

Summary  
of  
Heber Light & Power Company  
Impact Fee Facilities Plan

As part of its strategic planning process, the Company annually assesses historic growth in energy sales and projects future anticipated increase in sales. Based on this annual review, the Company determines its future for capital improvement requirements to serve the projected growth. The Company currently projects that the new development will increase demand for electricity at the rate of 2-3% per year.

This demand for electricity from new development will exceed the existing capacity of the system to deliver electricity to customers. Stated in other words, the Company cannot serve this growth in demand without building new facilities or upgrading existing facilities to meet the demand. At the present time, the system has no excess capacity to serve demand for electricity from new development.

The Company's Impact Fee Facilities Plan identifies the types of system improvements that are required to serve the projected load growth. The cost of these system improvements is estimated to be \$3,542,000 over the next several years .

The Company's growth projections and cost estimates are used in the Impact Fee Study Report. Without an impact fee, these costs will be paid by all customers through the Company's charges for electricity. An impact fee allows the Company to charge the new customers with some of this additional cost of providing them service.

## Heber Light & Power Company

### Impact Fee Facilities Plan

This Impact Fee Facilities Plan is intended to supplement and provide additional support for the information found Section 2 of the Impact Fee Study Report by R.E. Pender, Inc. dated September 2013 (“Pender Report”).

#### A. Background

Heber Light & Power Company is a Utah energy services interlocal entity created by Heber City, Charleston, and Midway City. The Company provides service to more than 10,400 customers in a service area covering 120 square miles including most of the Heber Valley. The Company owns and operates three hydroelectric generators and thermal generating plants with an overall generating capacity of 16.5 megawatts. Prior to the current economic slowdown, annual customer growth averaged a robust 15-25% per year; however, recently, the growth has been a 2-3% per year.

#### B. Need for System Improvements to Serve Demand From New Development

As part of its strategic planning process, the Company annually assesses historic growth in energy sales and projects future anticipated increase in sales. The Section 2 of the Pender Report contains the Company’s projections and the assumptions on which the Company based its projections.

In assessing what System Improvement are necessary to serve the demand from New Development, it is important to recognize that HLP operates a single-integrated system which must be viewed as a whole. It is not appropriate to view any component of the system in isolation, for assessing the impact of new development on the system’s capacity. Rather, the issue is whether the system, as a whole, has the capacity to serve the new development at HLP’s existing level of service, not whether any isolated circuit within the system has the capacity to serve the new development

HLP’s analysis of the system’s current load and existing capacity shows that HLP cannot serve projected load growth without increasing the capacity of the system. Stated in other words, the projected load growth exceeds the capacity of the facilities required to serve the load and thus would compromise the Company’s current level of service. Therefore the system does not have excess capacity to serve projected new load growth.

This conclusion is in part based upon the Electrical System Model Update and Analysis date October 2011 by Intermountain Consumer Professional Engineers, Inc. (“System

Analysis”), attached hereto as Exhibit A and by the load growth projections on which the System Analysis is based. It is worth noting that, in 2012-13, actual load growth exceeded these projections. The System Analysis shows the additional facility capacity required to serve new development at the Company’s current level of service.

The System Analysis identifies System Improvements required to increase the system’s capacity to serve the load from projected new growth. These system improvements include: (1) increasing capacity by installing additional distribution feeders and tie circuits, (2) installing, upgrading, or reconductoring existing circuits and feeders (3) installing additional substation breakers, and (4) installing new or upgraded substation transformers and protective equipment. Examples of these types of System Improvements and the cost of these System Improvements are summarized in Exhibit B. The Company’s cost estimates are based on the Company’s standard method of estimating material and labor costs for its projects. The Company intends to use impact fees to fund a portion of the cost of these types of System Improvements; however the specific projects may vary depending on (1) the needs of the system at the time that the funds are available or (2) the portions of the system most impacted by new development.

C. Revenue Sources to Fund New System Improvements for Load Growth

HLP funds system improvements through (1) electric power revenues, (2) bonds, and (3) impact fees. Electric power revenues, in part, cover debt service and system improvements. Impact fees are used strictly to pay for system improvements for new load growth. Developers ordinarily pay the costs of project specific improvements and do not pay for or provide system-wide improvements. HLP has received small grants for street light refitting and emergency planning but grants do not play a role in HLP’s capital plan. HLP does not receive interfund transfers or loans from its members.

D. New Customers Future Contributions to System Improvements Through Rates

The Company has no existing excess capacity to serve new customers and therefore the revenue from the proposed Impact Fee does not fund excess capacity through existing System Improvements. As to existing System Improvements funded through debt, new and existing customers share equally this debt burden through future rates. These System Improvements benefit all customers because the Company’s system is an integrated system. In addition, the Company only recovers a portion of the cost of the System Improvements for projected future

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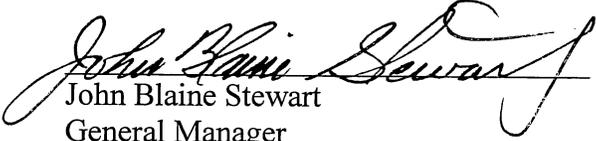
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growth. Thus, existing customers as well as new customers pay for a portion of these improvements through electric rates.

I certify that the attached impact fee facilities plan:

1. includes only the costs of public facilities that are:
  - a. allowed under the Impact Fees Act; and
  - b. actually incurred; or
  - c. projected to be incurred or encumbered within six years after the day on which each impact fee is paid;
2. does not include:
  - a. costs of operation and maintenance of public facilities;
  - b. costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents;
  - c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement; and
3. complies in each and every relevant respect with the Impact Fees Act.

Dated this 13 day of September, 2013

  
John Blaine Stewart  
General Manager  
Heber Light & Power Company

# EXHIBIT A

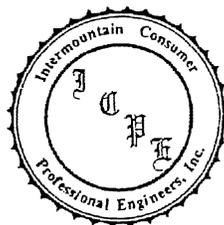
# Study Summary

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## Heber Light & Power Electrical System Model Update and Analysis

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October 2011



Intermountain Consumer  
Professional Engineers, Inc.  
1145 East South Union Avenue  
Midvale, Utah 84047  
(801) 255-1111

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## INTRODUCTION

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The main objective for this study was to update the existing computer model to reflect recent acquisitions and expansions to the Heber City electrical system and evaluate the performance in order to identify potential problems. This document includes a summary of results for the electrical system model. Resultant data includes fault currents and load flow approximations for the HL&P system circuits.

### Model Construction

The City model upgrades are based upon the information provided by Heber Light & Power. Modifications made to the existing system model are the following:

1. Load was added to Heber 302 circuit – RMP/HL&P ownership changed at Coyote Lane.
2. Circuit expansion was made between the Provo River 201 circuit and the express feeder down Homestead Drive. This connection included the addition of Snake Creek Hydro Plant, Swiss Mtn. Estates, and Oak Haven accordingly.
3. Load was added to the Heber 303 circuit to reflect the addition of Wal-Mart.
4. Midway Substation transformer capacity was increased to 10 MVA. Impedance was set to be 8% .
5. Daniels area conductor size was changed to 477 ACSR on the Jail House 504 circuit.
6. Circuit loads were adjusted to match the 2011 peak loading meter data provided by HL&P.
7. The system open points were updated according to the AutoCAD system map provided by HL&P.

### Assumptions

Several assumptions had to be made in order to model the system. Calculated and/or generalized estimates were used where data was not precise or otherwise incomplete. Model assumptions and estimates were used for items in the following categories:

- Line/Cable Impedances
- Transformer Impedances
- Generator Impedances
- Transformer Sizes
- Cable Lengths
- Balanced 3 Phase Loads

The generated model(s) assumes a balanced system and conservative estimates were used for the respective connected load summations.

### Study Methods

Two major studies were performed; short circuit analysis and load flow. The short circuit study was calculated and simulated using the classical method while providing output for ½ cycle symmetrical 3- Phase fault values at all major busses throughout the transmission system. Short circuit source impedance values were generated by simulating a fault on the RMP 46 kV system at the point delivery. Short circuit analysis was primarily run to determine the impact of the Snake Creek Hydro Generator addition and increased transformer capacity.

Power Flow calculations are based on the “Fast Decoupled” method. System load flow analysis was run to determine the impact of the new circuit modifications described above. Additional load flow studies were ran to determine the future impact for the next 4 years based off of projected peak loading. This projected peak load data was provided by HL&P. Additional meter data was utilized in order to estimate the present peak demand. The load tabulations for the newly acquired areas are based on balanced 3 phase conservative values and should be considered approximations only.

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## RESULTS SUMMARY

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### Short Circuit Study

Table 1 below provides fault current values generated by the EDSA model at specific points of interest. The corresponding one-line labeled Short Circuit Study is found in the attachments section where these fault currents are printed at each bus accordingly.

<b>2011 1/2 Cycle 3-Phase Symmetrical Fault Current Data</b>				
<b>Model Bus Tag</b>	<b>Bus Description</b>	<b>Fault Current (Amps)</b>	<b>Imped. Z + (PU)</b>	<b>Imped. Z 0 (PU)</b>
101023	46 kV Midway Substation	8188	0.1535	0.1143
101029	12.47 kV Midway Substation	4858	0.9531	0.8000
101065	46 kV Provo River Substation	6922	0.1813	0.4158
101066	12.47 kV Provo River Substation	3412	1.3568	1.2791
101131	46 kV Heber Substation	6553	0.1915	0.4893
10138	12.47 kV Heber Substation	8182	0.5659	0.4995
101177	46 kV Cloyes Substation	6616	0.1897	0.4510
101184	12.47 kV Cloyes Substation	3898	1.1878	0.9989
101198	46 kV Jail House Substation	5377	0.2334	0.6276
101199	12.47 kV Jail House Substation	5731	0.8079	0.5703
101242	46 kV College Substation	4422	0.2839	1.0728
101262	12.47 kV College Substation	11019	0.4202	0.2501

Table 1

## Load Flow Study

Table 2 below provides “worst-case” voltage drop percentage based on the respective load flow studies generated by the EDSA model. The model single-line displaying the flow values for each circuit are available upon request. The circuits that present significant concern are found in the attachments section; refer to the attachments section for these cases.

Load Flow Parameters for Projected Peak Loads										
Year	2011		2012		2013		2014		2015	
Circuit No.	Peak Load (kW)	Voltage Drop (%)								
CL401	1985	0.2	2065	0.2	2176	0.2	2324	0.2	2513	0.3
CL402	1538	0.1	1599	0.1	1686	0.1	1800	0.1	1947	0.2
HB302	3260	2.2	3391	2.2	3576	2.4	3821	2.5	4135	2.7
HB303	1130	0.1	1178	0.1	1241	0.1	1326	0.1	1433	0.2
HB304	2910	1.2	3027	1.3	3191	1.3	3409	1.4	3687	1.6
HB305	1564	0.2	1627	0.2	1715	0.2	1832	0.2	1980	0.3
JH501	2711	1.5	2820	1.5	2974	1.6	3178	1.7	3439	1.9
JH502	3966	9.7	4134	10.1	4371	10.8	4689	11.6	5099	12.7
JH503	634	0.1	659	0.1	695	0.1	742	0.1	803	0.1
JH504	2354	2.7	2450	2.9	2584	3.2	2763	3.6	2992	4.1
MW101	2858	3.2	2974	3.3	3137	3.5	3354	3.8	3631	4.1
MW104	1106	0.4	1151	0.4	1213	0.4	1296	0.4	1401	0.5
PR201	3688	7.7	3846	8	4068	8.5	4365	9.1	4749	9.9
PR202	484	0	504	0	532	0	567	0	614	0

Notes:

- 1 Voltage drop percentage shown is the worst case value usually along the furthest point in the given circuit. It is not intended to represent an average or general value.

Table 2

## Observations

Several observations were made during the various studies performed. These key items are summarized in Table 3 seen below. Please note that these observations are based upon factors and circumstances that may need verification before issues and solutions are valid.

Key Observations		
Item/Circuit No.	Issue	Proposed Solution
Provo River Sub XF	Power flow is close to exceeding the transformer 7 MVA rating	Upsize the transformer capacity
Jail House Sub XF	Power flow is close to exceeding the transformer 12.5 rating	Upsize the transformer capacity
South Line Feed	Current rating exceeds the #4/0 ACSR cable for the projected loads	Upgrade feeder size from #4/0 ACSR to #795 ACSR minimum
JH502	Current rating exceeded for the #2 ACSR cable from regulator towards Timber Lakes	Upgrade feeder from #2 ACSR to #2/0 ACSR minimum, and/or revise circuits to shed part of the newly acquired load
JH502	Voltage drop is significant at the Timber Lakes area	Revise circuits to shed some of the newly acquired load and/or step up the Voltage for that area
JH504	Voltage drop could be significant near the Bingelli plant area	Revise circuits to shed some of the acquired load and/or step up the Voltage for that area (via regulator)
PR201	Current rating will be exceeded for the #1/0 ACSR cable along Main St., 400 East/River Rd., and Burgi Lane (based off of projected future peak loading)	Upgrade feeder from #1/0 to a #4/0 minimum (#477 ACSR should provide adequate ampacity for future growth along these routes), and/or revise circuits to shed part of the newly acquired load
PR201	Voltage drop is significant at the Oak Haven, Swiss Mtn. Estates, and the lines toward the Hydro Plant	Revise circuits to shed part of the newly acquired load and/or step up the Voltage for these areas (via regulator)

Table 3

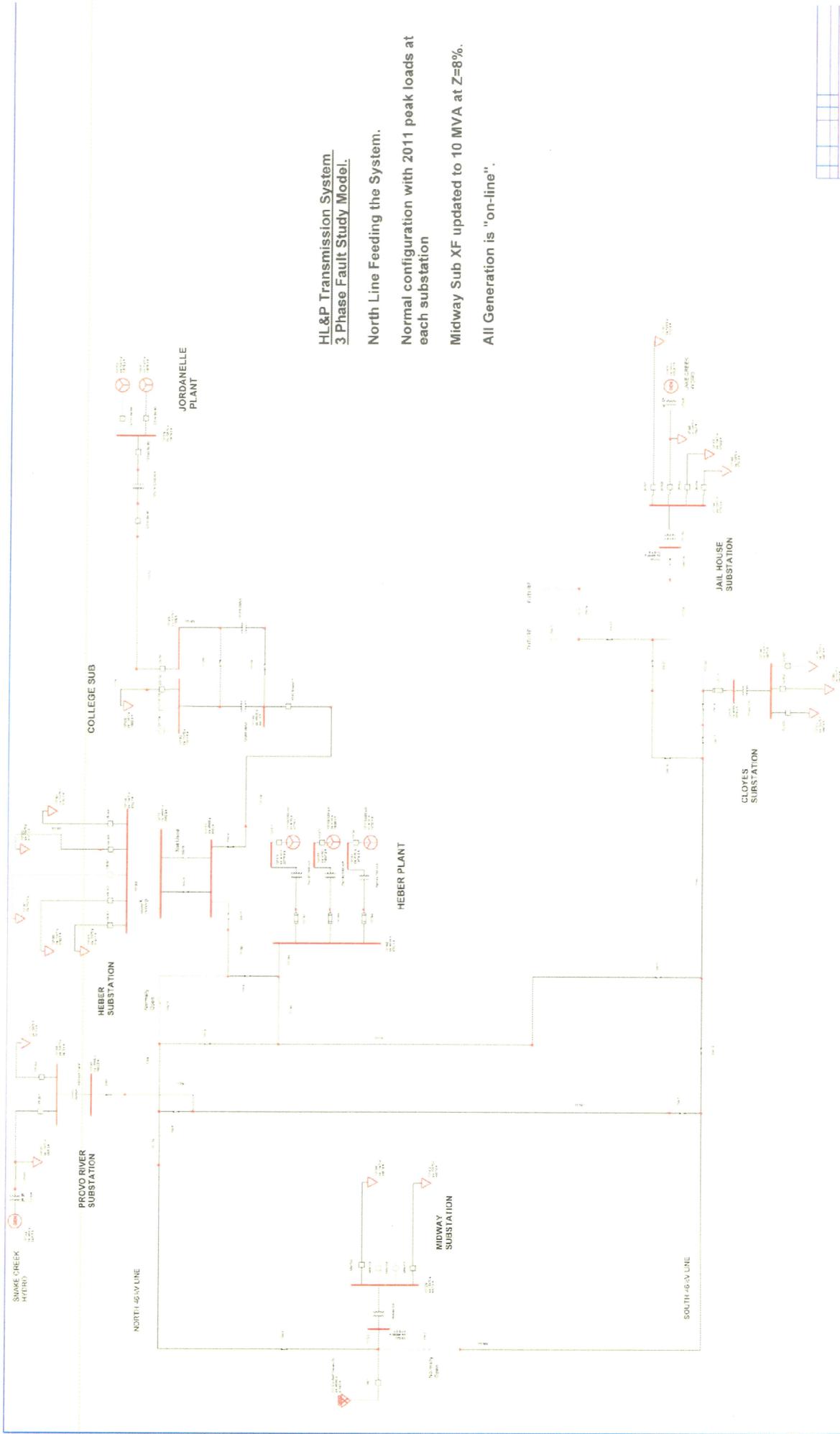
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## ATTACHMENTS

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### List of Attached EDSA Study Single-Line Circuits

1. Short Circuit Study Single Line – Transmission System
2. Load Flow Study Single Line – Transmission System North Line Feed
3. Load Flow Study Single Line – Transmission System South Line Feed
4. Jail House 502 circuit Load Flow
5. Jail House 504 circuit Load Flow
6. Provo River 201 circuit Load Flow



**HL&P Transmission System  
3 Phase Fault Study Model.**

North Line Feeding the System.

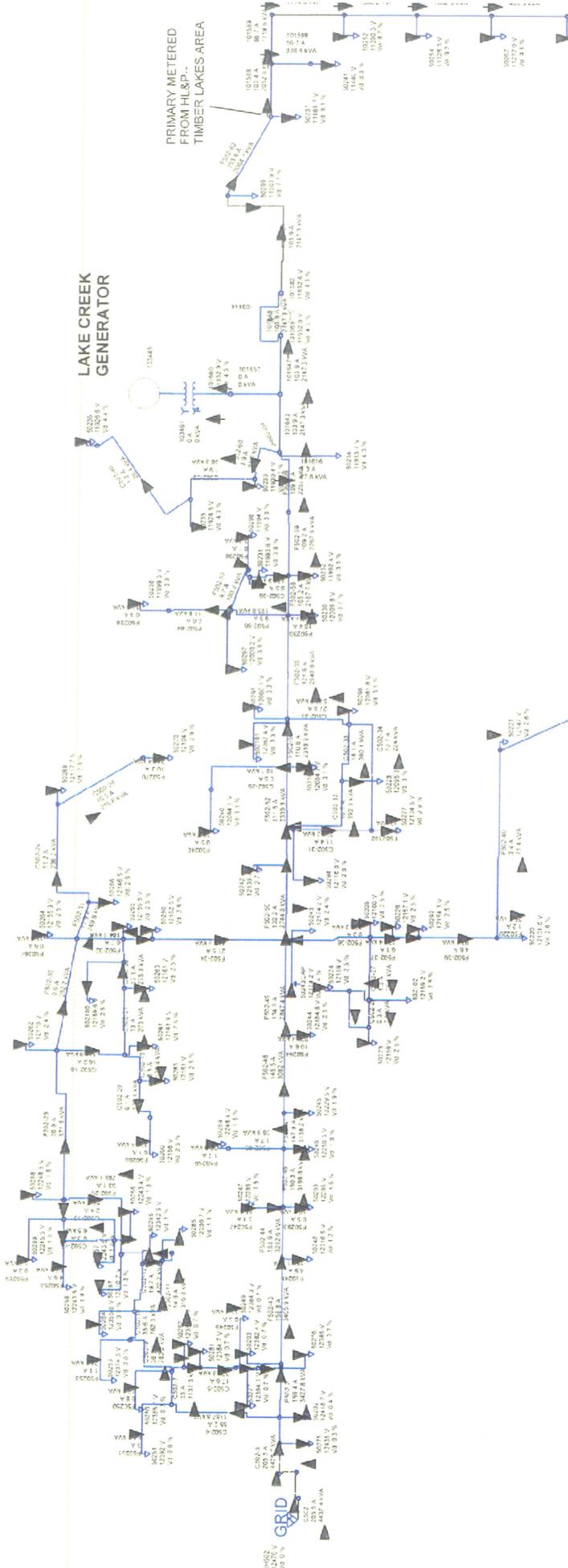
Normal configuration with 2011 peak loads at each substation

Midway Sub XF updated to 10 MVA at Z=8%.

All Generation is "on-line".







**JAILHOUSE 502 Circuit with Timber Lakes area added:**

2011 Timber Lakes Load estimated to be approximately 1800 kW.

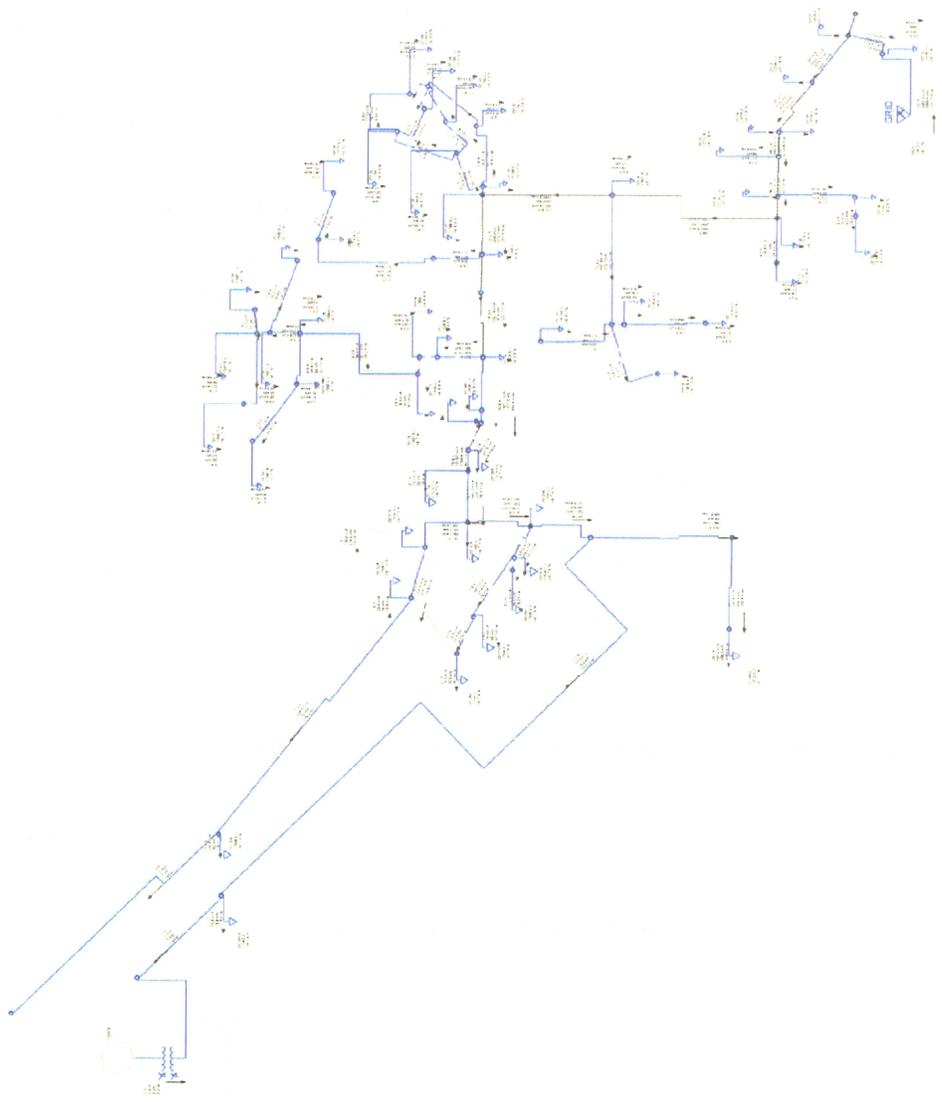
Generation "off".

Line regulators "off".

600 kVar Capacitor "on".

GRID voltage set at 12.47 kV





**DESCRIPTION:**

Single channel, mid band, AM  
radio.

200 mA, 500 Hz, 100 V, 100  
Hz, 100 V, 100 Hz, 100 V, 100 Hz.

100 V, 100 Hz, 100 V, 100 Hz, 100 V, 100 Hz.

100 V, 100 Hz, 100 V, 100 Hz, 100 V, 100 Hz.

100 V, 100 Hz, 100 V, 100 Hz, 100 V, 100 Hz.

# EXHIBIT B

## Appendix A

Project Description	Impact Fee Related	Date		Projected Cost (\$1,000)	
		Start	Finish	Total	Impact Fee Related
Midway Distribution Feeder	35%	2012	2012	\$ 243	\$ 85
College Substation Heber Tie Circuit	35%	2013	2013	\$ 690	\$ 242
HB 302-304 UG Tie Circuit	0%	2012	2012	\$ 78	\$ -
Midway 46kV Breakers South and North Lines	100%	2012	2013	\$ 140	\$ 140
Timberlakes Dist. System Improvements	0%	2012	2014	\$ 240	\$ -
Lower Snake Creek Plant Upgrade	0%	2012	2012	\$ 250	\$ -
College Substation Heber Tie Circuit	100%	2012	2013	\$ 10	\$ 10
Jailhouse Substation Bay-2 Transformer Addition (12MVA)	100%	2012	2013	\$ 550	\$ 550
AMI Implementation	0%	2012	2013	\$ 393	\$ -
Heber to Midway distribution reconductor	100%	2013	2014	\$ 285	\$ 285
Operation Shop/Garage Project	0%	2012	2012	\$ 400	\$ -
Lower Snake Creek Plant Upgrade	0%	2013	2015	\$ 400	\$ -
46kV South Line Repair	0%	2013	2015	\$ 300	\$ -
CL 401(Charleston) reconductor to Midway Sub	100%	2013	2016	\$ 600	\$ 600
Business Office addition/remodel/new build	0%	2013	2014	\$ 750	\$ -
Two additional Circuits out of Jailhouse going east	100%	2014	2015	\$ 560	\$ 560
Midway 46kV Transrupter	100%	2014	2014	\$ 70	\$ 70
12.5kV Distribution Feeder Upgrade to Charleston	100%	2014	2016	\$ 100	\$ 100
Jailhouse Bk-1 46kV Transrupter	100%	2015	2015	\$ 100	\$ 100
Heber Substation 2nd transformer	100%	2015	2015	\$ 500	\$ 500
2 Additional Circuit Heber Sub (West & South)	100%			\$ 300	\$ 300
Project Totals				\$ 6,959	\$ 3,542