	2.45	24.94	0.1	0.7	0.7	18.5
			B	0	0	14	0	11	1,421	218	0					0.3	1.5	3.0	28.2
			C	13	637	14	29	11	1,476	214	0					0.2	1.0	1.6	29.2
2420	2422	2421	B	1	1,380	0	9	0	97	22	0	#2 ACSR	0.13	2.59	24.94	0.0	1.6	0.0	3.7
			C	2	366	0	5	0	440	77	0					0.1	1.1	0.2	16.6
2422	2424	2423	B	2	196	0	3	0	89	20	0	#2 ACSR	0.41	2.99	24.94	0.1	1.6	0.0	3.4
			C	15	526	0	27	0	435	76	0					0.2	1.2	0.6	16.4
2424	2426	2425	B	1	990	0	6	0	72	17	0	#4 ACSR	0.19	3.18	24.94	0.0	1.6	0.0	3.6
			C	1	990	0	6	0	7	1	0					0.0	1.2	0.0	0.3
2426	2428	2427	B	34	735	0	66	0	66	15	0	#4 ACSR	0.86	4.04	24.94	0.0	1.7	0.0	3.2
2424	2430	2429	B	2	585	8	7	6	13	3	0	#4 ACSR	0.06	3.05	24.94	0.0	1.6	0.0	0.7
			C	7	842	0	25	0	402	68	0					0.0	1.3	0.1	19.4
2430	2432	2431	C	7	608	0	18	0	377	62	0	#2 ACSR	0.39	3.44	24.94	0.1	1.4	0.4	14.2
2432	2434	2433	C	1	1,086	0	7	0	7	1	0	#4 ACSR	0.33	3.77	24.94	0.0	1.4	0.0	0.3
2432	2436	2435	C	18	585	0	33	0	33	-6	0	1/0 AL UG	0.94	4.38	24.94	0.0	1.4	0.0	0.9
2432	2438	2437	C	24	704	0	48	0	318	61	0	#2 ACSR	0.66	4.10	24.94	0.2	1.6	0.4	12.0
2438	2440	2439	C	3	312	0	6	0	194	34	0	#2 ACSR	0.36	4.46	24.94	0.1	1.7	0.1	7.3

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2440	2442	2441	C	4	791	0	16	0	16	4	0	#2 ACSR	0.31	4.77	24.94	0.0	1.7	0.0	0.6
2440	2444	2443	C	35	846	0	77	0	172	29	0	#2 ACSR	0.74	5.20	24.94	0.1	1.8	0.1	6.5
2444	2446	2445	C	13	1,010	0	43	0	43	1	0	1/0 AL UG	0.63	5.83	24.94	0.0	1.8	0.0	1.2
2444	2448	2447	C	1	637	0	4	0	53	9	0	1/0 AL UG	0.19	5.39	24.94	0.0	1.8	0.0	1.5
2448	2450	2449	C	13	439	0	21	0	21	5	0	#2 ACSR	0.25	5.64	24.94	0.0	1.8	0.0	0.8
2448	2452	2451	C	17	502	0	28	0	28	6	0	#2 ACSR	0.58	5.97	24.94	0.0	1.8	0.0	1.1
2438	2456	2455	C	3	1,010	0	16	0	75	16	0	#2 ACSR	0.25	4.35	24.94	0.0	1.7	0.0	2.9
2456	2458	2457	C	4	240	0	6	0	30	6	0	#2 ACSR	0.34	4.69	24.94	0.0	1.7	0.0	1.2
2458	2460	2459	C	11	617	0	25	0	25	5	0	#4 ACSR	0.96	5.65	24.94	0.0	1.7	0.0	1.2
2456	2462	2461	C	19	477	0	29	0	29	6	0	#4 ACSR	0.98	5.33	24.94	0.0	1.7	0.0	1.4
2420	2464	2463	A	18	559	0	32	0	904	96	0	4/0 ACSR	0.74	3.19	24.94	0.2	1.0	1.5	17.8
			B	0	0	0	0	0	1,310	191	0					0.4	1.9	3.1	26.1
			C	89	671	0	141	0	995	124	0					0.1	1.1	0.6	19.7
2464	2466	2465	A	138	587	0	188	0	188	46	0	#4 ACSR	0.55	3.74	24.94	0.1	1.1	0.1	9.2
2464	2468	2467	A	0	0	0	0	0	683	42	0	4/0 ACSR	0.47	3.66	24.94	0.1	1.1	0.5	13.4
			B	1	341	0	3	0	1,307	187	0					0.2	2.1	2.2	26.1
			C	0	0	0	0	0	854	88	0					0.0	1.2	0.2	16.8

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2468	**2470**	2469	A	0	0	0	0	0	0	-1	0	#3/0 ACSR	0.46	**4.12**	24.94	0.0	1.1	-0.1	0.0
			B	0	0	0	0	0	0	-1	0					0.0	**2.1**	0.1	0.0
			C	0	0	0	0	0	0	-1	0					0.0	1.2	0.0	0.0
2468	**2472**	2471	A	6	834	51	22	39	682	43	108	#3/0 ACSR	1.00	**4.66**	24.94	0.3	1.4	1.5	15.2
			B	45	579	51	67	39	1,302	184	106					0.6	2.7	5.1	29.5
			C	13	523	60	24	46	853	88	108					0.1	1.3	0.8	19.1
2472	**2474**	2473	A	1	432	0	3	0	436	88	0	#4 ACSR	0.50	**5.16**	24.94	0.3	1.7	1.0	21.3
			B	25	532	0	39	0	895	182	0					0.7	**3.4**	4.5	44.1
			C	4	614	0	13	0	622	135	0					0.3	1.7	1.6	30.4
2474	**2476**	2475	B	8	483	0	16	0	48	4	0	#4 ACSR	0.23	5.39	24.94	0.0	3.4	0.0	2.3
2476	**2478**	2477	B	15	641	0	32	0	32	0	0	1/0 AL UG	0.55	5.94	24.94	0.0	3.4	0.0	0.9
2474	**2480**	2479	A	0	0	0	0	0	432	88	0	#4 ACSR	0.44	5.60	24.94	0.3	2.0	0.9	21.1
			B	1	225	0	2	0	804	167	0					0.5	3.9	3.3	39.8
			C	4	693	0	14	0	607	132	0					0.3	2.0	1.4	29.7
2480	**2482**	2481	B	16	569	0	30	0	30	-2	0	1/0 AL UG	0.64	6.24	24.94	0.0	3.9	0.0	0.8
2480	**2484**	2483	A	0	0	0	0	0	431	88	0	#4 ACSR	0.31	**5.91**	24.94	0.2	2.2	0.6	21.1
			B	2	362	0	5	0	769	168	0					0.4	**4.2**	2.2	38.4
			C	0	0	0	0	0	591	128	0					0.2	2.2	1.0	29.0
2484	**2486**	2485	A	6	430	0	12	0	12	2	0	#4 ACSR	1.25	7.16	24.94	0.0	2.2	-0.1	0.6
			B	10	531	5	20	4	66	14	0					0.1	**4.4**	0.1	3.3
			C	49	452	17	58	13	72	16	0					0.1	2.2	0.1	3.5
2486	**2488**	2487	B	21	670	0	42	0	42	10	0	#4 ACSR	0.31	7.46	24.94	0.0	4.4	0.0	2.1

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2484	2490	2489	A	5	373	8	10	7	419	87	0	#2 ACSR	0.76	6.67	24.94	0.3	2.5	0.9	16.0
			B	19	648	0	38	0	696	152	0					0.5	4.8	2.7	27.1
			C	14	534	0	26	0	518	112	0					0.3	2.4	1.0	19.8
2490	2492	2491	A	3	603	10	10	8	18	3	0	#2 ACSR	0.89	7.56	24.94	0.0	2.5	-0.1	0.7
			B	51	593	10	77	8	84	20	0					0.0	4.8	0.0	3.3
			C	6	698	32	19	24	43	10	0					0.0	2.5	0.1	1.7
2490	1210	1209	A	2	556	7	7	5	339	71	0	#2 ACSR	0.67	7.34	24.94	0.3	2.7	0.6	13.0
			B	24	544	10	38	8	400	83	0					0.2	5.0	0.6	15.6
			C	2	1,370	10	16	7	155	26	0					0.0	2.5	0.1	5.9
1210	1212	1211	A	1	71	0	1	0	52	10	0	#2 ACSR	0.55	7.88	24.94	0.0	2.8	0.0	2.0
			B	13	396	11	19	8	76	12	0					0.0	5.0	0.0	2.9
			C	0	0	0	0	0	26	3	0					0.0	2.5	0.0	1.0
1212	1214	1213	A	4	322	15	7	11	19	4	0	#4 ACSR	0.42	8.30	24.94	0.0	2.8	0.0	0.9
			B	4	119	17	3	13	16	3	0					0.0	5.0	0.0	0.8
			C	3	162	17	3	13	16	4	0					0.0	2.5	0.0	0.8
1212	1216	1215	A	0	0	0	0	0	33	6	0	#2 ACSR	0.38	8.26	24.94	0.0	2.8	0.0	1.3
			B	1	86	0	1	0	33	2	0					0.0	5.0	0.0	1.3
			C	0	0	0	0	0	9	0	0					0.0	2.5	0.0	0.4
1216	1218	1217	A	10	633	12	24	9	33	7	0	#2 ACSR	0.67	8.94	24.94	0.0	2.8	-0.1	1.3
			B	3	1,218	0	19	0	19	4	0					0.0	5.0	0.0	0.7
			C	1	941	0	6	0	6	1	0					0.0	2.5	0.1	0.2
1216	1220	1219	A	1	1	0	0	0	0	-1	0	#4 ACSR	0.85	9.11	24.94	0.0	2.8	-0.1	0.0
			B	1	1	4	0	3	13	-1	0					0.0	5.0	0.0	0.6
			C	1	1	4	0	3	3	0	0					0.0	2.5	0.1	0.2

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1220	1222	1221	B	3	574	0	10	0	10	-1	0	#4 ACSR	3.82	12.93	24.94	0.0	5.1	0.0	0.5
1210	1224	1223	A	51	624	0	80	0	273	59	0	#2 ACSR	0.58	7.91	24.94	0.2	2.9	0.2	10.5
			B	16	573	0	30	0	277	60	0					0.1	5.1	0.2	10.8
			C	6	302	0	9	0	106	19	0					0.0	2.5	0.1	4.0
1224	1226	1225	A	2	379	7	5	6	10	2	0	#2 ACSR	0.93	8.85	24.94	0.0	2.9	-0.1	0.4
			B	2	143	7	2	6	8	1	0					0.0	5.1	0.1	0.3
1224	1228	1227	A	1	139	22	1	17	182	38	0	#2 ACSR	0.61	8.52	24.94	0.1	3.0	0.1	7.0
			B	45	708	22	81	17	239	52	0					0.1	5.2	0.2	9.4
			C	2	135	22	2	17	97	17	0					0.0	2.5	0.1	3.7
1228	1230	1229	A	1	1	14	0	10	10	-3	0	1/0 AL UG	0.42	8.94	24.94	0.0	3.0	0.0	0.3
			B	23	477	14	33	10	44	6	0					0.0	5.2	0.0	1.2
			C	1	1	14	0	10	10	-3	0					0.0	2.5	0.0	0.3
1228	1232	1231	A	85	485	44	101	34	154	37	0	#2 ACSR	0.30	8.82	24.94	0.0	3.0	0.0	6.0
			B	28	986	25	73	19	98	23	0					0.0	5.2	0.0	3.8
			C	22	838	19	53	15	67	16	0					0.0	2.5	0.0	2.6
1232	1234	1233	A	4	969	0	19	0	19	4	0	1/0 ACSR	0.37	9.19	24.94	0.0	3.0	0.0	0.6
			B	1	809	0	5	0	5	1	0					0.0	5.2	0.0	0.2
			C	0	0	0	0	0	0	0	0					0.0	2.5	0.0	0.0
2490	2494	2493	A	0	0	0	0	0	45	9	0	#2 ACSR	0.21	6.88	24.94	0.0	2.5	0.0	1.7
			B	7	473	0	15	0	172	40	0					0.0	4.8	0.1	6.7
			C	1	43	0	0	0	294	70	0					0.1	2.5	0.1	11.3
2494	2496	2495	A	0	0	0	0	0	0	0	0	#2 ACSR	0.06	6.94	24.94	0.0	2.5	0.0	0.0
			B	0	0	0	0	0	37	9	0					0.0	4.8	0.0	1.5
			C	0	0	0	0	0	0	0	0					0.0	2.5	0.0	0.0

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2496	2498	2497	B	19	636	0	37	0	37	9	0	#4 ACSR	0.46	7.39	24.94	0.0	4.8	0.0	1.9
2494	1202	1201	A	6	605	0	17	0	45	9	0	#2 ACSR	0.91	7.79	24.94	0.0	2.4	-0.1	1.7
			B	50	599	0	76	0	120	28	0					0.1	4.9	0.1	4.7
			C	103	720	0	171	0	293	70	0					0.2	2.7	0.4	11.3
1202	1204	1203	A	1	1	32	0	25	25	6	0	#4 ACSR	0.14	7.93	24.94	0.0	2.4	0.0	1.2
			B	1	800	32	5	25	30	7	0					0.0	4.9	0.0	1.5
			C	2	495	32	6	25	31	8	0					0.0	2.7	0.0	1.6
1202	1206	1205	A	1	1	5	0	4	4	0	0	#2 ACSR	0.41	8.20	24.94	0.0	2.4	0.0	0.1
			B	4	439	5	10	4	13	3	0					0.0	4.9	0.0	0.5
			C	10	598	5	23	4	90	21	0					0.0	2.7	0.1	3.5
1206	1208	1207	C	33	725	0	64	0	64	15	0	#4 ACSR	0.45	8.65	24.94	0.0	2.7	0.0	3.2
2472	1240	1239	A	0	0	0	0	0	183	48	0	#4 ACSR	0.01	4.67	24.94	0.0	1.4	0.0	9.1
			B	0	0	0	0	0	296	76	0					0.0	2.7	0.0	14.7
			C	0	0	0	0	0	161	42	0					0.0	1.3	0.0	7.9
1240	1242	1241	A	0	0	0	0	0	0	0	0	#4 ACSR	0.31	4.98	24.94	0.0	1.4	0.0	0.0
			B	60	735	0	107	0	107	26	0					0.0	2.7	0.0	5.3
			C	0	0	0	0	0	0	0	0					0.0	1.3	0.0	0.0
1240	1052	1009	A	0	0	0	0	0	183	48	0	1.5 MVA SD	0.00	4.67	4.16	0.4	1.8	0.0	36.5
			B	0	0	0	0	0	189	50	0					0.4	3.1	0.0	38.0
			C	0	0	0	0	0	161	42	0					0.3	1.6	0.0	32.0
1052	10001	10001	A	0	0	0	0	0	183	46	0	Regulator	0.00	4.67	4.16	0.0	1.8	0.0	76.0 4.1
			B	0	0	0	0	0	189	47	0					-2.3	0.8	0.0	79.1
			C	0	0	0	0	0	161	40	0					0.0	1.6	0.0	66.6

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
10001	**1002**	1001	A	2	599	0	7	0	183	46	0	1/0 ACSR	0.22	**4.89**	4.16	1.0	**2.8**	1.2	33.1	5.1
			B	11	692	0	27	0	189	47	0					0.8	1.6	1.0	33.7	
			C	0	0	0	0	0	161	40	0					0.7	2.4	0.8	28.9	
1002	**1008**	1007	A	10	483	30	19	23	106	26	0	1/0 ACSR	0.12	**5.02**	4.16	0.3	**3.0**	0.2	19.2	5.3
			B	2	225	13	3	10	65	16	0					0.1	1.7	0.1	11.8	
			C	8	881	30	28	23	97	24	0					0.3	2.6	0.2	17.5	
1008	**1040**	1015	A	7	331	0	11	0	11	3	0	1/0 ACSR	0.15	5.16	4.16	0.0	3.1	0.0	2.0	
			B	1	540	0	4	0	4	1	0					0.0	1.7	0.0	0.7	
			C	1	540	0	4	0	4	1	0					0.0	2.6	0.0	0.7	
1008	**1012**	1011	A	12	514	39	22	30	53	13	0	1/0 ACSR	0.78	**5.79**	4.16	0.9	**3.9**	0.3	9.6	6.2
			B	19	682	11	39	9	48	12	0					0.3	2.1	0.1	8.7	
			C	21	520	11	33	9	42	10	0					0.4	3.1	0.1	7.6	
1002	**1006**	1005	A	29	663	4	53	3	56	14	0	1/0 ACSR	0.80	**5.69**	4.16	0.7	**3.5**	0.3	10.2	5.8
			B	40	699	4	72	3	75	19	0					0.7	2.3	0.3	13.6	
			C	16	601	4	31	3	34	8	0					0.1	2.5	0.0	6.2	
1002	**1004**	1003	A	1	140	15	1	12	13	3	0	1/0 ACSR	0.52	**5.42**	4.16	0.1	**2.9**	0.0	2.3	5.2
			B	6	251	15	8	12	19	5	0					0.2	1.8	0.0	3.5	
			C	10	446	15	18	12	29	7	0					0.2	2.6	0.0	5.3	
1280	**1282**	1281	A	1	35	3	0	2	2	-2	0	#2 ACSR	2.38	**2.41**	24.94	0.0	0.0	-0.2	0.1	
			B	1	1	3	0	2	2	-3	0					0.0	0.0	0.0	0.1	
			C	1	1	3	0	2	3	-2	0					0.0	0.0	0.2	0.1	

Feeder Data: (Dom. Customers = 1,899 at an average of 612 kWh/Month) (Measured Demands = 1,137 kW) (Losses = 78 kW) (Total Loading = 4,423 kW)

185 - Saffel Canyon

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
185	1102	1101	A	1	99	0	1	0	110	35	0	#3/0 ACSR	2.01	2.01	24.94	0.1	0.1	-0.3	2.5
			B	1	904	0	6	0	175	58	0					0.2	0.2	0.4	4.1
			C	1	99	0	1	0	163	54	0					0.1	0.1	0.2	3.8
1102	1104	1103	C	8	585	0	21	0	21	7	0	#4 ACSR	0.61	2.62	24.94	0.0	0.1	0.0	1.1
1102	1106	1105	A	0	0	0	0	0	0	0	0	#3/0 ACSR	0.04	2.05	24.94	0.0	0.1	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.2	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.1	0.0	0.0
1102	1108	1107	A	0	0	0	0	0	109	38	0	3/0 ACSR	0.44	2.45	24.94	0.0	0.1	0.0	2.5
			B	8	442	0	16	0	169	58	0					0.0	0.2	0.0	3.9
			C	2	820	0	11	0	141	49	0					0.0	0.2	0.1	3.3
1108	1110	1109	A	0	0	0	0	0	0	0	0	3/0 ACSR	0.10	2.56	24.94	0.0	0.1	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.2	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.2	0.0	0.0
1108	1112	1111	A	1	1	14	0	11	109	38	0	3/0 ACSR	0.27	2.73	24.94	0.0	0.1	0.0	2.6
			B	1	1	14	0	11	152	53	0					0.0	0.2	0.0	3.6
			C	3	974	14	17	11	130	45	0					0.0	0.2	0.0	3.0
1112	1114	1113	A	0	0	0	0	0	2	-1	0	#2 ACSR	0.08	2.81	24.94	0.0	0.1	0.0	0.1
			B	0	0	0	0	0	47	15	0					0.0	0.3	0.0	1.8
			C	0	0	0	0	0	8	0	0					0.0	0.2	0.0	0.3
1114	1116	1115	A	0	0	0	0	0	2	-1	0	#2 ACSR	0.15	2.96	24.94	0.0	0.1	0.0	0.1
			B	0	0	0	0	0	47	15	0					0.0	0.3	0.0	1.8
			C	0	0	0	0	0	8	0	0					0.0	0.2	0.0	0.3
1116	1118	1117	B	1	511	0	4	0	4	1	0	#4 ACSR	0.10	3.06	24.94	0.0	0.3	0.0	0.2

185 - Saffel Canyon

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1116	1120	1119	B	10	313	0	14	0	41	15	0	#4 ACSR	0.53	3.48	24.94	0.0	0.3	-0.1	2.1
			C	1	97	0	1	0	1	0	0					0.0	0.2	0.1	0.0
1120	1122	1121	B	11	635	0	28	0	28	10	0	#4 ACSR	0.52	4.01	24.94	0.0	0.3	0.0	1.4
1116	1124	1123	A	1	1	2	0	2	2	-1	0	#4 ACSR	1.24	4.20	24.94	0.0	0.1	-0.1	0.1
			B	1	1	2	0	2	2	-1	0					0.0	0.3	0.0	0.1
			C	1	1	2	0	2	7	1	0					0.0	0.2	0.1	0.3
1124	1126	1125	C	3	252	0	5	0	5	2	0	#4 ACSR	0.27	4.47	24.94	0.0	0.2	0.0	0.3
1112	1128	1127	A	1	310	0	3	0	96	35	0	3/0 ACSR	0.31	3.04	24.94	0.0	0.2	0.0	2.3
			B	0	0	0	0	0	93	34	0					0.0	0.3	0.0	2.2
			C	0	0	0	0	0	93	35	0					0.0	0.2	0.0	2.2
1128	1130	1129	A	0	0	0	0	0	0	0	0	3/0 ACSR	0.05	3.09	24.94	0.0	0.2	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.2	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.2	0.0	0.0
1128	1132	1131	A	1	1	111	0	93	93	35	0	3/0 ACSR	0.03	3.07	24.94	0.0	0.2	0.0	2.2
			B	1	1	111	0	93	93	35	0					0.0	0.3	0.0	2.2
			C	1	1	111	0	93	93	35	0					0.0	0.2	0.0	2.2

Feeder Data: (Dom. Customers = 59 at an average of 435 kWh/Month) (Measured Demands = 382 kW) (Losses = 1 kW) (Total Loading = 448 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
71	1982	6145	A	0	0	0	0	0	2,213	94	0	477 ACSR	0.82	0.82	24.94	0.4	0.4	5.6	21.9
			B	0	0	0	0	0	2,298	113	0					0.2	0.2	3.0	22.7
			C	0	0	0	0	0	1,829	4	0					0.1	0.1	0.9	18.1
1982	1978	1981	A	10	506	0	17	0	2,207	84	0	1/0 Cu	0.26	1.07	24.94	0.2	0.6	3.8	47.3
			B	0	0	0	0	0	2,295	102	0					0.2	0.4	3.1	49.1
			C	13	640	0	25	0	1,828	-2	0					0.1	0.2	1.5	39.0
1978	1980	1979	C	66	695	0	99	0	99	18	0	#4 ACSR	1.13	2.20	24.94	0.1	0.2	0.1	4.7
1978	3340	1977	A	1	831	0	5	0	2,186	77	109	1/0 Cu	0.27	1.35	24.94	0.2	0.8	4.1	46.9
			B	37	674	53	58	36	2,292	97	109					0.2	0.6	3.1	49.1
			C	1	1,414	0	8	0	1,702	-27	110					0.1	0.3	1.3	36.4
3340	3354	3341	A	8	25	292	1	200	202	34	0	1/0 AL UG	0.33	1.68	24.94	0.0	0.9	0.1	5.6
			B	8	25	292	1	200	202	34	0					0.0	0.6	0.1	5.6
			C	9	23	292	1	200	201	34	0					0.0	0.3	0.1	5.6
3340	3336	3339	A	2	2	15	0	11	1,975	147	0	1/0 Cu	0.06	1.40	24.94	0.1	0.9	0.7	42.5
			B	2	2	15	0	11	1,992	150	0					0.0	0.6	0.5	42.8
			C	2	2	15	0	11	1,491	46	0					0.0	0.3	0.2	31.9
3336	3338	3337	A	52	523	8	62	5	67	12	0	#4 ACSR	0.41	1.81	24.94	0.0	0.9	0.0	3.3
3336	3416	3335	A	57	542	42	70	29	1,897	132	0	1/0 Cu	0.70	2.11	24.94	0.6	1.4	7.8	40.8
			B	21	694	34	38	24	1,981	147	0					0.4	1.0	6.2	42.6
			C	15	426	34	20	24	1,480	43	0					0.2	0.5	2.6	31.7
3416	3418	3417	C	18	561	0	28	0	28	5	0	#6A CWC o	0.37	2.48	24.94	0.0	0.5	0.0	1.4

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Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
3416	1966	1999	A	1	63	0	1	0	1,790	106	0	1/0 Cu	0.32	2.42	24.94	0.2	1.7	3.3	38.7
			B	0	0	0	0	0	1,913	126	0					0.2	1.2	2.7	41.2
			C	31	746	0	55	0	1,406	27	0					0.1	0.6	1.0	30.1
1966	1970	1969	A	40	797	8	72	5	637	117	0	#2 ACSR	0.25	2.68	24.94	0.2	1.8	0.7	24.1
			B	0	0	0	0	0	457	84	0					0.1	1.3	0.3	17.2
			C	41	619	15	59	10	335	60	0					0.1	0.6	0.2	12.6
1970	6184	1971	A	7	697	0	18	0	321	60	0	#4 ACSR	0.32	3.00	24.94	0.1	2.0	0.4	15.7
			C	79	427	0	75	0	109	20	0					0.1	0.7	0.0	5.3
6184	6186	6185	A	88	688	6	127	4	131	25	0	#4 ACSR	0.17	3.16	24.94	0.0	2.0	0.0	6.4
6184	1972	3311	A	133	605	7	166	5	171	32	0	#4 ACSR	0.49	3.48	24.94	0.1	2.0	0.2	8.4
			C	10	887	7	29	5	34	6	0					0.0	0.7	-0.1	1.6
1970	1984	1983	A	12	768	10	28	7	237	42	0	#2 ACSR	1.00	3.67	24.94	0.3	2.1	0.4	9.0
			B	4	294	31	6	21	457	84	0					0.4	1.7	1.4	17.2
			C	52	719	23	82	16	157	27	0					0.0	0.6	0.1	5.9
1984	1986	1985	B	73	598	0	94	0	94	17	0	#4 ACSR	1.37	5.04	24.94	0.1	1.8	0.1	4.6
1984	6202	6201	A	1	1	50	0	34	202	36	0	#2 ACSR	0.42	4.09	24.94	0.1	2.2	0.1	7.7
			B	28	625	50	44	34	334	62	0					0.1	1.8	0.3	12.6
			C	3	540	68	8	47	59	10	0					0.0	0.6	0.0	2.2
6202	6204	6203	B	112	672	26	155	18	173	33	0	#4 ACSR	0.40	4.49	24.94	0.1	1.9	0.1	8.4
6202	1988	1975	A	0	0	0	0	0	167	30	0	#2 ACSR	0.27	4.36	24.94	0.1	2.3	0.0	6.3
			B	18	557	0	28	0	83	15	0					0.0	1.8	0.0	3.1
			C	0	0	0	0	0	4	0	0					0.0	0.6	0.0	0.1

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1988	6210	6209	A	136	472	45	136	31	167	31	0	#4 ACSR	0.80	5.16	24.94	0.1	2.4	0.1	8.2
1988	1976	1987	A	0	0	0	0	0	0	0	0	#2 ACSR	0.39	4.74	24.94	0.0	2.3	0.0	0.0
			B	38	607	0	54	0	54	10	0					0.0	1.9	0.0	2.1
			C	1	603	0	4	0	4	0	0					0.0	0.6	0.0	0.1
1966	3292	1965	A	0	0	0	0	0	1,150	-14	0	1/0 Cu	0.21	2.63	24.94	0.1	1.8	0.9	24.9
			B	0	0	0	0	0	1,453	39	0					0.1	1.3	1.2	31.3
			C	5	1,333	0	26	0	1,015	-45	0					0.0	0.6	0.3	21.8
3292	3484	3485	A	9	514	0	17	0	17	-6	0	1/0 AL UG	0.74	3.37	24.94	0.0	1.8	0.0	0.5
			B	88	414	11	81	7	88	8	0					0.0	1.4	0.0	2.4
			C	3	736	0	11	0	11	-7	0					0.0	0.6	0.0	0.4
3292	1958	3299	A	0	0	0	0	0	1,133	-8	0	1/0 Cu	0.12	2.75	24.94	0.1	1.8	0.5	24.5
			B	0	0	0	0	0	1,364	30	0					0.1	1.4	0.6	29.4
			C	3	1,423	0	20	0	977	-43	0					0.0	0.6	0.2	21.0
1958	3440	1959	A	0	0	0	0	0	0	0	0	1/0 ACSR	0.21	2.96	24.94	0.0	1.8	0.0	0.0
			B	3	1,232	0	17	0	17	3	0					0.0	1.4	0.0	0.5
			C	1	1,223	0	7	0	7	1	0					0.0	0.6	0.0	0.2
1958	3284	1957	A	6	596	0	15	0	1,132	-8	0	1/0 Cu	0.25	2.99	24.94	0.1	1.9	1.0	24.5
			B	10	903	0	29	0	1,346	27	0					0.1	1.5	1.1	29.0
			C	8	355	0	11	0	951	-48	0					0.0	0.7	0.3	20.4
3284	1960	3427	A	3	471	415	7	285	586	111	0	#2 ACSR	0.41	3.40	24.94	0.2	2.1	0.8	22.3
			B	14	1,460	472	56	324	421	79	0					0.1	1.6	0.4	15.9
			C	2	59	472	1	324	552	103	0					0.2	0.9	0.9	20.7
1960	1964	1963	C	130	723	0	190	0	191	35	0	#4 ACSR	1.00	4.41	24.94	0.1	1.0	0.2	9.2

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Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1960	3288	3291	A	44	739	51	73	35	293	55	0	#2 ACSR	0.38	3.79	24.94	0.1	2.3	0.2	11.1
			B	3	399	51	6	35	41	7	0					0.0	1.6	0.0	1.6
			C	1	1	51	0	35	35	6	0					0.0	0.9	0.0	1.3
3288	1962	1961	A	108	766	24	168	16	185	35	0	#4 ACSR	0.71	4.49	24.94	0.1	2.4	0.1	9.0
3284	3274	3285	A	16	477	91	23	62	530	-122	107	1/0 Cu	0.39	3.38	24.94	0.1	2.0	0.4	11.8
			B	60	686	160	90	110	894	-59	107					0.1	1.6	0.8	19.4
			C	59	509	79	68	54	388	-154	109					0.0	0.6	0.0	9.0
3274	3258	3257	A	3	848	46	12	31	395	-35	0	#4 ACSR	0.19	3.57	24.94	0.1	2.1	0.3	19.0
			B	4	657	46	12	31	659	9	0					0.2	1.8	0.8	31.6
			C	11	1,872	46	59	31	251	-64	0					0.0	0.7	0.1	12.3
3258	3264	3263	A	37	1,340	13	107	9	351	-43	0	#4 ACSR	0.15	3.72	24.94	0.1	2.2	0.2	17.0
			B	2	94	0	1	0	615	1	0					0.1	1.9	0.6	29.5
			C	0	0	0	0	0	161	-81	0					0.0	0.7	0.0	8.6
3264	6256	6255	A	9	919	0	28	0	98	-90	0	#4 ACSR	0.74	4.46	24.94	0.1	2.3	0.0	6.4
			B	9	919	0	28	0	613	0	0					0.6	2.5	3.1	29.4
			C	11	1,360	0	44	0	161	-81	0					0.0	0.6	0.1	8.6
6256	1942	1941	A	1	1	1	0	1	1	-1	0	#4 ACSR	0.72	5.18	24.94	0.1	2.4	-0.1	0.0
			B	78	727	23	119	16	494	84	0					0.5	3.0	1.6	24.1
			C	10	892	1	29	1	30	5	0					-0.1	0.5	0.1	1.4
1942	1944	1943	B	1	905	50	5	34	357	59	0	#6A CWC o	2.66	7.84	24.94	1.4	4.4	3.9	17.5
1944	1946	1945	B	14	1,559	32	59	22	81	15	0	#6A CWC o	0.77	8.61	24.94	0.1	4.5	0.0	4.0
1944	1948	1947	B	112	694	75	160	51	233	36	0	#6A CWC o	2.69	10.53	24.94	0.6	5.1	0.9	11.5

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1948	1950	1949	B	17	411	0	21	0	21	-2	0	#6A CWC o	6.56	17.09	24.94	0.1	5.1	0.0	1.0
6256	6258	6257	A	1	1	101	0	70	70	-94	106	#4 ACSR	0.62	5.08	24.94	0.0	2.3	0.0	5.6
			B	1	1	129	0	88	89	-90	106					0.0	2.6	0.1	6.1
			C	4	964	101	17	70	87	-93	109					0.0	0.6	0.1	6.1
3264	3268	3267	A	91	724	0	137	0	137	25	0	#6A CWC o	0.80	4.52	24.94	0.1	2.3	0.1	6.7
3274	3252	3251	A	0	0	0	0	0	50	3	0	1/0 Cu	0.13	3.51	24.94	0.0	2.0	0.0	1.1
			B	6	1,490	0	33	0	35	0	0					0.0	1.6	0.0	0.8
			C	6	482	0	12	0	15	-4	0					0.0	0.6	0.0	0.3
3252	3482	3481	A	37	563	1	50	1	50	4	0	1/0 AL UG	0.48	3.98	24.94	0.0	2.0	0.0	1.4
			B	2	112	1	2	1	2	-6	0					0.0	1.6	0.0	0.2
			C	3	105	1	2	1	2	-6	0					0.0	0.6	0.0	0.2
3252	3632	3631	A	0	0	0	0	0	0	0	0	1/0 Cu	0.15	3.66	24.94	0.0	2.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	1.6	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.6	0.0	0.0

Feeder Data: (Dom. Customers = 2,276 at an average of 658 kWh/Month) (Measured Demands = 3,983 kW) (Losses = 78 kW) (Total Loading = 6,339 kW)

72 - Springer Mountain South

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
72	224	299	A	1	133	0	1	0	757	13	0	477 ACSR	0.84	0.84	24.94	0.1	0.1	0.4	7.5
			B	1	133	0	1	0	850	30	0					0.1	0.1	0.6	8.4
			C	1	133	0	1	0	850	32	0					0.1	0.1	0.4	8.4
224	220	223	A	33	916	179	58	102	756	13	110	3/0 ACSR	0.77	1.60	24.94	0.2	0.3	1.0	16.7
			B	21	488	179	23	102	848	30	110					0.2	0.3	1.5	18.7
			C	34	981	179	63	102	849	32	110					0.2	0.2	1.2	18.7
220	222	221	B	57	892	18	90	10	100	16	0	#4 ACSR	1.07	2.67	24.94	0.1	0.4	0.1	4.8
220	206	219	A	1	1	13	0	8	595	95	0	3/0 ACSR	0.07	1.67	24.94	0.0	0.3	0.1	13.3
			B	5	689	24	12	14	622	101	0					0.0	0.3	0.1	13.9
			C	1	1	13	0	8	683	112	0					0.0	0.3	0.1	15.3
206	208	207	A	1	1	26	0	15	246	36	0	#4 ACSR	0.10	1.78	24.94	0.0	0.3	0.1	11.8
			B	1	1	26	0	15	172	25	0					0.0	0.4	0.0	8.2
			C	2	82	26	1	15	182	27	0					0.0	0.3	0.0	8.7
208	214	213	A	4	634	0	10	0	161	22	0	#4 ACSR	0.18	1.95	24.94	0.0	0.4	0.0	7.7
			B	0	0	0	0	0	0	-4	0					0.0	0.4	0.0	0.2
			C	5	611	0	11	0	13	-2	0					0.0	0.3	0.0	0.6
214	218	217	A	93	769	0	122	0	122	20	0	#4 ACSR	1.83	3.78	24.94	0.2	0.5	0.2	5.9
214	216	215	A	14	854	0	29	0	29	1	0	1/0 AL UG	0.30	2.25	24.94	0.0	0.4	0.0	0.8
			B	0	0	0	0	0	0	-4	0					0.0	0.4	0.0	0.1
			C	1	405	0	2	0	2	-3	0					0.0	0.3	0.0	0.1
208	210	209	A	3	1,025	57	12	33	70	11	0	#4 ACSR	0.24	2.01	24.94	0.0	0.3	0.0	3.4
			B	3	1,025	57	12	33	157	27	0					0.1	0.4	0.1	7.5
			C	11	1,016	57	29	33	153	26	0					0.0	0.3	0.1	7.3

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
210	212	211	A	1	1	45	0	25	25	4	0	#4 ACSR	0.55	2.56	24.94	0.0	0.4	0.0	1.2
			B	39	741	100	55	57	112	19	0					0.1	0.5	0.1	5.4
			C	23	1,103	70	51	40	91	15	0					0.0	0.4	0.1	4.4
206	202	205	A	0	0	0	0	0	341	57	0	3/0 ACSR	0.07	1.75	24.94	0.0	0.3	0.0	7.6
			B	8	2,530	0	52	0	424	71	0					0.0	0.4	0.0	9.5
			C	2	863	0	8	0	494	84	0					0.0	0.3	0.0	11.1
202	198	201	A	4	744	11	11	6	177	29	0	3/0 ACSR	0.37	2.11	24.94	0.0	0.3	0.0	4.0
			B	4	744	11	11	6	183	30	0					0.0	0.4	0.0	4.1
			C	8	705	62	17	35	177	29	0					0.0	0.3	0.1	4.0
198	200	199	A	77	665	6	90	3	94	16	0	#6A CWC o	0.43	2.54	24.94	0.0	0.4	0.0	4.5
			B	6	838	7	16	4	20	3	0					0.0	0.4	0.0	1.0
			C	7	1,046	23	22	13	35	6	0					0.0	0.3	0.0	1.7
198	188	197	A	1	1	3	0	2	65	10	0	3/0 ACSR	0.20	2.31	24.94	0.0	0.3	0.0	1.5
			B	9	1,615	3	38	2	146	24	0					0.0	0.4	0.0	3.3
			C	4	1,459	3	20	2	90	14	0					0.0	0.3	0.0	2.0
188	292	291	A	15	783	63	28	36	64	10	0	3/0 ACSR	0.82	3.13	24.94	0.0	0.3	-0.1	1.4
			B	101	487	32	88	18	106	17	0					0.0	0.4	0.0	2.4
			C	44	450	50	39	28	67	11	0					0.0	0.3	0.1	1.5
202	204	203	A	1	1	4	0	2	164	28	0	#4 ACSR	0.12	1.87	24.94	0.0	0.3	0.0	7.9
			B	1	1	4	0	2	188	32	0					0.0	0.4	0.0	9.1
			C	28	813	4	46	2	309	54	0					0.0	0.3	0.1	14.9
204	294	293	A	34	283	248	21	141	162	28	0	#4 ACSR	0.32	2.19	24.94	0.1	0.4	0.0	7.8
			B	49	401	259	39	147	186	32	0					0.1	0.5	0.1	9.0
			C	106	527	285	99	163	261	45	0					0.1	0.4	0.2	12.6

Feeder Data: (Dom. Customers = 865 at an average of 689 kWh/Month) (Measured Demands = 2,147 kW) (Losses = 7 kW) (Total Loading = 2,457 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
141	1502	1501	A	3	737	0	9	0	244	-17	0	#6A CWC o	0.74	0.74	24.94	0.2	0.2	0.4	11.5
			B	2	919	0	8	0	456	63	0					0.5	0.5	1.6	21.8
			C	7	445	0	10	0	280	8	0					0.2	0.2	0.5	13.2
1502	1504	1503	B	14	339	0	13	0	13	6	0	#4 ACSR	0.40	1.14	24.94	0.0	0.5	0.0	0.7
1502	1506	1505	A	2	2,413	0	19	0	234	-21	0	#6A CWC o	2.85	3.59	24.94	0.8	1.0	1.2	11.1
			B	3	352	0	5	0	434	53	0					1.7	2.2	5.8	20.7
			C	3	396	0	5	0	269	4	0					0.7	0.9	1.8	12.7
1506	1508	1507	B	4	276	0	5	0	5	1	0	#6A CWC o	1.51	5.10	24.94	0.0	2.2	0.0	0.2
1506	1510	1509	A	0	0	0	0	0	214	-27	0	#6A CWC o	2.16	5.75	24.94	0.6	1.6	0.8	10.3
			B	3	746	0	9	0	418	51	0					1.3	3.5	4.2	20.3
			C	0	0	0	0	0	262	3	0					0.5	1.5	1.3	12.5
1510	1512	1511	A	0	0	0	0	0	181	-20	0	#6A CWC o	0.15	5.90	24.94	0.0	1.6	0.0	8.7
			B	1	357	0	2	0	194	-10	0					0.0	3.5	0.1	9.4
			C	0	0	0	0	0	183	-18	0					0.0	1.5	0.1	8.8
1512	1514	1513	A	0	0	0	0	0	181	-20	0	#6A CWC o	0.09	5.99	24.94	0.0	1.6	0.0	8.7
			B	0	0	0	0	0	192	-11	0					0.0	3.5	0.0	9.4
			C	0	0	0	0	0	182	-18	0					0.0	1.5	0.0	8.8
1514	1516	1515	A	0	0	0	0	0	43	23	0	#6A CWC o	0.05	6.04	24.94	0.0	1.7	0.0	2.3
			B	0	0	0	0	0	96	50	0					0.0	3.6	0.0	5.2
			C	5	104	0	2	0	89	46	0					0.0	1.5	0.0	4.8
1516	1520	1519	A	10	473	52	14	30	43	23	0	#6A CWC o	0.44	6.48	24.94	0.0	1.7	0.0	2.3
			B	69	527	49	67	28	96	50	0					0.0	3.6	0.0	5.2
			C	45	662	52	57	30	86	45	0					0.0	1.6	0.1	4.7

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1514	1522	1521	A	1	1	26	0	15	137	-43	0	#6A CWC o	0.85	6.84	24.94	0.1	1.8	0.1	6.9
			B	17	812	26	32	15	97	-61	0					0.0	3.6	0.1	5.5
			C	32	428	48	29	28	94	-64	0					0.1	1.6	0.2	5.4
1522	1524	1523	A	77	483	0	69	0	69	36	0	#6A CWC o	0.57	7.41	24.94	0.0	1.8	0.0	3.7
1522	1526	1525	A	0	0	0	0	0	53	-86	0	#6A CWC o	0.09	6.93	24.94	0.0	1.8	0.0	4.8
			B	4	221	0	4	0	50	-85	0					0.0	3.6	0.0	4.8
			C	0	0	0	0	0	37	-94	0					0.0	1.6	0.0	4.8
1526	1528	1527	A	24	526	0	28	0	28	14	0	#4 ACSR	0.34	7.27	24.94	0.0	1.8	0.0	1.5
1526	1530	1529	A	4	422	0	7	0	25	-100	0	#6A CWC o	1.38	8.31	24.94	0.0	1.8	0.0	4.9
			B	23	322	0	17	0	46	-87	0					0.0	3.6	0.1	4.8
			C	8	416	0	11	0	37	-94	0					0.0	1.6	0.3	4.8
1530	1532	1531	A	4	120	0	2	0	19	-102	0	#6A CWC o	0.76	9.07	24.94	0.0	1.7	0.0	5.0
			B	3	207	0	3	0	28	-94	0					0.0	3.6	0.1	4.8
			C	1	489	0	3	0	26	-98	0					0.0	1.5	0.1	4.8
1532	1534	1533	A	0	0	0	0	0	0	-1	0	#6A CWC o	1.34	10.41	24.94	0.0	1.7	-0.2	0.1
			B	1	1	1	0	1	1	-1	0					0.0	3.6	0.2	0.1
1532	1536	1535	A	8	350	13	9	7	16	-101	107	#6A CWC o	2.16	11.23	24.94	-0.1	1.7	0.0	4.9
			B	18	383	12	17	7	24	-94	104					0.0	3.6	0.2	4.7
			C	16	376	13	15	7	23	-98	108					-0.1	1.5	0.4	4.8
1510	1538	1537	A	0	0	0	0	0	32	-5	0	#6A CWC o	0.10	5.85	24.94	0.0	1.6	0.0	1.6
			B	0	0	0	0	0	211	57	0					0.0	3.5	0.1	10.6
			C	0	0	0	0	0	78	23	0					0.0	1.5	0.0	3.9

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
1538	1540	1539	A	7	348	0	8	0	32	-5	0	#6A CWC o	3.25	9.10	24.94	0.1	1.7	-0.2	1.6	
			B	3	400	0	5	0	211	57	0					1.1	4.6	1.8	10.6	
			C	0	0	0	0	0	78	23	0					0.2	1.6	0.3	3.9	
1540	10001	10001	A	0	0	0	0	0	24	-5	0	Regulator	0.00	9.10	24.94	0.0	1.7	0.0	3.3	
			B	0	0	0	0	0	204	57	0					-3.0	1.6	0.0	29.1	
			C	0	0	0	0	0	78	27	0					0.0	1.6	0.0	11.1	
10001	1542	1541	A	0	0	0	0	0	24	-5	0	#6A CWC o	0.00	9.10	24.94	0.0	1.7	0.0	1.2	
			B	0	0	0	0	0	204	57	0					0.0	1.6	0.0	10.1	
			C	0	0	0	0	0	78	27	0					0.0	1.6	0.0	3.9	
1542	1544	1543	A	0	0	0	0	0	24	-5	0	#6A CWC o	4.75	13.85	24.94	0.2	1.9	-0.4	1.2	
			B	0	0	0	0	0	204	57	0					1.6	3.2	2.5	10.1	
			C	0	0	0	0	0	78	27	0					0.3	1.9	0.5	3.9	
1544	1546	1545	A	0	0	0	0	0	25	1	0	#4 ACSR	0.69	14.54	24.94	0.0	1.9	-0.1	1.2	
			B	0	0	0	0	0	201	62	0					0.2	3.4	0.4	10.2	6.4
			C	0	0	0	0	0	77	33	0					0.0	2.0	0.1	4.0	
1546	1548	1547	C	10	2,549	0	61	0	61	30	0	#4 ACSR	2.85	17.39	24.94	0.2	2.1	0.1	3.3	5.1
1546	1550	1549	A	0	0	0	0	0	25	1	0	#4 ACSR	0.25	14.79	24.94	0.0	1.9	0.0	1.2	
			B	0	0	0	0	0	201	63	0					0.1	3.5	0.1	10.2	
			C	0	0	0	0	0	16	4	0					0.0	1.9	0.0	0.8	
1550	1552	1551	B	13	354	0	13	0	13	6	0	#6A CWC o	0.47	15.26	24.94	0.0	3.5	0.0	0.7	
1550	1554	1553	A	0	0	0	0	0	25	2	0	#4 ACSR	0.69	15.48	24.94	0.0	2.0	-0.1	1.2	
			B	0	0	0	0	0	188	57	0					0.2	3.7	0.3	9.5	
			C	3	719	0	9	0	16	4	0					0.0	1.9	0.1	0.8	

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
1554	1556	1555	A	6	332	0	7	0	25	2	0	#6A CWC o	2.98	18.46	24.94	0.2	2.1	-0.2	1.2	
			B	28	447	0	27	0	188	57	0					0.8	4.5	1.1	9.6	7.5
			C	2	755	0	7	0	7	0	0					-0.2	1.7	0.2	0.3	
1556	1558	1557	B	3	405	0	5	0	86	24	0	#6A CWC o	1.13	19.59	24.94	0.2	4.7	0.1	4.4	7.7
1558	1560	1559	B	26	759	0	41	0	81	22	0	#4 ACSR	8.40	27.99	24.94	0.8	5.5	0.4	4.1	8.5
1560	1562	1561	B	6	429	0	9	0	9	2	0	#4 ACSR	3.46	31.45	24.94	0.0	5.5	0.0	0.5	8.5
1560	1564	1563	B	4	305	0	5	0	30	6	0	#4 ACSR	6.73	34.72	24.94	0.3	5.8	0.1	1.5	8.8
1564	1566	1565	B	4	1,836	0	25	0	25	9	0	#4 ACSR	4.55	39.27	24.94	0.1	5.9	0.0	1.3	8.9
1556	1568	1567	A	1	1	14	0	8	18	2	0	#6A CWC o	1.49	19.95	24.94	0.1	2.2	-0.2	0.9	
			B	0	0	0	0	0	73	22	0					0.2	4.7	0.3	3.7	7.7
1568	1570	1569	A	9	385	0	11	0	10	-1	0	#6A CWC o	5.97	25.92	24.94	0.1	2.3	-0.8	0.5	
			B	64	362	0	45	0	73	23	0					0.5	5.2	1.0	3.8	8.2
1570	1572	1571	B	1	467	0	2	0	27	5	0	#6A CWC o	2.50	28.42	24.94	0.1	5.3	0.0	1.3	
1572	1574	1573	B	4	438	0	7	0	7	2	0	#6A CWC o	2.16	30.58	24.94	0.0	5.3	0.0	0.4	
1572	1576	1575	B	7	777	0	17	0	17	4	0	#6A CWC o	5.26	33.68	24.94	0.1	5.3	0.0	0.9	8.3

Feeder Data: (Dom. Customers = 613 at an average of 523 kWh/Month) (Measured Demands = 306 kW) (Losses = 27 kW) (Total Loading = 980 kW)

142 - Stevens Glenwood

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
142	1602	1601	A	0	0	0	0	0	258	49	0	#6A CWC o	0.46	0.46	24.94	0.2	0.2	0.3	12.7
			B	0	0	0	0	0	256	48	0					0.2	0.2	0.3	12.5
			C	0	0	0	0	0	181	30	0					0.1	0.1	0.2	8.8
1602	1604	1603	A	1	776	0	4	0	4	1	0	#6A CWC o	0.31	0.77	24.94	0.0	0.2	0.0	0.2
1602	1606	1605	A	0	0	0	0	0	254	49	0	#4 ACSR	0.87	1.33	24.94	0.3	0.5	0.6	12.5
			B	1	1	4	0	2	255	48	0					0.3	0.4	0.6	12.5
			C	5	497	4	9	2	181	31	0					0.2	0.3	0.3	8.8
1606	1608	1607	A	2	497	0	5	0	5	1	0	#4 ACSR	0.99	2.32	24.94	0.0	0.5	0.0	0.2
1606	1610	1609	A	0	0	0	0	0	249	48	0	#4 ACSR	0.87	2.20	24.94	0.3	0.8	0.5	12.3
			B	0	0	0	0	0	252	48	0					0.3	0.7	0.6	12.4
			C	0	0	0	0	0	169	27	0					0.2	0.5	0.3	8.3
1610	1612	1611	A	31	452	0	30	0	30	11	0	#6A CWC o	0.60	2.80	24.94	0.0	0.9	0.0	1.5
			B	14	238	0	9	0	9	3	0					0.0	0.7	0.0	0.5
			C	44	447	0	39	0	39	15	0					0.0	0.5	0.1	2.0
1610	1614	1613	A	4	366	0	6	0	219	38	0	#6A CWC o	4.23	6.43	24.94	1.4	2.2	2.0	10.8
			B	1	1,902	0	9	0	242	46	0					1.3	2.0	2.4	12.0
			C	1	1,018	0	5	0	129	13	0					0.5	1.0	0.9	6.3
1614	1616	1615	A	0	0	0	0	0	211	40	0	#6A CWC o	0.81	7.24	24.94	0.3	2.5	0.4	10.5
			B	0	0	0	0	0	231	47	0					0.2	2.3	0.4	11.6
			C	0	0	0	0	0	123	16	0					0.1	1.1	0.2	6.0
1616	1618	1617	A	0	0	0	0	0	210	41	0	3#5 ALW	0.26	7.50	24.94	0.1	2.6	0.2	8.7
			B	0	0	0	0	0	231	48	0					0.1	2.4	0.2	9.5
			C	5	836	0	15	0	123	17	0					0.0	1.1	0.1	5.0

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1618	1620	1619	A	0	0	0	0	0	210	41	0	#6A CWC o	1.35	8.85	24.94	0.5	3.1	0.7	10.5
			B	0	0	0	0	0	231	48	0					0.4	2.8	0.7	11.6
			C	0	0	0	0	0	108	12	0					0.1	1.3	0.2	5.3
1620	1622	1621	A	0	0	0	0	0	209	42	0	#6A CWC o	0.22	9.07	24.94	0.1	3.1	0.1	10.5
			B	0	0	0	0	0	230	49	0					0.1	2.9	0.1	11.6
			C	0	0	0	0	0	108	13	0					0.0	1.3	0.0	5.3
1622	1624	1623	A	0	0	0	0	0	209	42	0	3#5 ALW	0.41	9.48	24.94	0.2	3.3	0.2	8.7
			B	0	0	0	0	0	230	49	0					0.2	3.0	0.3	9.5
			C	0	0	0	0	0	108	13	0					0.1	1.4	0.1	4.4
1624	1626	1625	A	0	0	0	0	0	209	43	0	4_4-3 AWAC	1.74	11.22	24.94	0.6	3.9	0.9	10.6
			B	0	0	0	0	0	230	50	0					0.6	3.6	1.2	11.6
			C	1	193	0	1	0	108	14	0					0.2	1.6	0.3	5.3
1626	1628	1627	A	0	0	0	0	0	208	44	0	#6A CWC o	3.92	15.14	24.94	1.3	5.3	1.9	10.6
			B	0	0	0	0	0	228	51	0					1.2	4.8	2.1	11.6
			C	1	146	0	1	0	107	15	0					0.4	2.0	0.7	5.3
1628	1630	1629	A	0	0	0	0	0	206	48	0	#6A CWC o	1.87	17.01	24.94	0.6	5.9	0.9	10.7
			B	0	0	0	0	0	226	55	0					0.6	5.4	1.0	11.7
			C	0	0	0	0	0	105	19	0					0.2	2.2	0.3	5.2
1630	1632	1631	A	2	429	0	4	0	4	0	0	#6A CWC o	2.35	19.36	24.94	0.0	5.9	0.0	0.2
1630	1634	1633	A	0	0	0	0	0	201	50	0	#6A CWC o	0.43	17.44	24.94	0.1	6.0	0.2	10.5
			B	0	0	0	0	0	225	56	0					0.1	5.5	0.2	11.7
			C	0	0	0	0	0	105	21	0					0.0	2.2	0.1	5.2

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1634	1636	1635	A	0	0	0	0	0	201	50	0	#6A CWC o	2.99	20.43	24.94	1.0	7.0	1.5	10.5
			B	0	0	0	0	0	225	57	0					0.9	6.4	1.7	11.7
			C	1	383	0	2	0	105	22	0					0.3	2.5	0.5	5.2
1636	1638	1637	A	0	0	0	0	0	199	53	0	4_4-3 AWAC	0.18	20.61	24.94	0.1	7.1	0.1	10.5
			B	0	0	0	0	0	223	59	0					0.1	6.5	0.1	11.7
			C	0	0	0	0	0	102	24	0					0.0	2.5	0.0	5.2
1638	1640	1639	A	0	0	0	0	0	199	53	0	#4 ACSR	0.09	20.70	24.94	0.0	7.1	0.0	10.5
			B	0	0	0	0	0	223	59	0					0.0	6.5	0.1	11.7
			C	0	0	0	0	0	102	25	0					0.0	2.5	0.0	5.2
1640	1642	1641	A	0	0	0	0	0	199	53	0	#6A CWC o	0.14	20.84	24.94	0.0	7.2	0.1	10.5
			B	0	0	0	0	0	223	59	0					0.0	6.6	0.1	11.7
			C	0	0	0	0	0	102	25	0					0.0	2.6	0.0	5.2
1642	1644	1643	A	7	692	0	15	0	15	5	0	#6A CWC o	0.82	21.66	24.94	0.0	7.2	0.0	0.8
1642	1646	1645	A	2	312	0	3	0	184	48	0	#6A CWC o	2.32	23.16	24.94	0.7	7.9	0.9	9.7
			B	7	448	0	11	0	223	60	0					0.7	7.3	1.2	11.7
			C	0	0	0	0	0	102	25	0					0.2	2.8	0.4	5.2
1646	1648	1647	A	3	689	0	9	0	180	49	0	#6A CWC o	1.79	24.95	24.94	0.5	8.4	0.7	9.6
			B	6	464	0	10	0	211	57	0					0.5	7.8	0.9	11.2
			C	0	0	0	0	0	102	27	0					0.2	3.0	0.3	5.2
1648	10001	10001	A	0	0	0	0	0	170	47	0	Regulator	0.00	24.95	24.94	-8.6	-0.2	0.0	25.6
			B	0	0	0	0	0	201	55	0					-8.0	-0.2	0.0	30.0
			C	0	0	0	0	0	101	29	0					-3.0	0.0	0.0	14.6

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
10001	1650	1649	A	0	0	0	0	0	170	47	0	#6A CWC o	0.97	25.92	24.94	0.3	0.1	0.3	8.5	8.7
			B	0	0	0	0	0	201	55	0					0.3	0.1	0.4	10.0	
			C	2	665	0	6	0	101	29	0					0.1	0.1	0.2	5.1	
1650	1652	1651	A	4	523	0	8	0	8	2	0	#6A CWC o	0.70	26.62	24.94	0.0	0.1	-0.1	0.4	
			B	14	635	0	22	0	22	8	0					0.0	0.1	0.0	1.1	
			C	2	1,612	0	13	0	14	4	0					0.0	0.1	0.1	0.7	
1650	1654	1653	B	12	599	0	19	0	79	17	0	#6A CWC o	1.32	27.24	24.94	0.1	0.2	0.1	3.9	
1654	1656	1655	B	10	761	0	21	0	21	6	0	#4 ACSR	2.70	29.94	24.94	0.0	0.3	0.0	1.1	8.9
1654	1658	1657	B	9	426	0	12	0	39	5	0	#6A CWC o	0.44	27.68	24.94	0.0	0.3	0.0	1.9	
1658	1660	1659	B	2	93	0	1	0	27	1	0	#4 ACSR	2.23	29.91	24.94	0.1	0.3	0.0	1.3	8.9
1660	1662	1661	B	3	208	0	3	0	3	-1	0	#6A CWC o	1.86	31.77	24.94	0.0	0.4	0.0	0.1	9.0
1660	1664	1663	B	3	165	0	2	0	23	3	0	#6A CWC o	0.32	30.23	24.94	0.0	0.4	0.0	1.1	
1664	1666	1665	B	0	0	0	0	0	21	2	0	#4 ACSR	1.48	31.71	24.94	0.0	0.4	0.0	1.0	
1666	1668	1667	B	0	0	0	0	0	21	4	0	3#8 ALW	2.21	33.92	24.94	0.2	0.6	0.0	1.3	
1668	1670	1669	B	1	877	0	4	0	4	1	0	3#8 ALW	0.93	34.85	24.94	0.0	0.6	0.0	0.3	9.2
1668	1672	1671	B	28	248	0	16	0	16	5	0	3#8 ALW	1.53	35.45	24.94	0.0	0.6	0.0	1.0	9.2
1650	1674	1673	A	0	0	0	0	0	162	45	0	#6A CWC o	1.14	27.06	24.94	0.3	0.3	0.3	8.1	
			B	0	0	0	0	0	99	31	0					0.1	0.2	0.1	5.0	
			C	0	0	0	0	0	81	23	0					0.1	0.2	0.2	4.1	

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
1674	1676	1675	A	0	0	0	0	0	162	47	0	#6A CWC o	3.23	30.29	24.94	0.8	1.1	0.7	8.1	9.7
			B	0	0	0	0	0	99	32	0					0.4	0.6	0.3	5.0	
			C	0	0	0	0	0	81	25	0					0.4	0.6	0.5	4.1	
1676	1678	1677	A	19	1,004	19	42	11	54	20	0	#6A CWC o	0.46	30.75	24.94	0.0	1.2	0.0	2.8	
			B	2	1,192	15	10	9	93	35	0					0.1	0.7	0.0	4.8	
			C	9	526	19	14	11	81	28	0					0.0	0.6	0.1	4.1	
1678	1680	1679	A	0	0	0	0	0	0	-1	0	#6A CWC o	0.80	31.55	24.94	0.0	1.2	-0.1	0.0	
			B	57	561	3	60	2	62	23	0					0.0	0.7	0.0	3.2	
			C	0	0	0	0	0	0	-1	0					0.0	0.6	0.1	0.0	
1678	1682	1681	A	1	378	0	2	0	2	1	0	#6A CWC o	0.14	30.89	24.94	0.0	1.2	0.0	0.1	
			B	0	0	0	0	0	12	4	0					0.0	0.7	0.0	0.6	
			C	0	0	0	0	0	56	20	0					0.0	0.6	0.0	2.9	
1682	1684	1683	B	5	352	9	7	5	12	5	0	#6A CWC o	0.13	31.02	24.94	0.0	0.7	0.0	0.6	
			C	5	352	9	7	5	56	20	0					0.0	0.6	0.0	2.9	
1684	1686	1685	C	56	396	0	44	0	44	16	0	#6A CWC o	1.67	32.69	24.94	0.1	0.7	0.0	2.2	9.3
1676	1688	1687	A	2	272	0	3	0	106	30	0	#6A CWC o	0.61	30.90	24.94	0.1	1.2	0.0	5.4	
			B	5	285	0	6	0	6	2	0					0.0	0.6	0.1	0.3	
1688	1690	1689	A	5	295	17	6	10	104	29	0	#6A CWC o	1.39	32.29	24.94	0.2	1.5	0.2	5.2	10.1
1690	1692	1691	A	7	588	0	13	0	13	3	0	#4 ACSR	2.97	35.26	24.94	0.0	1.5	0.0	0.7	10.1
1690	1694	1693	A	6	301	0	7	0	75	22	0	#6A CWC o	0.23	32.52	24.94	0.0	1.5	0.0	3.8	10.1
1694	1696	1695	A	41	553	0	45	0	68	20	0	#4 ACSR	1.74	34.26	24.94	0.1	1.6	0.1	3.4	

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1696	1698	1697	A	16	549	0	22	0	23	3	0	3#8 ALW	5.10	39.36	24.94	0.2	1.8	0.0	1.4
1698	1700	1699	A	1	249	0	1	0	1	0	0	#4 ACSR	0.96	40.32	24.94	0.0	1.8	0.0	0.1 10.4

Feeder Data: (Dom. Customers = 466 at an average of 501 kWh/Month) (Measured Demands = 97 kW) (Losses = 35 kW) (Total Loading = 695 kW)

171 - St. Johns SRP Plant

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
171	8502	8501	A	0	0	0	0	0	380	82	0	4/0 AL UG	0.02	0.02	24.94	0.0	0.0	0.0	6.7
			B	0	0	0	0	0	188	-49	0					0.0	0.0	0.0	3.4
			C	0	0	0	0	0	220	-21	0					0.0	0.0	0.0	3.8
8502	8504	8503	A	0	0	0	0	0	380	83	0	3/0 ACSR	0.22	0.24	24.94	0.0	0.0	0.1	8.6
			B	0	0	0	0	0	188	-48	0					0.0	0.0	0.0	4.3
			C	0	0	0	0	0	220	-20	0					0.0	0.0	0.1	4.9
8504	8506	8505	A	35	710	0	87	0	268	29	0	3/0 ACSR	3.06	3.30	24.94	0.3	0.4	0.2	5.9
			B	3	476	0	11	0	97	-82	0					-0.1	-0.2	0.1	2.8
			C	9	435	0	21	0	144	-50	0					0.1	0.1	0.5	3.4
8506	8508	8507	A	1	24	0	0	0	181	-20	0	#3/0 ACSR	4.14	7.44	24.94	0.3	0.7	-0.3	4.0
			B	0	0	0	0	0	86	-84	0					-0.2	-0.3	0.5	2.7
			C	1	4,100	0	30	0	123	-59	0					0.0	0.1	0.4	3.0
8508	8510	8509	A	3	773	67	17	69	85	-60	109	#4 ACSR	0.88	8.31	24.94	0.1	0.7	0.0	4.9
			B	1	1	67	0	69	69	-72	111					0.0	-0.3	0.1	4.7
			C	1	1	67	0	69	70	-70	110					0.0	0.2	0.2	4.7
8510	8512	8511	A	0	0	0	0	0	0	-2	0	#4 ACSR	1.46	9.77	24.94	0.0	0.7	-0.1	0.1
			B	0	0	0	0	0	0	-2	0					0.0	-0.3	0.0	0.1
			C	1	128	0	1	0	2	-1	0					0.0	0.2	0.1	0.1
8508	8514	8513	A	4	1,413	40	36	41	95	44	0	#3/0 ACSR	3.29	10.73	24.94	0.2	0.8	-0.5	2.3
			B	1	1	1	0	1	17	-6	0					-0.1	-0.4	0.4	0.4
			C	1	1	1	0	1	22	-2	0					0.0	0.2	0.2	0.5
8514	8516	8515	A	0	0	0	0	0	19	2	0	#2 ACSR	2.53	13.26	24.94	0.0	0.9	-0.4	0.7
			B	0	0	0	0	0	16	-2	0					0.0	-0.4	0.3	0.6
			C	0	0	0	0	0	21	2	0					0.0	0.2	0.2	0.8

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
8516	8518	8517	A	1	1	15	0	15	15	8	0	#2 ACSR	1.30	14.56	24.94	0.0	0.9	-0.1	0.6
			B	1	1	15	0	15	16	8	0					0.0	-0.4	0.0	0.6
			C	1	1	15	0	15	16	8	0					0.0	0.2	0.1	0.6
8516	8520	8519	A	1	1	4	0	5	4	-3	0	#2 ACSR	4.38	17.64	24.94	0.0	0.9	-0.4	0.2
			B	0	0	0	0	0	0	-6	0					0.0	-0.4	0.0	0.2
			C	1	1	4	0	5	5	-3	0					0.0	0.2	0.4	0.2
8504	8522	8521	A	48	593	0	97	0	112	53	0	#6 Cu	3.83	4.07	24.94	0.4	0.4	0.0	6.8
			B	1	1,355	0	11	0	91	34	0					0.5	0.5	0.3	5.3
			C	5	532	0	17	0	76	30	0					0.3	0.3	0.5	4.5
8522	8524	8523	A	0	0	0	0	0	0	-1	0	#4 ACSR	0.62	4.69	24.94	0.0	0.4	-0.1	0.0
			B	0	0	0	0	0	0	-1	0					0.0	0.5	0.0	0.0
			C	0	0	0	0	0	0	-1	0					0.0	0.3	0.1	0.0
8522	8526	8525	A	1	1	15	0	16	15	-1	0	#6 Cu	5.03	9.09	24.94	0.1	0.5	-0.4	0.8
			B	1	1	15	0	16	79	33	0					0.7	1.1	0.5	4.7
			C	19	337	15	28	16	58	25	0					0.2	0.5	0.5	3.5
8526	8528	8527	B	8	491	0	22	0	63	34	0	#6 Cu	2.21	11.30	24.94	0.2	1.3	0.1	4.0
8528	8530	8529	B	15	519	6	35	6	41	22	0	#4 ACSR	2.42	13.71	24.94	0.1	1.4	0.0	2.2
8526	8532	8531	A	0	0	0	0	0	0	-5	0	#6 Cu	4.08	13.17	24.94	0.0	0.5	-0.3	0.3
			B	0	0	0	0	0	0	-5	0					0.0	1.1	0.0	0.3
			C	7	312	0	14	0	14	4	0					0.0	0.6	0.3	0.8
8502	8598	8599	A	0	0	0	0	0	0	0	0	#6 Cu	0.02	0.04	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
8598	8596	8597	A	0	0	0	0	0	0	0	0	#6 Cu	0.00	0.04	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
8596	8594	8595	A	0	0	0	0	0	0	0	0	1/0 ACSR	0.02	0.06	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
8594	8590	8591	A	0	0	0	0	0	0	0	0	1/0 ACSR	0.02	0.08	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
8594	8592	8593	A	0	0	0	0	0	0	0	0	1/0 ACSR	0.02	0.08	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
8594	8588	8589	A	0	0	0	0	0	0	0	0	1/0 ACSR	0.02	0.08	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0

Feeder Data: (Dom. Customers = 171 at an average of 557 kWh/Month) (Measured Demands = 348 kW) (Losses = 3 kW) (Total Loading = 788 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
172	8602	8601	A	1	446	0	3	0	538	131	0	4/0 AL UG	0.07	0.07	24.94	0.0	0.0	0.1	9.6
			B	1	446	0	3	0	429	111	0					0.0	0.0	0.0	7.7
			C	1	446	0	3	0	488	124	0					0.0	0.0	0.0	8.7
8602	8604	8603	A	9	569	0	16	0	535	132	0	#4 ACSR	0.56	0.63	24.94	0.4	0.4	1.6	26.1
			B	28	677	0	42	0	427	111	0					0.3	0.3	0.9	20.8
			C	31	635	0	43	0	485	124	0					0.4	0.4	1.4	23.7
8604	8606	8605	A	106	710	0	140	0	140	46	0	#4 ACSR	0.67	1.30	24.94	0.1	0.5	0.1	7.0
8604	8608	8607	A	1	539	76	3	48	377	81	0	#4 ACSR	0.49	1.13	24.94	0.2	0.7	0.7	18.3
			B	22	593	76	31	48	383	98	0					0.2	0.5	0.7	18.7
			C	16	811	76	33	48	440	110	0					0.3	0.7	1.0	21.5
8608	8610	8609	A	12	1,441	44	45	27	130	42	0	#2 Cu	0.47	1.60	24.94	0.0	0.7	0.0	3.9
			B	10	422	113	13	71	169	55	0					0.1	0.6	0.1	5.1
			C	17	547	44	24	27	73	23	0					0.0	0.7	0.0	2.2
8610	8612	8611	A	0	0	0	0	0	0	0	0	#2 Cu	0.08	1.68	24.94	0.0	0.7	0.0	0.0
			B	1	9	0	0	0	0	0	0					0.0	0.6	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.7	0.0	0.0
8610	8614	8613	A	0	0	0	0	0	0	0	0	#6A CWC o	0.14	1.74	24.94	0.0	0.7	0.0	0.0
			B	10	505	0	16	0	16	5	0					0.0	0.6	0.0	0.8
			C	0	0	0	0	0	0	0	0					0.0	0.7	0.0	0.0
8610	8616	8615	A	19	907	17	41	10	58	19	0	#6A CWC o	0.16	1.76	24.94	0.0	0.7	0.0	2.9
			B	36	627	20	48	13	69	23	0					0.0	0.6	0.0	3.5
			C	3	335	17	5	10	22	7	0					0.0	0.7	0.0	1.1

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
8616	8618	8617	A	2	94	8	1	5	6	2	0	#2 ACSR	0.07	1.83	24.94	0.0	0.7	0.0	0.2
			B	3	206	8	3	5	8	3	0					0.0	0.6	0.0	0.3
			C	2	94	8	1	5	6	2	0					0.0	0.7	0.0	0.2
8608	8620	8619	A	0	0	0	0	0	196	23	0	#4 ACSR	0.19	1.32	24.94	0.0	0.7	0.0	9.4
			B	0	0	0	0	0	135	17	0					0.0	0.6	0.0	6.4
			C	2	507	0	5	0	286	61	0					0.1	0.7	0.2	13.9
8620	8622	8621	A	4	632	5	11	3	30	10	0	#4 ACSR	0.27	1.59	24.94	0.0	0.7	0.0	1.5
			B	1	1	5	0	3	3	1	0					0.0	0.6	0.0	0.1
			C	30	762	5	50	3	95	31	0					0.0	0.8	0.0	4.7
8622	8624	8623	A	11	508	0	17	0	17	5	0	#4 ACSR	0.13	1.72	24.94	0.0	0.7	0.0	0.8
			C	26	599	10	36	6	42	14	0					0.0	0.8	0.0	2.1
8620	8626	8625	A	0	0	0	0	0	166	14	0	#4 ACSR	0.53	1.85	24.94	0.1	0.8	0.1	7.9
			B	7	436	0	11	0	132	17	0					0.1	0.7	0.1	6.3
			C	3	504	0	7	0	186	29	0					0.1	0.9	0.2	8.9
8626	8628	8627	A	0	0	0	0	0	127	37	0	#4 ACSR	0.39	2.24	24.94	0.1	0.9	0.0	6.3
			B	0	0	0	0	0	117	33	0					0.1	0.7	0.1	5.8
			C	0	0	0	0	0	159	48	0					0.1	1.0	0.1	7.9
8628	8630	8629	A	5	1,060	51	20	32	127	38	0	#4 ACSR	1.35	3.58	24.94	0.2	1.1	0.1	6.3
			B	1	1	51	0	32	117	34	0					0.2	0.9	0.2	5.8
			C	16	606	51	25	32	159	48	0					0.3	1.2	0.4	7.9
8630	8632	8631	A	0	0	0	0	0	76	22	0	#4 ACSR	0.09	3.67	24.94	0.0	1.1	0.0	3.8
			B	0	0	0	0	0	85	25	0					0.0	1.0	0.0	4.2
			C	2	748	0	7	0	101	31	0					0.0	1.3	0.0	5.1

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
8632	8634	8633	A	10	629	64	19	40	59	19	0	#4 ACSR	0.17	3.84	24.94	0.0	1.1	0.0	3.0
			B	10	935	64	27	40	67	22	0					0.0	1.0	0.0	3.4
			C	17	593	77	26	48	74	24	0					0.0	1.3	0.0	3.7
8632	8636	8635	A	11	335	8	12	5	17	3	0	#4 ACSR	1.96	5.63	24.94	0.0	1.1	-0.2	0.8
			B	7	488	8	12	5	17	3	0					0.0	1.0	0.0	0.8
			C	17	314	8	15	5	20	4	0					0.0	1.3	0.2	1.0
8626	8638	8637	A	1	805	0	4	0	39	-23	0	#4 ACSR	1.10	2.95	24.94	0.0	0.9	-0.1	2.1
			B	0	0	0	0	0	4	-19	0					0.0	0.6	0.1	0.9
			C	0	0	0	0	0	19	-20	0					0.0	0.9	0.1	1.3
8638	8640	8639	A	0	0	0	0	0	34	-23	0	#4 ACSR	3.86	6.80	24.94	0.1	1.0	-0.5	2.0
			B	0	0	0	0	0	4	-18	0					0.0	0.6	0.4	0.9
			C	0	0	0	0	0	19	-19	0					0.1	1.0	0.2	1.3
8640	8642	8641	A	0	0	0	0	0	0	-1	0	#4 ACSR	0.85	7.65	24.94	0.0	1.0	-0.1	0.0
			B	0	0	0	0	0	0	-1	0					0.0	0.6	0.0	0.1
			C	0	0	0	0	0	0	-1	0					0.0	1.0	0.1	0.0
8640	8644	8643	A	4	424	0	7	0	35	-17	0	#4 ACSR	4.26	11.06	24.94	0.1	1.1	-0.6	1.9
			B	0	0	0	0	0	3	-11	0					0.0	0.6	0.4	0.6
			C	0	0	0	0	0	19	-14	0					0.1	1.1	0.3	1.1
8644	8646	8645	A	3	97	0	2	0	2	-8	0	#4 ACSR	8.44	19.50	24.94	0.0	1.1	0.0	0.4
8644	8648	8647	A	1	26	0	0	0	26	-7	0	#4 ACSR	4.56	15.62	24.94	0.1	1.2	-0.6	1.3
			B	0	0	0	0	0	3	-6	0					0.0	0.6	0.4	0.3
			C	1	615	0	3	0	19	-9	0					0.1	1.2	0.3	1.0

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
8648	8650	8649	A	1	1	4	0	2	2	0	0	#4 ACSR	0.63	16.25	24.94	0.0	1.2	-0.1	0.1
			B	1	1	4	0	2	3	0	0					0.0	0.6	0.1	0.1
			C	1	1	4	0	2	2	0	0					0.0	1.2	0.0	0.1
8648	8652	8651	A	5	574	19	11	12	24	-2	0	#4 ACSR	8.68	24.29	24.94	0.2	1.4	1.3	1.2
			C	2	1,453	1	13	1	13	-5	0					0.1	1.3	-1.3	0.6
8602	8698	8697	A	0	0	0	0	0	0	0	0	#4 ACSR	0.02	0.09	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0

Feeder Data: (Dom. Customers = 531 at an average of 641 kWh/Month) (Measured Demands = 947 kW) (Losses = 9 kW) (Total Loading = 1,455 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
173	8702	8701	A	0	0	0	0	0	629	-17	0	4/0 AL UG	0.13	0.13	24.94	0.0	0.0	0.1	10.9
			B	0	0	0	0	0	640	-18	0					0.0	0.0	0.1	11.1
			C	0	0	0	0	0	671	-11	0					0.0	0.0	0.1	11.6
8702	8704	8703	A	15	421	4	22	3	629	-15	0	#6 Cu	0.50	0.62	24.94	0.4	0.4	1.8	34.7
			B	1	1	4	0	3	640	-16	0					0.4	0.4	2.0	35.3
			C	45	854	4	97	3	670	-9	0					0.4	0.4	1.8	37.0
8704	8706	8705	A	11	1,064	0	41	0	41	7	0	#4 ACSR	0.03	0.65	24.94	0.0	0.4	0.0	2.0
			B	0	0	0	0	0	0	0	0					0.0	0.4	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.4	0.0	0.0
8704	8708	8707	A	9	682	0	24	0	24	4	0	#4 ACSR	0.30	0.92	24.94	0.0	0.4	0.0	1.2
			B	5	997	0	23	0	64	10	0					0.0	0.4	0.0	3.1
			C	23	638	0	44	0	44	7	0					0.0	0.4	0.0	2.1
8708	8710	8709	B	17	379	23	22	18	41	7	0	#4 ACSR	0.15	1.07	24.94	0.0	0.4	0.0	1.9
8704	8712	8711	A	6	355	17	11	14	537	-29	0	#6 Cu	0.16	0.78	24.94	0.1	0.5	0.4	29.7
			B	2	995	17	12	14	571	-27	0					0.1	0.5	0.5	31.6
			C	2	1,754	17	20	14	525	-33	0					0.1	0.5	0.4	29.1
8712	8714	8713	A	1	1	59	0	46	315	-58	0	#6 Cu	0.26	1.04	24.94	0.1	0.6	0.2	17.7
			B	1	1	59	0	46	222	-75	0					0.1	0.6	0.1	13.0
			C	1	1	59	0	46	456	-36	0					0.2	0.6	0.6	25.3
8714	8716	8715	C	57	815	5	114	4	118	19	0	#4 ACSR	0.68	1.72	24.94	0.1	0.7	0.1	5.7
8714	8718	8717	A	4	641	29	14	23	269	-66	0	#6 Cu	0.35	1.39	24.94	0.1	0.7	0.2	15.3
			B	40	893	29	91	23	176	-82	0					0.0	0.6	0.1	10.7
			C	17	852	30	45	23	292	-63	0					0.1	0.7	0.3	16.5

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
8718	8720	8719	A	1	1	4	0	3	232	-72	0	#4 ACSR	0.31	1.70	24.94	0.1	0.7	0.1	11.5
			B	0	0	0	0	0	62	-101	0					0.0	0.6	0.0	5.6
			C	1	1	4	0	3	223	-74	0					0.1	0.8	0.2	11.2
8720	8722	8721	A	1	275	0	2	0	2	0	0	#6A CWC o	0.04	1.74	24.94	0.0	0.7	0.0	0.1
			C	3	598	0	10	0	110	17	0					0.0	0.8	0.0	5.3
8722	8724	8723	C	5	529	0	13	0	99	16	0	#4 ACSR	0.10	1.84	24.94	0.0	0.8	0.0	4.8
8724	8726	8725	C	38	875	0	86	0	86	14	0	#4 ACSR	0.75	2.59	24.94	0.0	0.9	0.0	4.1
8720	8728	8727	A	2	2,419	0	26	0	164	27	0	#6 Cu	0.34	2.03	24.94	0.1	0.8	0.1	9.2
			B	12	746	0	32	0	32	5	0					0.0	0.6	0.0	1.8
			C	14	572	11	28	9	48	7	0					0.0	0.9	0.0	2.7
8728	8730	8729	A	40	688	83	72	65	137	23	0	#4 ACSR	0.18	2.22	24.94	0.0	0.8	0.0	6.6
			B	0	0	0	0	0	0	0	0					0.0	0.6	0.0	0.0
			C	2	329	8	4	7	11	2	0					0.0	0.9	0.0	0.5
8720	8732	8731	A	12	455	54	20	43	63	-99	109	#4 ACSR	0.51	2.21	24.94	0.0	0.8	0.0	5.6
			B	1	907	30	6	24	30	-105	109					0.0	0.6	0.1	5.2
			C	18	571	37	33	29	62	-99	109					0.0	0.8	0.1	5.6
8712	8734	8733	A	1	1	1	0	1	198	25	0	#6 Cu	0.26	1.04	24.94	0.1	0.6	0.1	11.0
			B	1	650	1	5	1	323	44	0					0.1	0.6	0.2	18.0
			C	2	436	1	6	1	35	-2	0					0.0	0.5	0.0	2.0
8734	8736	8735	A	0	0	0	0	0	7	0	0	#6 Cu	0.31	1.35	24.94	0.0	0.6	0.0	0.4
			B	0	0	0	0	0	7	0	0					0.0	0.6	0.0	0.4
			C	0	0	0	0	0	7	0	0					0.0	0.5	0.0	0.4

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
8736	8738	8737	A	1	1	9	0	7	7	0	0	1/0 AL UG	0.09	1.44	24.94	0.0	0.6	0.0	0.2
			B	1	1	9	0	7	7	0	0					0.0	0.6	0.0	0.2
			C	1	1	9	0	7	7	0	0					0.0	0.5	0.0	0.2
8734	8740	8739	A	69	927	13	151	10	190	26	0	#6 Cu	0.66	1.70	24.94	0.1	0.7	0.1	10.6
			B	44	841	32	94	25	310	44	0					0.2	0.8	0.5	17.4
			C	0	0	0	0	0	22	-2	0					0.0	0.4	0.0	1.2
8740	8746	8745	B	68	906	0	146	0	147	22	0	#6 Cu	2.66	4.35	24.94	0.3	1.1	0.3	8.2
8740	8742	8741	A	2	650	0	8	0	28	-1	0	#4 ACSR	0.23	1.92	24.94	0.0	0.7	0.0	1.3
			B	7	509	11	16	9	44	2	0					0.0	0.8	0.0	2.1
			C	1	255	0	2	0	22	-2	0					0.0	0.4	0.0	1.0
8742	8744	8743	A	0	0	25	0	20	20	-2	0	1/0 AL UG	0.39	2.32	24.94	0.0	0.7	0.0	0.5
			B	0	0	25	0	20	20	-2	0					0.0	0.9	0.0	0.5
			C	0	0	25	0	20	20	-2	0					0.0	0.4	0.0	0.5
8702	8798	8797	A	0	0	0	0	0	0	0	0	#6 Cu	0.02	0.14	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0

Feeder Data: (Dom. Customers = 605 at an average of 776 kWh/Month) (Measured Demands = 747 kW) (Losses = 11 kW) (Total Loading = 1,940 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
174	8802	8801	A	0	0	0	0	0	165	44	0	4/0 AL UG	0.12	0.12	24.94	0.0	0.0	0.0	3.0
			B	0	0	0	0	0	107	20	0					0.0	0.0	0.0	1.9
			C	0	0	0	0	0	146	34	0					0.0	0.0	0.0	2.6
8802	8804	8803	A	1	1,446	0	6	0	165	46	0	1/0 ACSR	0.26	0.38	24.94	0.0	0.0	0.0	4.9
			B	0	0	0	0	0	107	22	0					0.0	0.0	0.0	3.1
			C	0	0	0	0	0	146	36	0					0.0	0.0	0.1	4.3
8804	8806	8805	A	2	920	0	8	0	60	22	0	#4 ACSR	0.26	0.64	24.94	0.0	0.1	0.0	3.0
			B	3	1,164	0	13	0	65	24	0					0.0	0.0	0.0	3.3
			C	0	0	0	0	0	52	19	0					0.0	0.0	0.0	2.6
8806	8808	8807	A	1	1	96	0	52	52	19	0	1/0 AL UG	0.17	0.81	24.94	0.0	0.1	0.0	1.5
			B	1	1	96	0	52	52	19	0					0.0	0.0	0.0	1.5
			C	1	1	96	0	52	52	19	0					0.0	0.1	0.0	1.5
8804	8810	8809	A	0	0	0	0	0	99	22	0	1/0 ACSR	0.24	0.62	24.94	0.0	0.0	0.0	2.9
			B	0	0	0	0	0	42	-2	0					0.0	0.0	0.0	1.2
			C	0	0	0	0	0	94	18	0					0.0	0.0	0.0	2.7
8810	8812	8811	A	7	437	0	10	0	10	-1	0	1/0 AL UG	0.36	0.98	24.94	0.0	0.1	0.0	0.3
			B	0	0	0	0	0	0	-5	0					0.0	0.0	0.0	0.1
			C	7	296	0	7	0	7	-2	0					0.0	0.0	0.0	0.2
8810	8814	8813	A	22	754	0	34	0	89	23	0	1/0 ACSR	0.57	1.19	24.94	0.0	0.1	-0.1	2.7
			B	15	462	0	17	0	42	3	0					0.0	0.0	0.0	1.2
			C	2	1,205	0	10	0	87	20	0					0.0	0.1	0.1	2.6
8814	8816	8815	A	5	1,110	0	18	0	18	7	0	#4 ACSR	0.50	1.68	24.94	0.0	0.1	0.1	0.9
			C	4	434	0	7	0	7	2	0					0.0	0.1	-0.1	0.3

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
8814	8818	8817	A	0	0	0	0	0	0	-5	0	#4 ACSR	0.27	1.46	24.94	0.0	0.1	0.0	0.3
			B	0	0	0	0	0	3	-4	0					0.0	0.0	0.0	0.2
			C	2	933	0	8	0	37	8	0					0.0	0.1	0.0	1.8
8818	8820	8819	A	0	0	0	0	0	0	-5	0	1/0 AL UG	0.39	1.85	24.94	0.0	0.1	0.0	0.1
			B	3	219	0	3	0	3	-4	0					0.0	0.0	0.0	0.1
			C	1	522	0	3	0	3	-4	0					0.0	0.1	0.0	0.1
8818	8822	8821	A	0	0	0	0	0	0	0	0	#4 ACSR	0.09	1.55	24.94	0.0	0.1	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	27	9	0					0.0	0.1	0.0	1.3
8822	8824	8823	C	16	748	0	27	0	27	9	0	#4 ACSR	1.42	2.97	24.94	0.0	0.1	0.0	1.3
8814	8826	8825	A	0	0	0	0	0	38	9	0	1/0 ACSR	1.19	2.37	24.94	0.0	0.1	-0.1	1.1
			B	0	0	0	0	0	22	2	0					0.0	0.0	0.0	0.6
			C	0	0	0	0	0	33	6	0					0.0	0.1	0.1	1.0
8826	8828	8827	A	8	479	0	11	0	38	10	0	#2 ACSR	0.57	2.94	24.94	0.0	0.1	-0.1	1.4
			B	0	0	0	0	0	22	4	0					0.0	0.0	0.0	0.8
			C	4	352	22	6	12	33	8	0					0.0	0.1	0.1	1.2
8828	8830	8829	A	19	651	0	27	0	26	6	0	#6 Cu	3.83	6.77	24.94	0.1	0.2	-0.3	1.5
			B	17	582	0	22	0	22	4	0					0.1	0.1	0.0	1.3
			C	2	1,959	0	15	0	15	2	0					0.0	0.2	0.3	0.9
8802	8898	8897	A	0	0	0	0	0	0	0	0	1/0 ACSR	0.02	0.14	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0

Feeder Data: (Dom. Customers = 143 at an average of 640 kWh/Month) (Measured Demands = 309 kW) (Losses = 0 kW) (Total Loading = 418 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
151	1752	1751	A	0	0	0	0	0	71	24	0	4/0 AL UG	0.08	0.08	24.94	0.0	0.0	0.0	1.3
			B	0	0	0	0	0	81	27	0					0.0	0.0	0.0	1.5
			C	0	0	0	0	0	162	59	0					0.0	0.0	0.0	3.0
1752	1754	1753	A	0	0	0	0	0	71	25	0	#6 Cu	0.59	0.67	24.94	0.0	0.0	0.0	4.2
			B	0	0	0	0	0	81	29	0					0.1	0.1	0.1	4.8
			C	0	0	0	0	0	162	60	0					0.1	0.1	0.2	9.6
1754	1756	1755	A	20	742	8	36	5	41	15	0	#4 ACSR	0.53	1.20	24.94	0.0	0.1	0.0	2.1
			B	20	742	8	36	5	41	15	0					0.0	0.1	0.0	2.1
			C	20	742	8	36	5	41	15	0					0.0	0.2	0.1	2.1
1754	1758	1757	A	1	167	0	1	0	30	10	0	#6 Cu	0.41	1.08	24.94	0.0	0.0	0.0	1.8
			B	2	223	0	3	0	40	14	0					0.0	0.1	0.0	2.3
			C	0	0	0	0	0	121	45	0					0.1	0.2	0.1	7.1
1758	1760	1759	C	16	1,189	0	47	0	47	18	0	#4 ACSR	0.44	1.52	24.94	0.0	0.2	0.0	2.4
1758	1762	1761	A	1	795	0	4	0	4	2	0	#6 Cu	0.12	1.20	24.94	0.0	0.0	0.0	0.3
			B	3	508	0	7	0	7	3	0					0.0	0.1	0.0	0.4
			C	1	786	0	4	0	4	2	0					0.0	0.2	0.0	0.3
1758	1764	1763	A	15	544	3	23	2	25	9	0	#4 ACSR	0.67	1.75	24.94	0.0	0.1	-0.1	1.2
			B	13	772	3	28	2	30	11	0					0.0	0.1	0.0	1.5
			C	38	836	3	67	2	69	26	0					0.0	0.3	0.1	3.5
1752	1766	1765	A	0	0	0	0	0	0	0	0	#6 Cu	0.02	0.10	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1766	1768	1767	A	0	0	0	0	0	0	0	0	#6 Cu	0.00	0.10	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
1768	1770	1769	A	0	0	0	0	0	0	0	0	#6 Cu	0.02	0.12	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
1770	1772	1771	A	0	0	0	0	0	0	0	0	1/0 Cu	0.02	0.14	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
1770	1774	1773	A	0	0	0	0	0	0	0	0	1/0 Cu	0.02	0.14	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0

Feeder Data: (Dom. Customers = 149 at an average of 782 kWh/Month) (Measured Demands = 34 kW) (Losses = 0 kW) (Total Loading = 315 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
152	1902	1901	A	0	0	0	0	0	1,224	31	0	4/0 AL UG	0.06	0.06	24.94	0.0	0.0	0.3	21.3
			B	0	0	0	0	0	834	-18	0					0.0	0.0	0.1	14.5
			C	0	0	0	0	0	856	-16	0					0.0	0.0	0.1	14.9
1902	1904	1903	A	3	61	0	1	0	1,224	32	0	1/0 Cu	0.84	0.90	24.94	0.4	0.4	3.5	26.1
			B	8	231	0	9	0	834	-17	0					0.1	0.1	0.8	17.8
			C	0	0	0	0	0	856	-15	0					0.2	0.2	1.7	18.3
1904	1906	1905	A	201	804	0	384	0	384	44	0	#4 ACSR	1.05	1.95	24.94	0.3	0.7	0.9	18.3
1904	1908	1907	A	1	600	0	4	0	834	-16	109	1/0 Cu	0.45	1.35	24.94	0.1	0.5	0.8	17.9
			B	0	0	0	0	0	824	-18	110					0.1	0.2	0.7	17.6
			C	28	659	0	55	0	854	-15	110					0.1	0.3	0.7	18.3
1908	1910	1909	A	12	644	58	29	48	78	9	0	#6A CWC o	0.25	1.60	24.94	0.0	0.6	0.0	3.7
			B	10	817	58	32	48	80	9	0					0.0	0.3	0.0	3.8
			C	25	936	58	69	48	117	13	0					0.0	0.4	0.0	5.6
1908	1912	1911	A	0	0	0	0	0	751	84	0	1/0 Cu	0.34	1.69	24.94	0.1	0.6	0.5	16.2
			B	53	620	0	89	0	743	82	0					0.1	0.3	0.4	16.0
			C	42	714	0	83	0	681	74	0					0.1	0.4	0.3	14.7
1912	1914	1913	A	1	386	0	3	0	3	0	0	#4 ACSR	0.09	1.78	24.94	0.0	0.6	0.0	0.1
			B	1	386	0	3	0	3	0	0					0.0	0.3	0.0	0.1
			C	9	761	0	28	0	28	3	0					0.0	0.4	0.0	1.4
1912	1916	1915	A	7	917	19	28	16	44	5	0	#6A CWC o	0.11	1.80	24.94	0.0	0.6	0.0	2.1
			B	9	434	0	17	0	17	2	0					0.0	0.3	0.0	0.8
			C	13	1,445	0	63	0	63	7	0					0.0	0.4	0.0	3.0

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1912	1918	1917	A	23	619	1	45	0	703	78	0	1/0 Cu	0.37	2.05	24.94	0.1	0.8	0.5	15.2
			B	21	320	1	23	0	634	70	0					0.1	0.4	0.3	13.6
			C	4	280	1	7	0	506	55	0					0.1	0.5	0.2	10.9
1918	1920	1919	A	2	594	46	8	39	47	5	0	#4 ACSR	0.57	2.62	24.94	0.0	0.8	0.0	2.2
			B	41	635	32	73	27	100	11	0					0.1	0.4	0.0	4.8
			C	32	502	46	48	39	87	9	0					0.0	0.5	0.1	4.1
1918	1922	1921	A	0	0	0	0	0	611	68	0	1/0 Cu	0.10	2.15	24.94	0.0	0.8	0.1	13.2
			B	51	566	0	79	0	510	56	0					0.0	0.4	0.0	11.0
			C	0	0	0	0	0	412	45	0					0.0	0.5	0.0	8.9
1922	1924	1923	A	44	650	34	79	28	107	11	0	#4 ACSR	0.91	3.06	24.94	0.0	0.8	0.0	5.1
			B	146	687	34	246	28	274	30	0					0.2	0.6	0.4	13.1
			C	15	672	34	36	28	280	31	0					0.3	0.8	0.7	13.3
1924	1926	1925	C	160	535	0	215	0	215	24	0	#4 ACSR	0.98	4.03	24.94	0.2	0.9	0.3	10.3
1922	1928	1927	A	0	0	0	0	0	504	57	0	1/0 Cu	0.38	2.53	24.94	0.1	0.9	0.3	10.9
			B	49	637	0	85	0	156	17	0					0.0	0.4	0.0	3.4
			C	75	683	0	132	0	132	14	0					0.0	0.5	0.1	2.8
1928	1930	1929	A	16	479	0	28	0	492	56	0	#6A CWC o	0.14	2.67	24.94	0.1	1.0	0.3	23.6
			B	19	566	11	36	9	46	5	0					0.0	0.3	0.0	2.2
			C	0	0	0	0	0	0	0	0					0.0	0.5	0.0	0.0
1930	1932	1931	A	287	598	56	417	46	464	53	0	#6A CWC o	1.38	4.05	24.94	0.5	1.5	1.7	22.3
1928	1934	1933	A	2	854	0	11	0	11	1	0	1/0 Cu	0.19	2.73	24.94	0.0	0.9	0.0	0.2
			B	4	151	26	4	22	26	3	0					0.0	0.4	0.0	0.6
			C	0	0	0	0	0	0	0	0					0.0	0.5	0.0	0.0

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1902	1936	1935	A	0	0	0	0	0	0	0	0	1/0 Cu	0.02	0.08	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0

Feeder Data: (Dom. Customers = 1,414 at an average of 647 kWh/Month) (Measured Demands = 515 kW) (Losses = 16 kW) (Total Loading = 2,914 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
153	1802	1801	A	0	0	0	0	0	798	291	0	4/0 AL UG	0.49	0.49	24.94	0.1	0.1	0.9	14.7
			B	0	0	0	0	0	665	219	0					0.1	0.1	0.5	12.1
			C	0	0	0	0	0	727	265	0					0.1	0.1	0.6	13.4
1802	1806	1805	A	0	0	0	0	0	797	299	0	#2 ACSR	0.33	0.82	24.94	0.3	0.4	1.5	31.3
			B	40	389	0	42	0	664	227	0					0.2	0.3	0.8	25.8
			C	37	348	0	35	0	726	273	0					0.2	0.3	1.2	28.5
1806	1808	1807	A	0	0	0	0	0	795	298	0	#2 ACSR	6.10	6.92	24.94	5.0	5.5	28.3	31.3
			B	0	0	0	0	0	622	210	0					3.0	3.3	14.3	24.2
			C	0	0	0	0	0	690	258	0					4.2	4.5	22.0	27.1
1808	1810	1809	B	6	431	0	12	0	12	4	0	#4 ACSR	1.11	8.03	24.94	0.0	3.3	0.0	0.6
1808	1812	1811	A	0	0	0	0	0	767	286	0	#2 ACSR	7.10	14.02	24.94	5.9	11.3	33.1	31.4
			B	0	0	0	0	0	595	206	0					3.4	6.7	15.9	23.8
			C	0	0	0	0	0	668	253	0					4.9	9.5	25.9	27.2
1812	1814	1813	A	0	0	0	0	0	734	271	0	#2 ACSR	5.63	19.65	24.94	4.7	16.0	26.5	31.6
			B	0	0	0	0	0	579	205	0					2.7	9.5	12.7	23.9
			C	0	0	0	0	0	642	246	0					3.9	13.4	20.7	27.3
1814	10001	10001	A	0	0	0	0	0	708	259	0	Regulator	0.00	19.65	24.94	-11.0	5.0	0.0	114.2
			B	0	0	0	0	0	567	204	0					-7.3	2.2	0.0	86.2
			C	0	0	0	0	0	621	240	0					-11.3	2.1	0.0	98.5
10001	1816	1815	A	0	0	0	0	0	708	259	0	#2 ACSR	0.06	19.71	24.94	0.0	5.0	0.2	28.8
			B	0	0	0	0	0	567	204	0					0.0	2.2	0.1	22.5
			C	2	988	0	11	0	621	240	0					0.0	2.2	0.2	24.9
1816	1818	1817	A	1	434	0	3	0	184	64	0	#4 ACSR	0.32	20.04	24.94	0.1	5.1	0.1	9.6

16.5

153 - Wagon Wheel Cibecue

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
1818	1820	1819	A	4	339	36	7	27	181	63	0	#4 ACSR	9.12	29.16	24.94	2.8	7.9	3.8	9.4	
1820	1822	1821	A	92	474	52	103	39	143	55	0	#4 ACSR	2.60	31.76	24.94	0.4	8.4	0.4	7.7	19.7
1816	1824	1823	A	1	130	0	1	0	523	195	0	#2 ACSR	1.93	21.65	24.94	1.0	6.1	3.9	21.4	
			B	0	0	0	0	0	567	204	0					1.0	3.3	4.6	22.5	
			C	0	0	0	0	0	610	235	0					1.2	3.3	5.3	24.4	
1824	1826	1825	B	24	582	0	40	0	40	15	0	#4 ACSR	0.57	22.22	24.94	0.0	3.3	0.0	2.1	
1824	1828	1827	A	7	297	0	9	0	518	194	0	#2 ACSR	0.16	21.81	24.94	0.1	6.2	0.3	21.4	
			B	0	0	0	0	0	522	189	0					0.1	3.3	0.3	21.0	
			C	2	367	0	5	0	604	234	0					0.1	3.4	0.4	24.5	
1828	1830	1829	A	1	577	0	4	0	509	191	0	#2 ACSR	3.87	25.68	24.94	2.0	8.2	7.4	21.0	19.5
			B	0	0	0	0	0	522	189	0					1.9	5.2	8.0	21.0	
			C	0	0	0	0	0	599	232	0					2.3	5.8	10.6	24.3	
1830	1854	1831	A	0	0	0	0	0	497	189	0	#2 ACSR	0.10	25.78	24.94	0.1	8.2	0.2	20.9	
			B	0	0	0	0	0	514	189	0					0.0	5.3	0.2	21.0	
			C	0	0	0	0	0	588	229	0					0.1	5.8	0.3	24.3	
1854	1852	1853	A	0	0	0	0	0	497	189	0	#2 ACSR	6.98	32.75	24.94	3.6	11.9	13.3	20.9	23.2
			B	0	0	0	0	0	506	190	0					3.4	8.7	14.2	20.7	
			C	0	0	0	0	0	588	229	0					4.3	10.1	19.3	24.3	
1852	10002	10002	A	0	0	0	0	0	484	188	0	Regulator	0.00	32.75	24.94	-9.3	2.6	1.4	0.0	37.9 22.9
			B	0	0	0	0	0	492	191	0					-6.6	2.1	8.7	0.0	37.5 16.0
			C	0	0	0	0	0	569	223	0					-8.0	2.1	10.10	0.0	43.9 21.4

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
10002	1858	1833	A	13	194	12	10	9	484	188	0	#2 ACSR	0.93	33.68	24.94	0.4	3.0	1.5	19.5	
			B	2	336	12	4	9	492	191	0					0.5	2.6	1.7	19.7	
			C	7	256	12	8	9	569	223	0					0.5	2.6	2.2	22.8	
1858	1834	1859	A	6	211	1	6	1	460	179	0	#2 ACSR	1.10	34.78	24.94	0.5	3.5	1.5	18.6	23.8
			B	66	378	10	63	7	477	186	0					0.5	3.1	1.7	19.2	
			C	7	451	11	14	8	550	216	0					0.6	3.2	2.5	22.2	
1834	1860	1835	A	13	339	17	16	13	137	52	0	#2 ACSR	0.38	35.17	24.94	0.0	3.6	0.0	5.5	
			B	13	374	17	17	13	80	31	0					0.0	3.1	0.0	3.2	
			C	102	441	17	107	13	183	72	0					0.1	3.3	0.1	7.4	
1860	1836	1861	A	14	607	0	28	0	108	41	0	#2 ACSR	0.51	35.67	24.94	0.1	3.6	0.0	4.4	
			B	10	465	0	18	0	50	19	0					0.0	3.1	0.0	2.0	
			C	14	885	0	39	0	63	24	0					0.0	3.3	0.1	2.5	
1836	1862	1837	A	0	0	0	0	0	36	13	0	#2 ACSR	0.05	35.73	24.94	0.0	3.6	0.0	1.4	
			B	0	0	0	0	0	0	0	0					0.0	3.1	0.0	0.0	
			C	0	0	0	0	0	0	0	0					0.0	3.3	0.0	0.0	
1862	1838	1863	A	36	361	0	36	0	36	13	0	#2 ACSR	0.92	36.65	24.94	0.0	3.6	0.0	1.4	23.9
1836	1840	1839	A	2	2,468	25	25	19	44	18	0	#2 ACSR	0.16	35.84	24.94	0.0	3.6	0.0	1.8	
			B	8	410	25	14	19	33	13	0					0.0	3.1	0.0	1.3	
			C	3	282	25	5	19	24	9	0					0.0	3.3	0.0	1.0	
1834	1842	1841	A	0	0	0	0	0	315	124	0	#2 ACSR	0.05	34.84	24.94	0.0	3.5	0.0	12.8	
			B	0	0	0	0	0	325	128	0					0.0	3.1	0.0	13.2	
			C	0	0	0	0	0	343	136	0					0.0	3.2	0.1	13.9	

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1842	1844	1843	A	1	2,878	237	16	178	315	125	0	#2 ACSR	0.26	35.09	24.94	0.1	3.6	0.2	12.8
			B	2	201	251	3	188	325	129	0					0.1	3.2	0.2	13.2
			C	1	1	237	0	178	343	136	0					0.1	3.3	0.2	13.9
1844	1846	1845	A	18	841	67	44	50	121	47	0	#2 ACSR	0.69	35.78	24.94	0.1	3.7	0.0	4.9
			B	40	440	73	47	54	135	53	0					0.1	3.2	0.1	5.4
			C	29	662	116	51	87	165	65	0					0.1	3.4	0.2	6.7
1846	1848	1847	A	1	618	30	4	22	27	10	0	#2 ACSR	0.10	35.88	24.94	0.0	3.7	0.0	1.1 24.0
			B	2	981	30	11	22	34	13	0					0.0	3.2	0.0	1.4
			C	1	618	30	4	22	27	10	0					0.0	3.4	0.0	1.1
1858	1864	1865	A	4	160	0	4	0	4	1	0	#4 ACSR	0.31	33.99	24.94	0.0	3.0	0.0	0.2
1854	1856	1855	B	1	1,222	0	8	0	8	-1	0	#4 ACSR	4.42	30.19	24.94	0.0	5.3	0.0	0.4
1802	1804	1803	A	0	0	0	0	0	0	0	0	#2 ACSR	0.02	0.51	24.94	0.0	0.1	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.1	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.1	0.0	0.0

Feeder Data: (Dom. Customers = 633 at an average of 462 kWh/Month) (Measured Demands = 1,341 kW) (Losses = 311 kW) (Total Loading = 2,189 kW)

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
154	1702	1701	A	1	179	0	1	0	1,446	413	0	4/0 AL UG	0.04	0.04	24.94	0.0	0.0	0.2	26.1
			B	0	0	0	0	0	1,627	479	0					0.0	0.0	0.3	29.4
			C	0	0	0	0	0	1,955	610	0					0.0	0.0	0.4	35.5
1702	1796	1703	A	1	1	14	0	9	1,445	413	0	1/0 Cu	0.38	0.42	24.94	0.2	0.2	1.8	32.1
			B	12	655	14	23	9	1,626	480	0					0.3	0.3	3.1	36.2
			C	2	2	35	0	22	1,954	610	0					0.3	0.4	3.8	43.7
1796	1704	1793	A	5	300	0	7	0	1,434	408	0	1/0 Cu	0.31	0.73	24.94	0.2	0.4	1.4	31.9
			B	6	391	0	9	0	1,591	466	0					0.2	0.5	2.5	35.5
			C	31	314	0	24	0	1,928	596	0					0.3	0.6	3.0	43.2
1704	1706	1705	A	7	7	93	0	60	108	39	0	#4 ACSR	0.31	1.04	24.94	0.0	0.4	0.0	5.5
			B	9	229	84	8	54	154	56	0					0.1	0.6	0.1	7.8
			C	6	6	84	0	54	318	118	0					0.1	0.8	0.4	16.1
1706	1708	1707	A	4	436	11	8	7	15	5	0	#4 ACSR	0.04	1.08	24.94	0.0	0.4	0.0	0.7
			B	1	496	11	3	7	61	23	0					0.0	0.6	0.0	3.1
			C	1	496	11	3	7	161	60	0					0.0	0.8	0.0	8.2
1708	1710	1709	A	0	0	0	0	0	0	0	0	#4 ACSR	0.30	1.38	24.94	0.0	0.4	0.0	0.0
			B	15	721	34	29	22	51	19	0					0.0	0.6	0.0	2.6
			C	115	686	0	151	0	151	57	0					0.0	0.8	0.1	7.7
1706	1712	1711	A	8	652	24	18	15	33	12	0	#4 ACSR	0.54	1.57	24.94	0.0	0.4	0.0	1.7
			B	6	465	32	11	20	31	11	0					0.0	0.6	0.0	1.6
			C	50	803	32	82	20	102	38	0					0.1	0.8	0.1	5.2
1704	1776	1713	A	3	1,056	133	14	86	1,318	364	0	1/0 Cu	0.20	0.93	24.94	0.1	0.5	0.9	29.3
			B	18	549	133	26	86	1,426	404	0					0.1	0.7	1.2	31.8
			C	23	798	133	43	86	1,583	465	0					0.1	0.8	1.2	35.4

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1776	1714	1775	A	2	1,056	87	10	56	420	36	109	1/0 Cu	0.26	1.19	24.94	0.0	0.5	0.0	9.0
			B	27	549	109	35	70	556	87	109					0.1	0.7	0.2	12.1
			C	23	798	103	43	66	694	140	109					0.1	0.8	0.3	15.2
1714	1716	1715	A	0	0	0	0	0	353	121	0	1/0 Cu	0.45	1.64	24.94	0.1	0.6	0.1	8.0
			B	33	500	0	38	0	450	157	0					0.1	0.8	0.3	10.2
			C	5	1,194	0	22	0	584	207	0					0.1	0.9	0.4	13.3
1716	1718	1717	A	1	1	15	0	9	353	121	0	1/0 Cu	0.28	1.91	24.94	0.0	0.6	0.0	8.0
			B	12	619	15	22	9	412	143	0					0.1	0.9	0.2	9.4
			C	33	463	15	36	9	561	199	0					0.1	1.0	0.3	12.8
1718	1720	1719	A	0	0	0	0	0	0	0	0	#4 ACSR	0.21	2.12	24.94	0.0	0.6	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.9	0.0	0.0
			C	59	569	10	70	6	76	28	0					0.0	1.0	0.0	3.9
1718	1722	1721	A	0	0	0	0	0	344	118	0	#6A CWC o	0.30	2.21	24.94	0.1	0.8	0.3	17.3
			B	6	802	0	18	0	380	131	0					0.2	1.0	0.5	19.1
			C	5	681	0	14	0	440	154	0					0.2	1.2	0.6	22.2
1722	1724	1723	C	37	603	0	49	0	49	18	0	#4 ACSR	0.57	2.78	24.94	0.0	1.2	0.0	2.5
1722	1726	1725	A	3	728	0	10	0	344	118	0	#6A CWC o	0.09	2.30	24.94	0.0	0.8	0.1	17.3
			B	2	726	0	7	0	362	125	0					0.0	1.1	0.1	18.2
			C	11	779	4	25	3	376	131	0					0.0	1.2	0.1	19.0
1726	1740	1727	A	2	147	25	2	16	333	115	0	#4 ACSR	0.12	2.42	24.94	0.1	0.9	0.1	16.8
			B	5	1,093	25	21	16	354	122	0					0.1	1.1	0.2	17.9
			C	2	147	25	2	16	348	120	0					0.1	1.3	0.2	17.6

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1740	1728	1739	A	0	0	8	0	5	315	108	0	#4 ACSR	0.29	2.71	24.94	0.1	1.0	0.3	15.9
			B	0	0	8	0	5	317	109	0					0.1	1.3	0.3	16.0
			C	0	0	8	0	5	330	113	0					0.1	1.4	0.4	16.7
1728	1730	1729	A	2	2	28	0	18	310	106	0	#4 ACSR	0.35	3.06	24.94	0.2	1.1	0.3	15.6
			B	9	639	28	19	18	312	107	0					0.1	1.4	0.4	15.7
			C	4	745	28	13	18	325	112	0					0.2	1.6	0.4	16.4
1730	1732	1731	A	4	270	91	5	58	64	24	0	#4 ACSR	0.13	3.19	24.94	0.0	1.2	0.0	3.2
			B	3	3	91	0	58	58	22	0					0.0	1.4	0.0	3.0
			C	3	3	91	0	58	58	22	0					0.0	1.6	0.0	3.0
1730	1734	1733	A	16	253	336	12	216	228	76	0	1/0 AL UG	0.77	3.83	24.94	0.1	1.2	0.2	6.6
			B	11	11	336	1	216	217	72	0					0.1	1.5	0.2	6.3
			C	15	444	336	19	216	235	79	0					0.1	1.7	0.2	6.8
1718	1750	1749	A	0	0	0	0	0	0	0	0	1/0 Cu	0.07	1.98	24.94	0.0	0.6	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.9	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	1.0	0.0	0.0
1776	1778	1777	A	0	0	0	0	0	798	290	0	#2 ACSR	0.06	0.99	24.94	0.0	0.6	0.3	31.3
			B	0	0	0	0	0	757	274	0					0.0	0.7	0.2	29.8
			C	0	0	0	0	0	759	275	0					0.0	0.8	0.2	29.8
1778	1780	1779	A	0	0	0	0	0	797	290	0	#2 ACSR	0.35	1.34	24.94	0.3	0.8	1.6	31.3
			B	0	0	0	0	0	757	274	0					0.2	0.9	1.4	29.8
			C	0	0	0	0	0	759	275	0					0.2	1.0	1.4	29.8
1780	1782	1781	A	0	0	0	0	0	796	289	0	1/0 ACSR	0.47	1.81	24.94	0.3	1.1	1.4	24.5
			B	0	0	0	0	0	756	274	0					0.2	1.2	1.2	23.3
			C	0	0	0	0	0	757	275	0					0.2	1.3	1.2	23.4

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1782	1784	1783	A	0	0	0	0	0	794	289	0	4/0 AL UG	0.01	1.82	24.94	0.0	1.1	0.0	14.8
			B	0	0	0	0	0	755	273	0					0.0	1.2	0.0	14.1
			C	0	0	0	0	0	756	274	0					0.0	1.3	0.0	14.1
1784	1786	1785	A	0	0	300	0	192	794	289	0	4/0 AL UG	0.56	2.38	24.94	0.2	1.3	0.9	14.8
			B	0	0	300	0	192	755	273	0					0.1	1.3	0.8	14.1
			C	0	0	300	0	192	756	274	0					0.1	1.4	0.8	14.1
1786	1742	1747	A	53	481	270	55	173	351	131	0	#4 ACSR	0.09	2.47	24.94	0.0	1.3	0.1	17.9
			B	35	431	270	35	173	311	116	0					0.0	1.4	0.1	15.9
			C	11	455	270	16	173	313	117	0					0.0	1.4	0.1	15.9
1742	1738	1741	A	4	4,161	0	58	0	58	22	0	#4 ACSR	0.20	2.67	24.94	0.0	1.3	0.0	3.0
			B	2	2	0	0	0	0	0	0					0.0	1.4	0.0	0.0
			C	1	1	0	0	0	0	0	0					0.0	1.4	0.0	0.0
1742	1744	1743	A	1	1	101	0	65	65	24	0	#4 ACSR	0.44	2.91	24.94	0.0	1.3	0.0	3.3
			B	3	521	101	8	65	103	38	0					0.1	1.4	0.1	5.2
			C	42	651	101	59	65	124	46	0					0.1	1.5	0.1	6.3
1744	1746	1745	B	7	1,330	0	31	0	31	11	0	#4 ACSR	0.24	3.15	24.94	0.0	1.4	0.0	1.6
1786	1748	1735	A	0	0	389	0	249	250	93	0	#4 ACSR	0.61	2.99	24.94	0.2	1.5	0.4	12.7
			B	0	0	389	0	249	250	93	0					0.2	1.5	0.4	12.7
			C	0	0	389	0	249	250	93	0					0.2	1.6	0.5	12.7
1796	1794	1795	A	0	0	0	0	0	0	0	0	#2 ACSR	0.02	0.44	24.94	0.0	0.2	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.3	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.4	0.0	0.0

Projected Loading on Existing System

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
1702	1798	1797	A	0	0	0	0	0	0	0	0	1/0 Cu	0.02	0.06	24.94	0.0	0.0	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0

Feeder Data: (Dom. Customers = 818 at an average of 586 kWh/Month) (Measured Demands = 5,880 kW) (Losses = 40 kW) (Total Loading = 5,027 kW)

Appendix C - 2

Projected System with Projected Loading

Projected System and Loading, converted part of McNary to 24.94 kV

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
11	102	101	A	0	0	0	0	0	628	68	0	3/0 ACSR	0.42	0.42	24.94	0.1	0.1	0.3	13.9
			B	1	1,691	0	10	0	784	119	0					0.1	0.1	0.8	17.5
			C	0	0	0	0	0	965	179	0					0.2	0.2	1.0	21.6
102	104	103	A	4	466	0	10	0	107	27	0	#4 ACSR	0.06	0.48	24.94	0.0	0.1	0.0	5.2
			B	0	0	0	0	0	98	29	0					0.0	0.2	0.0	4.8
			C	0	0	0	0	0	82	22	0					0.0	0.2	0.0	4.0
104	106	105	A	0	0	14	0	11	53	11	0	#4 ACSR	0.24	0.72	24.94	0.0	0.1	0.0	2.6
			B	0	0	10	0	8	98	30	0					0.0	0.2	0.0	4.8
			C	3	159	5	3	4	82	23	0					0.0	0.2	0.0	4.0
106	2914	2933	A	0	0	0	0	0	42	12	0	#2 ACSR	0.24	0.96	24.94	0.0	0.1	0.0	1.6
			B	0	0	0	0	0	90	26	0					0.0	0.2	0.0	3.4
			C	0	0	0	0	0	75	22	0					0.0	0.2	0.0	2.9
2914	2936	2935	A	1	534	0	4	0	42	12	0	#6A CWC o	0.16	1.12	24.94	0.0	0.1	0.0	2.1
			B	6	339	0	10	0	90	26	0					0.0	0.2	0.0	4.4
			C	3	192	20	4	15	75	22	0					0.0	0.2	0.0	3.7
2936	2942	2941	A	5	228	4	6	3	9	2	0	#4 ACSR	0.29	1.41	24.94	0.0	0.1	0.0	0.4
			B	7	633	4	19	3	22	6	0					0.0	0.2	0.0	1.1
			C	8	552	4	18	3	21	6	0					0.0	0.2	0.0	1.1
2936	2944	2943	A	11	490	0	21	0	29	9	0	#4 ACSR	0.15	1.27	24.94	0.0	0.1	0.0	1.4
			B	11	490	0	21	0	58	17	0					0.0	0.2	0.0	2.9
			C	11	490	0	21	0	34	10	0					0.0	0.2	0.0	1.7
2944	2946	2945	B	20	455	0	29	0	29	8	0	#4 ACSR	0.35	1.62	24.94	0.0	0.3	0.0	1.4

Projected System and Loading, converted part of McNary to 24.94 kV

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
2944	2948	2947	A	3	492	0	9	0	9	3	0	#4 ACSR	0.06	1.33	24.94	0.0	0.1	0.0	0.4
			B	5	341	0	9	0	9	3	0					0.0	0.2	0.0	0.4
			C	8	398	0	14	0	14	4	0					0.0	0.2	0.0	0.7
104	108	107	A	29	536	0	44	0	44	13	0	#4 ACSR	0.29	0.77	24.94	0.0	0.1	0.0	2.2
			B	0	0	0	0	0	0	0	0					0.0	0.2	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	0.2	0.0	0.0
102	176	113	A	4	363	15	8	12	521	41	0	3/0 ACSR	2.66	3.08	24.94	0.3	0.4	0.8	11.5
			B	1	111	15	1	12	675	87	0					0.8	1.0	4.1	15.0
			C	1	111	15	1	12	882	156	0					0.9	1.1	5.4	19.8
176	114	175	A	0	0	0	0	0	501	36	110	3/0 ACSR	0.02	3.10	24.94	0.0	0.4	0.0	11.1
			B	0	0	0	0	0	659	84	109					0.0	1.0	0.0	14.8
			C	0	0	0	0	0	864	146	108					0.0	1.1	0.0	19.5
114	262	165	A	0	0	0	0	0	501	146	0	3/0 ACSR	0.12	3.21	24.94	0.0	0.4	0.0	11.5
			B	0	0	0	0	0	659	192	0					0.0	1.0	0.2	15.2
			C	0	0	0	0	0	864	255	0					0.0	1.1	0.2	20.0
262	166	261	A	0	0	0	0	0	501	146	0	3/0 ACSR	0.02	3.23	24.94	0.0	0.4	0.0	11.5
			B	0	0	0	0	0	659	192	0					0.0	1.0	0.0	15.2
			C	0	0	0	0	0	864	254	0					0.0	1.1	0.0	20.0
166	168	167	A	0	0	0	0	0	242	72	0	#4 ACSR	0.42	3.65	24.94	0.1	0.6	0.2	11.9
			B	9	766	0	26	0	301	90	0					0.2	1.2	0.4	14.9
			C	0	0	0	0	0	240	69	0					0.1	1.3	0.3	11.9
168	170	169	A	11	370	291	16	224	241	72	0	#4 ACSR	0.89	4.54	24.94	0.3	0.9	0.5	12.0
			B	14	385	329	19	253	274	82	0					0.3	1.5	0.7	13.6
			C	8	305	291	11	224	240	69	0					0.3	1.5	0.6	11.9

Projected System and Loading, converted part of McNary to 24.94 kV

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
170	172	171	A	1	139	0	1	0	1	0	0	4_4-3 AWAC	0.58	5.12	24.94	0.0	0.9	-0.1	0.1
			B	1	139	0	1	0	1	0	0					0.0	1.5	0.0	0.1
			C	1	139	0	1	0	1	0	0					0.0	1.5	0.1	0.1
170	174	173	C	1	437	0	3	0	3	-1	0	#4 ACSR	2.28	6.82	24.94	0.0	1.6	0.0	0.2
166	248	249	A	0	0	0	0	0	259	74	0	3/0 ACSR	0.07	3.30	24.94	0.0	0.4	0.0	6.0
			B	0	0	0	0	0	358	103	0					0.0	1.0	0.0	8.3
			C	0	0	0	0	0	623	185	0					0.0	1.2	0.1	14.5
248	256	255	A	1	1	27	0	20	259	74	0	3/0 ACSR	1.13	4.43	24.94	0.1	0.5	-0.1	6.0
			B	19	867	27	49	20	358	103	0					0.2	1.3	0.6	8.3
			C	17	835	27	43	20	623	185	0					0.3	1.5	1.3	14.5
256	258	257	A	4	883	19	18	15	32	10	0	#2 ACSR	0.27	4.69	24.94	0.0	0.5	0.0	1.2
			B	7	455	19	14	15	29	9	0					0.0	1.3	0.0	1.1
			C	27	861	38	63	29	92	28	0					0.0	1.5	0.0	3.6
256	178	177	A	0	0	0	0	0	206	60	0	3/0 ACSR	0.08	4.50	24.94	0.0	0.5	0.0	4.8
			B	0	0	0	0	0	259	75	0					0.0	1.3	0.0	6.0
			C	0	0	0	0	0	466	138	0					0.0	1.5	0.1	10.9
178	226	225	A	147	375	15	134	12	146	43	0	#4 ACSR	1.68	6.18	24.94	0.2	0.6	0.0	7.2
			B	2	702	15	9	12	78	21	0					0.2	1.4	0.1	3.9
			C	140	525	23	172	18	191	56	0					0.3	1.8	0.5	9.5
226	180	179	B	53	413	0	57	0	57	17	0	#4 ACSR	0.59	6.77	24.94	0.0	1.5	0.0	2.9
178	182	181	A	0	0	0	0	0	61	17	0	3/0 ACSR	0.16	4.66	24.94	0.0	0.5	0.0	1.4
			B	1	2,926	0	17	0	181	54	0					0.0	1.3	0.0	4.2
			C	4	96	0	2	0	276	81	0					0.0	1.6	0.0	6.4

Projected System and Loading, converted part of McNary to 24.94 kV

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
182	184	183	A	1	1	16	0	12	12	3	0	#4 ACSR	0.23	4.89	24.94	0.0	0.5	0.0	0.6
			B	25	248	48	20	37	57	17	0					0.0	1.3	0.0	2.8
			C	7	486	16	15	12	179	53	0					0.1	1.6	0.1	8.9
184	186	185	C	125	418	32	126	25	151	45	0	#4 ACSR	1.73	6.62	24.94	0.2	1.9	0.2	7.6
182	260	259	A	3	1,172	39	18	30	48	14	0	3/0 ACSR	0.74	5.40	24.94	0.0	0.5	-0.1	1.1
			B	33	366	95	35	73	108	32	0					0.0	1.3	0.0	2.5
			C	29	226	96	20	74	94	28	0					0.0	1.6	0.1	2.2
114	264	263	A	0	0	0	0	0	0	0	0	#2 ACSR	0.02	3.12	24.94	0.0	0.4	0.0	0.0
			B	0	0	0	0	0	0	0	0					0.0	1.0	0.0	0.0
			C	0	0	0	0	0	0	0	0					0.0	1.1	0.0	0.0

Feeder Data: (Dom. Customers = 834 at an average of 463 kWh/Month) (Measured Demands = 1,569 kW) (Losses = 19 kW) (Total Loading = 2,377 kW)

Projected System and Loading, converted 8.8 miles of 1-ph to 3-ph 1/0 ACSR, added set of regulators

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
163	6502	6501	A	0	0	0	0	0	802	80	0	4/0 AL UG	0.08	0.08	24.94	0.0	0.0	0.1	14.0
			B	0	0	0	0	0	622	56	0					0.0	0.0	0.1	10.8
			C	0	0	0	0	0	809	84	0					0.0	0.0	0.1	14.1
6502	6504	6503	A	15	726	1	36	1	802	81	0	#2 ACSR	3.44	3.52	24.94	2.2	2.2	12.5	29.6
			B	1	118	1	1	1	622	57	0					1.7	1.7	7.9	22.9
			C	6	600	8	17	6	809	85	0					2.4	2.4	14.9	29.9
6504	6506	6505	A	1	1	1	0	1	1	-2	0	#2 ACSR	2.09	5.61	24.94	0.0	2.2	-0.2	0.1
			B	1	1	1	0	1	1	-3	0					0.0	1.7	0.0	0.1
			C	1	1	1	0	1	1	-2	0					0.0	2.4	0.2	0.1
6504	6508	6507	A	4	620	37	13	30	752	73	0	#2 ACSR	0.51	4.02	24.94	0.3	2.5	1.7	28.3
			B	2	266	37	4	30	611	60	0					0.2	1.9	1.2	22.9
			C	10	536	49	21	39	770	80	0					0.3	2.8	2.0	29.0
6508	6510	6509	A	0	0	0	0	0	707	66	0	#2 AL UG	0.11	4.13	24.94	0.1	2.6	0.4	26.6
			B	0	0	0	0	0	577	56	0					0.1	2.0	0.2	21.6
			C	0	0	0	0	0	708	71	0					0.1	2.9	0.4	26.7
6510	6512	6511	A	22	729	26	48	21	707	67	0	#2 ACSR	0.10	4.23	24.94	0.1	2.6	0.3	26.6
			B	1	1	26	0	21	577	56	0					0.0	2.0	0.2	21.6
			C	5	754	26	18	21	708	71	0					0.1	2.9	0.3	26.7
6512	6514	6513	A	36	564	8	56	6	63	6	0	#4 ACSR	3.45	7.68	24.94	0.2	2.8	0.1	3.0
6512	6516	6515	A	41	537	51	60	41	575	51	0	#2 ACSR	0.48	4.71	24.94	0.2	2.8	0.9	21.7
			B	1	1	21	0	17	556	53	0					0.2	2.2	1.0	20.8
			C	42	631	21	71	17	668	66	0					0.3	3.2	1.3	25.3

Projected System and Loading, converted 8.8 miles of 1-ph to 3-ph 1/0 ACSR, added set of regulators

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
6516	6518	6517	A	17	294	12	18	9	78	10	0	#2 ACSR	0.38	5.09	24.94	0.0	2.9	0.0	3.0
			B	1	1	12	0	9	10	0	0					0.0	2.2	0.0	0.4
			C	5	428	12	11	9	165	23	0					0.1	3.2	0.1	6.3
6518	6520	6519	A	22	771	1	50	0	51	7	0	#4 ACSR	0.38	5.47	24.94	0.0	2.9	0.0	2.5
			B	1	1	1	0	0	0	0	0					0.0	2.3	0.0	0.0
			C	76	782	1	144	0	144	20	0					0.0	3.3	0.1	7.1
6516	6522	6521	A	0	0	0	0	0	396	26	0	1/0 ACSR	1.04	5.76	24.94	0.3	3.1	0.7	11.7
			B	0	0	0	0	0	528	51	0					0.3	2.6	1.3	15.5
			C	13	639	0	29	0	415	30	0					0.2	3.3	0.6	12.3
6522	6524	6523	A	0	0	0	0	0	395	27	0	1/0 ACSR	0.87	6.62	24.94	0.2	3.3	0.6	11.7
			B	0	0	0	0	0	527	51	0					0.3	2.8	1.1	15.5
			C	0	0	0	0	0	385	27	0					0.1	3.4	0.4	11.4
6524	6526	6525	A	2	678	0	9	0	9	0	0	#4 ACSR	0.84	7.46	24.94	0.0	3.3	-0.1	0.4
			B	0	0	0	0	0	0	-1	0					0.0	2.8	0.0	0.1
			C	1	1,282	0	8	0	8	0	0					0.0	3.5	0.1	0.4
6524	6528	6527	A	3	722	0	12	0	386	28	0	1/0 ACSR	2.45	9.07	24.94	0.6	3.9	1.6	11.4
			B	0	0	0	0	0	526	52	0					0.8	3.6	3.0	15.5
			C	4	686	0	15	0	376	27	0					0.3	3.8	1.1	11.1
6528	6530	6529	A	0	0	0	0	0	0	-1	0	#4 ACSR	1.06	10.13	24.94	0.0	3.9	-0.1	0.1
			B	0	0	0	0	0	0	-1	0					0.0	3.6	0.0	0.1
			C	0	0	0	0	0	0	-1	0					0.0	3.8	0.1	0.1
6528	6532	6531	A	11	401	0	17	0	372	29	0	1/0 ACSR	4.20	13.27	24.94	1.0	5.0	2.6	11.1
			B	0	0	0	0	0	523	54	0					1.3	4.9	5.2	15.6
			C	16	731	0	38	0	360	28	0					0.5	4.2	1.5	10.7

Projected System and Loading, converted 8.8 miles of 1-ph to 3-ph 1/0 ACSR, added set of regulators

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
6532	6560	6559	A	12	410	0	19	0	19	0	0	#4 ACSR	2.84	16.11	24.94	0.0	5.0	0.0	0.9	
6532	10001	10001	A	0	0	0	0	0	333	30	0	Regulator	0.00	13.27	24.94	-3.0	2.0	0.0	23.0	5.0
			B	0	0	0	0	0	518	54	0					-3.0	1.9	0.0	35.8	
			C	0	0	0	0	0	321	26	0					-2.3	1.9	0.0	22.0	
10001	6558	6557	A	1	383	0	3	0	333	30	0	1/0 ACSR	1.19	14.46	24.94	0.3	2.2	0.6	9.8	
			B	0	0	0	0	0	518	54	0					0.4	2.3	1.4	15.2	
			C	0	0	0	0	0	321	26	0					0.1	2.0	0.4	9.4	
6558	6536	6535	A	19	517	0	32	0	330	31	0	1/0 ACSR	2.43	16.89	24.94	0.5	2.7	0.9	9.7	
			B	4	505	0	11	0	425	45	0					0.6	2.9	1.9	12.5	
			C	17	520	0	29	0	320	27	0					0.3	2.3	0.8	9.4	
6536	6538	6537	A	30	583	0	50	0	297	29	0	1/0 ACSR	4.90	21.80	24.94	0.9	3.6	1.4	8.8	
			B	30	583	0	50	0	412	45	0					1.2	4.0	3.3	12.2	
			C	30	583	0	50	0	290	25	0					0.4	2.7	1.3	8.5	
6538	6540	6539	A	19	471	0	29	0	246	27	0	1/0 ACSR	0.89	22.68	24.94	0.1	3.8	0.2	7.3	
			B	19	471	0	29	0	359	41	0					0.2	4.2	0.5	10.7	
			C	19	471	0	29	0	239	23	0					0.1	2.8	0.2	7.1	
6540	6542	6541	A	0	0	0	0	0	217	23	0	1/0 ACSR	0.68	23.37	24.94	0.1	3.9	0.1	6.5	6.9
			B	0	0	0	0	0	329	38	0					0.1	4.4	0.3	9.9	
			C	0	0	0	0	0	210	20	0					0.0	2.9	0.1	6.2	
6542	6544	6543	B	114	574	0	159	0	258	31	0	#6A CWC o	4.40	27.76	24.94	1.2	5.5	2.0	12.7	
6544	6546	6545	B	0	0	0	0	0	0	0	0	#6A CWC o	0.10	27.86	24.94	0.0	5.5	0.0	0.0	8.5
6544	6548	6547	B	71	538	0	97	0	97	11	0	#6A CWC o	3.20	30.96	24.94	0.2	5.8	0.2	4.8	8.8

Projected System and Loading, converted 8.8 miles of 1-ph to 3-ph 1/0 ACSR, added set of regulators

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %	
6542	6550	6549	A	36	737	0	71	0	217	24	0	1/0 ACSR	2.24	25.61	24.94	0.2	4.0	0.0	6.5	
			B	36	737	0	71	0	71	7	0					0.0	4.4	0.0	2.1	
			C	36	737	0	71	0	210	20	0					0.3	3.2	0.7	6.2	
6550	6552	6551	A	84	615	22	127	18	145	16	0	#6A CWC o	5.35	30.96	24.94	0.6	4.7	0.7	7.1	7.7
6550	6554	6553	C	33	769	0	69	0	138	13	0	#6A CWC o	2.50	28.12	24.94	0.4	3.5	0.3	6.7	
6554	6556	6555	C	3	2,129	45	32	36	68	5	0	#4 ACSR	5.48	33.60	24.94	0.4	4.0	0.2	3.3	7.0
6558	6534	6533	B	77	463	0	91	0	91	9	0	#2 ACSR	4.58	19.04	24.94	0.2	2.5	0.1	3.4	
6502	6598	6597	A	0	0	0	0	0	0	0	0	#2 ACSR	0.02	0.10	24.94	0.0	0.0	0.0	0.0	
			B	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0	
			C	0	0	0	0	0	0	0	0					0.0	0.0	0.0	0.0	

Feeder Data: (Dom. Customers = 1,050 at an average of 604 kWh/Month) (Measured Demands = 419 kW) (Losses = 83 kW) (Total Loading = 2,233 kW)

Projected System & Loading, converted 1.54 miles of 3-ph to 477 MCM ACSR, converted 1.72 miles of V-ph to 3-ph #2 ACSR

From Bus	To Bus	Sect	Ph	Domestic Customers No.	Domestic Customers Avg kWh	Spot Demand kW	Diversified Domest Demand kW	Diversified Spot Demand kW	Power Flow into Section kW	Power Flow into Section kVAR	Shunt Banks kVAR	Conductor Type	Sect Miles	From Sub Miles	Base Volt. L-L kV	Voltage Drop (120 V Base) Sect	Voltage Drop (120 V Base) from Sub	Losses kW	Cond Load %
192	2602	2601	A	2	426	0	5	0	1,069	88	0	477 ACSR	0.32	0.32	24.94	0.0	0.0	0.2	10.6
			B	0	0	0	0	0	1,530	194	0					0.1	0.1	1.1	15.2
			C	11	637	0	22	0	1,621	221	0					0.1	0.1	0.4	16.2
2602	2604	2603	B	167	514	0	170	0	170	39	0	#4 ACSR	1.26	1.58	24.94	0.2	0.3	0.2	8.2
2602	2606	2605	A	3	393	0	6	0	1,065	86	0	477 ACSR	0.79	1.11	24.94	0.1	0.1	0.4	10.5
			B	7	956	0	23	0	1,359	153	0					0.2	0.3	2.0	13.5
			C	21	906	3	46	2	1,599	214	0					0.2	0.2	1.4	15.9
2606	2608	2607	B	121	565	0	136	0	136	31	0	#4 ACSR	1.38	2.49	24.94	0.1	0.5	0.1	6.6
2606	2610	2609	A	0	0	0	0	0	1,058	84	0	477 ACSR	0.11	1.22	24.94	0.0	0.1	0.0	10.5
			B	0	0	0	0	0	1,198	115	0					0.0	0.4	0.2	11.9
			C	2	1,568	0	15	0	1,550	197	0					0.0	0.2	0.2	15.4
2610	2612	2611	A	8	687	14	19	9	28	6	0	#2 ACSR	0.23	1.45	24.94	0.0	0.1	0.0	1.0
			B	1	1	14	0	9	45	10	0					0.0	0.4	0.0	1.7
			C	2	817	14	8	9	89	21	0					0.0	0.3	0.0	3.4
2612	2614	2613	B	41	382	0	36	0	36	8	0	#2 ACSR	0.27	1.72	24.94	0.0	0.4	0.0	1.4
			C	75	455	0	72	0	72	17	0					0.0	0.3	0.0	2.7
2610	2616	2615	A	13	369	0	15	0	1,031	77	0	477 ACSR	0.32	1.54	24.94	0.0	0.2	0.2	10.2
			B	16	638	0	28	0	1,153	104	0					0.1	0.4	0.5	11.5
			C	11	719	0	24	0	1,445	172	0					0.1	0.3	0.6	14.4
2616	2618	2617	A	0	0	0	0	0	753	33	109	#6 Cu	0.35	1.89	24.94	0.3	0.5	1.7	41.6
			B	3	228	0	4	0	840	54	109					0.4	0.8	2.5	46.6
			C	13	303	0	12	0	1,067	111	109					0.5	0.8	3.8	59.3
2618	2620	2619	A	169	353	0	123	0	123	28	0	#4 ACSR	1.04	2.93	24.94	0.1	0.6	0.1	6.0