

Integrated Resource Plan

Prepared for
Falls City Utilities
Falls City, Nebraska

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Section I. Introduction

This is the Integrated Resource Plan (IRP) for Falls City Utilities (Falls City). The IRP was developed to identify Falls City's resource requirements for the 10-year period beginning fiscal year 2007 through fiscal year 2016.

Purpose

Falls City is responsible for serving the City of Falls City with electricity, gas, water, and sanitary sewer and water services. Western Area Power Administration (WAPA) instituted a program called the Energy Planning and Management Program (EPAMP). EPAMP became effective on November 20, 1995. EPAMP includes a provision that requires its customers to prepare and submit an IRP to WAPA to maintain their current allocations of power and energy from WAPA. This IRP is also intended to meet WAPA's requirements.

As part of Falls City's ongoing obligation under EPAMP, it periodically prepares and updates its IRP. The purpose of this IRP is to develop two and five-year implementation plans to serve Falls City's power supply requirements at the lowest reasonable cost consistent with prudent financial and technical principles.

Discussion of Past IRP Studies

Falls City submitted an IRP to Western in 2002. The 2002 IRP recommended that Falls City monitor baseload projects for feasibility, extend the Omaha Public Power District (OPPD) contract until a new baseload purchase/participation could be made, and construct or purchase additional peaking capacity to replace generating units that will be retired in the future. Falls City implemented the IRP recommendations for a new baseload purchase/participation by participating in the OPPD Nebraska City Unit #2 (NC-2) Project. The 2002 IRP also recommended that Falls City continue to investigate partnerships with the Nebraska Energy

Office (NEO), implement low cost Demand Side Management (DSM) programs and consider purchases of renewable energy based on customer interest. As part of the initial step in the implementation of the recommendation, Falls City participates in the Nebraska Municipal Power Pool (NMPP)'s Electric Distribution Services (EDS) including infrared scanning and meter verification audits. Falls City submits progress reports on the IRP annually to Western.

Methodology

This IRP was prepared consistent with EPAMP's suggested methodology and is consistent with prior Falls City IRPs. The methodology used to prepare this IRP is summarized by the following list of tasks:

- Prepared Falls City's peak demand and energy requirements forecast.
- Compared forecasted peak demand and energy requirements to existing Falls City power supply resources to estimate future resource needs.
- Screened power supply resource options to identify economical resources to include in the integration analysis.
- Screened DSM measures to identify economical and technically feasible measures that could be included in the integration analysis.
- Integrated DSM measures with supply resources to develop IRP options.
- Considered environmental impacts and costs of each IRP option.
- Developed recommendation based on economic and non-economic considerations.
- Solicited public participation and incorporated comments in the IRP.

General Objectives

Falls City’s goal is to provide reliable service at low rates. Falls City also focuses on ensuring ample capacity for future growth and development. To achieve this stated goal, Falls City focused on the following objectives in developing the IRP:

- Maintain local control of the utilities system.
- Focus on continued growth and development.
- Maintain low rates.
- Maintain financial and rate stability.

Utility Profile

Falls City is a not-for-profit municipally owned electric utility located in southeastern Nebraska. In 2006, the electric customers were segmented in the following customer classes:

- Residential 2,213
- Commercial 547
- Industrial 21
- Total Electric Customers: 2,781

Falls City had a system peak of 15,080 kW in 2006. Falls City’s annual energy usage was 53,511 MWh in 2006, for an annual load factor of 40.51%.

Section II. Load Forecast

Introduction

Based on trending analysis and identification of known new loads, an annual peak growth rate of 0.0% - 0.7% appears reasonable. Since 1998, annual energy growth has averaged -0.35% per year. The forecast is presented in Table 1. Load projections were based on historical data through the year 2006, with system peak load growth projected at 0.0% - 0.7% per year thereafter. Energy calculations are based on projected demand, hours in the year, and a load factor of 46% - 48%.

**Table 1
Falls City Utilities
Historical and Projected
Peak Demand and Energy Requirements**

Year	Net System Peak MW	Percent Change	Net System Energy MWh	Percent Change	Load Factor %
1997	15.10		53,923		41%
1998	14.70	-2.65%	55,030	2.05%	43%
1999	15.40	4.76%	50,869	-7.56%	38%
2000	14.56	-5.45%	54,930	7.98%	43%
2001	14.06	-3.43%	54,519	-0.75%	44%
2002	13.92	-1.00%	53,931	-1.08%	44%
2003	14.44	3.74%	52,136	-3.33%	41%
2004	13.60	-5.82%	51,535	-1.15%	43%
2005	13.54	-0.44%	54,737	6.21%	46%
2006	15.08	11.37%	53,511	-2.24%	41%
2007	14.10	-6.50%	56,258	5.13%	46%
2008	14.20	0.71%	56,892	1.13%	46%
2009	14.20	0.00%	57,218	0.57%	46%
2010	14.30	0.70%	57,702	0.85%	46%
2011	14.30	0.00%	58,189	0.84%	46%
2012	14.30	0.00%	58,851	1.14%	47%
2013	14.40	0.70%	59,194	0.58%	47%
2014	14.40	0.00%	59,700	0.85%	47%
2015	14.50	0.69%	60,208	0.85%	47%
2016	14.50	0.00%	60,886	1.13%	48%

Section III. Supply Side Resource Analysis

Current Power Supply Arrangements

The Falls City system includes owned and purchased power supply resources, DSM programs and transmission system arrangements.

Existing Supply Side Resources

Falls City's system generates 20.4 MW capacity and energy, purchases 3 MW of capacity and energy from WAPA, and has ownership rights for 5.5 MW of baseload that is currently under construction. Table 2 summarizes Falls City's existing supply side resources.

**Table 2
Falls City Utilities
Existing Generating Resources - 2006**

Source	Capacity (MW)	Energy (MWh)
Generation	20.40	927
WAPA	3.05	14,751
Municipal Energy Agency of Nebraska (MEAN)	0.00	37,833
Omaha Public Power District (OPPD) (1)	0.00	0
Total	23.45	53,511

(1) MEAN provides scheduling services for the MAPP Service Schedule C, Falls City

Owned Generation. Falls City owns and operates two diesel engine generators and six dual fueled (diesel/natural gas) engine generators.

WAPA. WAPA delivers firm electric service to Falls City. This agreement terminates in 2024.

Municipal Energy Agency of Nebraska (MEAN). MEAN provides scheduling services for the MAPP Service Schedule C, non-firm energy from OPPD to Falls City. This contract expires April 30, 2010.

Omaha Public Power District (OPPD). Falls City has a contract with OPPD that provides MAPP Schedule C non-firm energy that may be interrupted up to a maximum of 750 hours per year. The existing contract expires April 30, 2010.

OPPD Nebraska City Unit #2 (NC-2). Falls City has a contract with OPPD for 0.83% of 663 MW (or 5.5 MW) of NC-2 which is projected to come online in May 2009. This contract has an initial term of 40 years with optional renewals that could extend to the life of the unit.

Transmission. Falls City is interconnected at 69 kV with OPPD at Falls City. OPPD provides transmission service for WAPA and OPPD purchases under firm and non-firm point-to-point transmission arrangements. MEAN serves as the scheduling agent for the OPPD transmission service.

Comparison of Loads and Resources

Forecasted peak demand and energy requirements were summarized and compared to existing capacity and energy resources. Table 3 (page 7) summarizes the Comparison of Peak Demand and Energy Requirements to Resources. Figure 1 (page 8) is the graphical presentation of the comparison of loads and resources.

Table 3
Comparison of Peak Demand and
Energy Requirements to Resources

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<u>Demand</u>										
Peak Demand Obligation (1) (2)	15.8	15.9	15.9	16.0	16.0	16.0	16.1	16.1	16.2	16.2
Capacity Resources (3)	23.4	23.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4
Surplus/(Deficit)	7.6	7.5	12.5	12.4	12.4	12.4	12.3	12.3	12.2	12.2

Notes:

- (1) Included forecast demand and 15% required reserves.
- (2) Peak Demand is the summer peak, as Falls City Utilities is a summer peaking system.
- (3) Included 1% reduction in WAPA in 2011.