



Current Comments

Energizing South Central Nebraska



SOUTH CENTRAL PUBLIC POWER DISTRICT, NELSON, NEBRASKA

OBJECTIVE: To make electricity available at the lowest cost consistent with sound economy and good management.



Manager's Column

By
Max VanSkiver

ENERGY / POWER WRAPUP

Over the past few months, I reviewed United States energy usage history and reviewed today's electricity production, transmission, and local distribution systems.

There are a few "takeaways" from the articles.

The evolution of energy usage in the United States has been largely driven by economics and consumer desire for convenience. If this continues, and I have to expect that it will, we can probably expect the increasing electrification of society to continue. While this would be "convenient" and probably economical for consumers, it could be expected to increase the complexity of the technologies we rely on to have electric service available.

One of the complexities is the federally driven development of Regional Transmission Organizations (RTOs). While many RTOs have helped reduce the average cost of electric energy within their footprint by managing all electric power production within their multi-state footprints, one could argue that they have also increased the cost of transmission and added complexity to the management of the electrical grid.

RTOs are probably still a net positive for most consumers from an economic and reliability point of view.



Even though the Southwest Power Pool (the RTO serving most of the "great plains") manages the minute-to-minute production of electricity within its multi-state footprint, our local generating entity, the Nebraska Public Power District (NPPD), is still very important. This is because NPPD is responsible for operating the fleet of electric generation plants necessary to meet electricity demands within its contractual footprint and maintaining adequate electric capacity reserves to help the regional electric grid "ride-through" electrical disturbances to the grid.

NPPD is also responsible for the ownership, maintenance, and operation of the transmission lines within its footprint necessary for electricity to reach the NPPD substations serving South Central.

South Central Public Power District is responsible for providing electric service to the customers it serves. South Central builds, operates and maintains the subtransmission system (really more of a super-distribution system), substations, distribution system, transformation points in the distribution system, and finally the metering points necessary to bill consumers properly.

And finally, **the cost of the energy actually used to generate electricity is relatively low, at least compared to owning and operating the means of producing, transmitting and distributing electricity, perhaps amounting to only 8 to 10% of the retail cost of electric service.**

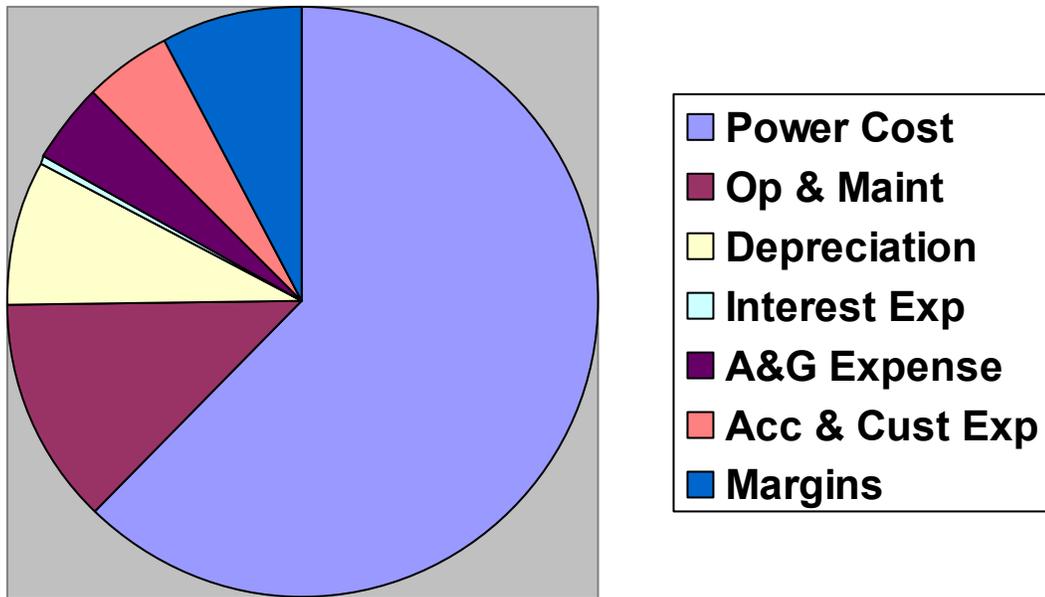
THE COST OF SERVICE

Fundamentally, the District has five kinds of costs: wholesale power costs, operating costs, ownership costs, financing costs, and capitalized construction costs. Wholesale power, operating, ownership, and financing costs are easily identifiable in the District's operating statement as you can see below.

The District's revenues averaged \$18,526,000 per year over the past three years. I am presenting average values to minimize the effects of weather. Retail rates were the same for all three years. The following are average annual operations experiences for calendar years 2014 through 2016 presented in a ledger format:

Power Costs	\$ 11,520,000	62.2%
System Operations and Maintenance Expenses	\$ 2,298,000	12.4%
Depreciation Expense	\$ 1,529,000	8.3%
Interest & Related Expense	\$ 31,000	0.2%
Admin & General Expenses	\$ 839,000	4.5%
Accounting & Customer Exp	\$ 857,000	4.7%
Operating Margins	<u>\$ 1,452,000</u>	<u>7.8%</u>
Total Cost/Revenues	\$18,526,000	100%

A graphical representation of average annual operation experiences for 2014, 15, and 16 would look like this:



Clearly, the largest single component is "purchased power", accounting for a little over 62% of every dollar collected. The monthly power bill is 69 pages long most months, of which the actual invoice is only 9 pages. We get 60 pages of metered billing-point detail, the data from which is combined to produce the values that appear on the invoice.

On an annualized basis, the costs associated with energy and the power plants that convert it to electricity represent roughly 84% of the total power bill while the other 16% recovers the costs associated with delivering power over the transmission system.

The relative ratios between power production and power delivery vary by season. Power production rates are higher for summer months than for non-summer months.

Variations in the ratio between demand (peak power required) and energy also affect monthly bills. Experiencing a high demand of short duration, but relatively low energy sales during a summer month, can cause our power costs to approach 9 cents/kWh. A couple of very cold days during an otherwise mild winter month can do the same thing, but the costs are in the 6.5 to 7.0 cents/kWh range.

Conversely, uniform weather over an entire month can result in below average energy costs. The average wholesale power cost over a year presently runs around 6 cents/kWh.

Electric system operations and maintenance presently makes up a little less than 13% of total annual costs. However, the three-year average was 12.4%. We inspect and retreat all poles just below ground-line on a periodic basis. We just began our 3rd cycle of inspection and retreatment. This work was initiated in 2015 with a complete inspection of the transmission system. We are presently working our way through the distribution system. It will take 5 to 6 years to go through the entire system.

Depreciation accounted for 8.3% of total expenses. Depreciation is the way the District recovers the costs related to installing new electric plant or replacing electric plant. More on that a little later.

Average interest expenses were very low over the past three years as the District was able to pay its debt off during 2015. This was discussed in *Current Comments* at that time.

The costs identified in the above three paragraphs are all related to owning, financing, operating and maintaining the District's electric system and required about 21% of the District's revenues.

Billing, accounting, various customer services, plus administrative and general expenses averaged 9.2% of revenues.

Operating margins averaged 7.8% of revenues. To the extent that they are not needed to help cover current construction costs, operating margins are used to build/maintain reserves. The District needs reserves to get through the year because expenses exceed income during many months and the District

may need to cover construction costs or storm repairs in excess of cash raised from current year revenues.

Construction costs do not directly show up on the Districts "current year" operating statements. There are some very good reasons for this.

Construction costs can vary considerably from year to year. As I have discussed many times over the past decade, the District undertook an aggressive program to upgrade the "backbone" of the electrical system starting about 2002. We invested around \$2,500,000 in new electrical plant in each of 2002, 2003, 2005, 2008, and 2009. Over \$4,000,000 of electric system improvements were made during 2006.

Since 2009, we have spent on average about \$1,600,000 per year on electric system improvements. This number will be going up as the pole inspection program identifies poles needing replacement. South Central is also planning the installation of a wireless meter-reading system in the near future, which could cost around \$3,000,000 to install.

If current year construction costs were recovered from current year electric rates, rates would jump up and down to follow the expense. No one wants electric rates that "yo-yo" up and down with the whims of the weather or to cover occasional extraordinary construction requirements.

We attempt to minimize the affects of weather on rates by averaging four years of energy usage data in the rate making process. The affects of electric plant improvements on rates are minimized by recovering the cost of newly constructed electric plant through depreciation over 33 years in most cases.

The actual cost to build electric plant must be paid during the year in which it is built, even if ratepayers get to pay for the improvement over 33 years or more. Current year construction costs are paid for by a combination of cash generated during the current year, cash reserves, and debt if necessary.

To the extent that debt is used to finance construction, interest on the debt is recovered with other expenses during the year in which it is paid. Principle payments on debt come from current year cash or cash reserves.



The People of South Central Public Power District

Profile of Employee – Brent Menke



Brent Menke began working for South Central Public Power District on May 3rd as the Assistant Office Manager. Brent had worked for South Central the summer of 2007 and helped with our DirecTV operations in 2008.

Jenny and her husband, Brent Turnquist, live in Lindsborg, Kansas. His sister, Beth, lives in Red Cloud, and his youngest sister, Kelsey is a student at UNK.

Brent likes to hunt and trap in his spare time and is also a football fan. He likes to work outdoors and helps on the family farm. Brent also owns some cattle that he raises on the family farm.

Brent grew up on a farm between Lawrence and Nelson and attended school in the Nelson and Lawrence-Nelson Public Schools. He graduated from high school in 2006. Brent attended the University of Nebraska Kearney (UNK), graduating with a degree in Business Administration with an emphasis in Accounting in 2010.

Brent recently purchased a home in Nelson and moved here from Hastings. He is spending time on home improvements and just finished painting the exterior.

After graduation, Brent worked as a teller in banking until taking a job as an accountant for Werner Construction in June of 2011. He worked for Werner until taking his current position at South Central.

Brent is getting settled into his new position in our Nelson office and enjoys working with our customers. When asked about his duties, he commented that learning about how complex electrical systems are is the favorite part of his job.

Brent's dad, Charlie, operates the family farm northwest of Nelson. His mom, Jan, works for the Commercial Bank in Nelson. Brent has three sisters.

We welcome Brent to South Central Public Power District and know he will be an integral part of our commitment to providing quality and affordable electric service to our customers.

Royce Schott



CURRENT COMMENTS

Newsletter of the
**SOUTH CENTRAL
PUBLIC POWER DISTRICT**
Nelson, Nebraska

NOTICE

The regular meeting of the board of directors of South Central Public Power District is held the third Tuesday of each month at 9 a.m. at the district's office in Nelson, Nebraska.

Current Comments Editor: Royce Schott

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