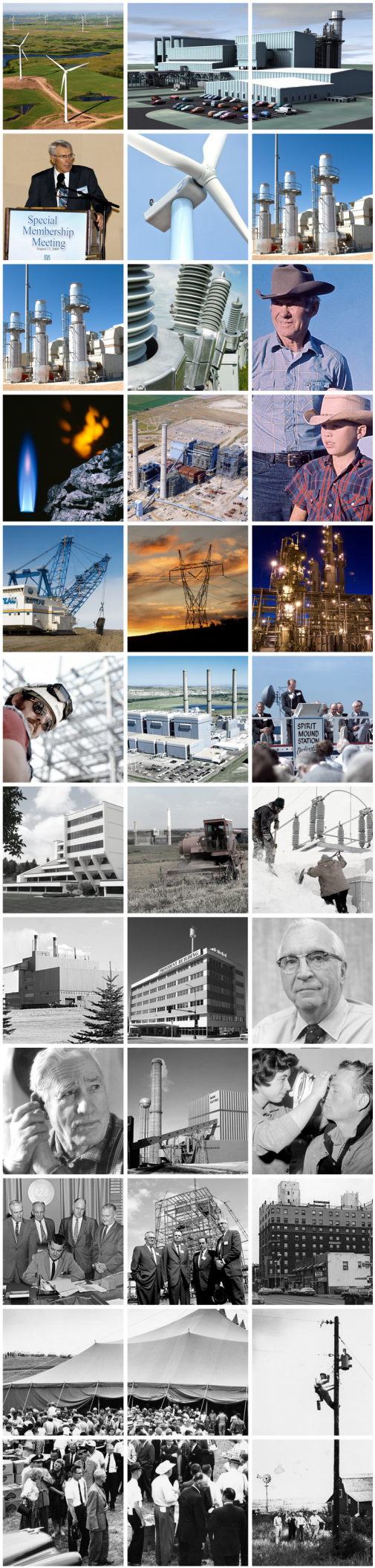

Generation *for* Generations

A VISION FOR GIANT POWER

The 50-year history of
Basin Electric Power Cooperative

BY STAN STELTER

BASIN ELECTRIC
POWER COOPERATIVE
A Touchstone Energy® Cooperative

Generation *for* Generations

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A VISION FOR GIANT POWER

The 50-year history of
Basin Electric Power Cooperative

By Stan Stelter

Edited by Kathleen Ellisen Risch
Designed by Ken Yetter

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Dedication

To those many men and women who have made Basin Electric Power Cooperative a tremendous success for the benefit of its member-owners.

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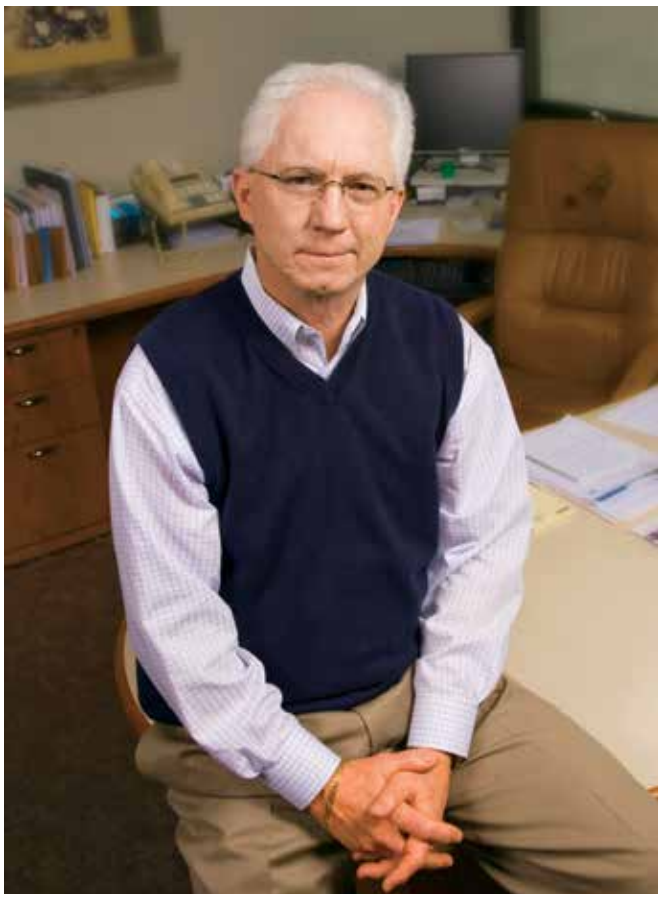


Ron Harper, Basin Electric Power Cooperative CEO and general manager, from April 23, 2000 through 2011.

When any business reaches 50 years in existence, there should be a tremendous celebration. I think this is particularly important for a cooperative because of the member involvement and support required to guide and move the organization forward. A cooperative's success reinforces the value of the business model.

Although 50 years is a very short time in the grand scheme of things, the changes that have taken place at Basin Electric Power Cooperative in those 50 years and moreover the lifetimes of those people who founded it are remarkable. Some of those lifetimes take us back to the turn of the last century.

Much of the rural areas of the Northern Great Plains only obtained central station electric service in the 1940s and 1950s. Those who lived without electricity for much of their lifetimes celebrated its arrival and were religiously devoted to advancing electric service to others because it improved their own lives so greatly.

I think that is why those of us from the center of the country have a different viewpoint on energy than those on the coasts who have had electricity for several additional generations. While many of us may not have directly experienced gathering buffalo chips, hauling coal or cutting wood as the only means to heat our homes, we've certainly heard the stories from our parents or grandparents. Let's not forget about the hauling of water, cutting ice from the lakes and rivers for the icebox, and doing chores and reading by kerosene lamp.

Our Vision Statement

Basin Electric will provide cost-effective wholesale energy along with products and services that support and unite rural America.

When the barns and homes were wired and finally electrified, the demand for electricity grew rapidly because electricity created much easier, cleaner and hopeful lives. Soon the electric cooperatives that were initially formed to build the rural electric systems were looking for more capacity and that's the very simple explanation of why Basin Electric exists.

Leaders from the rural areas of the Northern Plains who founded Basin Electric used Leland Olds' giant power concept by pooling their power requirements to build a large generating station to achieve economy of scale and to serve as many in the region as possible. The plan was to build a large generating station in the lignite fields of North Dakota near the Missouri River, using the federal transmission system and a postage stamp rate.

The founders required that the generating plants be built in a very environmentally friendly way. In fact, the Cooperative became the first utility in the nation to require that surface-mined land be returned to rolling countryside. That requirement was written into Basin Electric's first coal contract in 1962, long before rules and regulations on mined land reclamation were enacted.

Compared with burning coal or wood independently in homes, the technology used in modern power plants is a vast improvement. By the end of 2012, Basin Electric and its subsidiaries will have already invested more than $1.4 billion in various types of environmental controls on their facilities with annual expenses of $153 million.

You'll have to read the book to get the rest of the story. Even 200-plus pages only scratches the surface in telling the story about the people who helped build Basin Electric into what it is today.

I was recently listening to a news show and a gentleman said, "After all, we are the authors of tomorrow's story." Let us take that to heart in hopes that we and those who come after us stay innovative, committed to the environment, supportive of our greater community, and successful in supplying secure sources of energy.

On behalf of all the members who have benefited from the vision of this organization, I thank those that carried the water, made the tough decisions, and pushed forward when outcomes were uncertain. Because of them, we and generations to come have a cooperative that has withstood the test of time and is well positioned to meet the challenges of the next 50 years and beyond.

Let's continue to pay it forward,

Ron Harper

Basin Electric Power Cooperative,
CEO and general manager
June 15, 2011

Preface

Fifty years ago, a decisive struggle arose in the development of electric cooperatives in the upper Great Plains. It was a struggle that would decide who would participate in the federal transmission grid and who would provide the supplemental power; the rural population of the region depended on both. The decisive moment came with the formation of Basin Electric Power Cooperative and the award by the Rural Electrification Administration of a loan to Basin Electric for the Leland Olds Station.

At its core, these two decisions endorsed one concept: Leland Olds' giant power. Under this concept, many cooperatives would aggregate their electricity requirements to build the largest power generating unit possible, thereby achieving economies of scale and serving the region using the federal transmission system. This concept was the essence of the formation of Basin Electric.

Many believed that the Basin Electric plan was too ambitious: too much transmission and too much generation at too high of a cost. It took a good deal of persuasion to convince those involved that the large scope of this vision was worth the associated risks. According to James Grahl, Basin Electric's first employee and general manager, proponents of the plan were called "communists and do-gooders." However, the persistent vision that Basin Electric stood for—"a lot more than just a kilowatt-hour factory"—won the struggle in the end.

In the decades since, striving to fulfill that original vision has been a persistent theme as each generation of leaders has taken on new challenges and succeeded.

It is that story of the cooperative approach—in good times and in hard—that is portrayed in the pages that follow. I hope the stories told do justice to those who helped to make Basin Electric into one of the nation's top generation and transmission cooperatives.

In my interviews, many in the rural electric program have spoken about the value of cooperatives and expressed concern about their importance today. One of those was Leroy Schecher, an original incorporator of Basin Electric from South Dakota. Schecher thinks cooperatives are more important today than ever. With the rural population shrinking, residents have to look out for themselves by adhering to the cooperative philosophy. "I think that the cooperative movement, the cooperative way of doing business and people working together, is something that has to continue," he said. "When it's all said and done, it's going to be hard to get the best deal for the rural people unless they stick together."

People formed cooperatives to get things done they couldn't do individually. And that's the way it was with Basin Electric and those pioneers 50 years ago who followed through on a concept of giant power.

Many people helped in assembling that story.

I want to acknowledge CEO and General Manager Ron Harper and the Basin Electric staff members for their time and ideas.

Special credit and thanks goes to Kathi Risch and Ken Yetter. Kathi's editing, insightful questions and thoughtful suggestions have made this book better than it would have been otherwise. Every writer needs a good editor, and Kathi provided invaluable editorial guidance for my work. Ken, the book's designer, truly brought the history to life with his artistic touches and graphic arts skills.

Others who have given extra assistance throughout the gathering of material for this book, include: Terry Diekman, Daryl Hill, Jeff Nelson, Gary Williamson, Claire Olson, Bruce Carlson and Fletcher Poling.

And finally I wish to especially acknowledge my partner, Deborah Stelter, for her patience, reviews and suggestions, and Diane Zainhofsky, who generously allowed me time away from my regular job to finish this book over these many months.

Thanks to all!

Stan Stelter
Bismarck, ND
March 3, 2011

Chapter 1

‘The whole family will be happy with electricity...’

Few Americans today can remember—or imagine—life without electricity.

Today that experience usually comes by way of a severe storm or other unusual events. Consider the response of a young child, stuck in a rural home in the Northern Plains during a howling blizzard in the late 1990s … with roads blocked by heavy snows … ice-laden power lines snapping to the ground. No power, no heat and no amenities. Told that there would be no TV or video games, the child ruefully replied, “Grandpa, I don’t like it without ‘lectricity.’”

Indeed.

Life in rural America before electricity was tough and challenging, as this descriptive passage notes:

“Women in unelectrified *(sic)* homes faced every day drudgery and discomfort due to lack of running water, proper sanitary facilities, adequate light and refrigeration, power to run washer, iron, sweeper, churn, sewing machine, fan and radio. For the farmer it meant power to pump water for stock and for irrigation, to operate milking machines and separators, to grind and mix feed, cut ensilage and grind tools.”[1]

1. Alice Shanefelt Howell, “Rural Electrification 1929-1953.” Buffalo Tales, April 1990. http://www.bchs.us/BTales_199004.html

Electricity did come to urban America in the late 1800s, but most rural Americans were being left without that new technology.

Rural women set aside almost a whole day as “wash day” before their homes had electricity.

Private power companies advertised the new technology as being for the wealthy, large cities and big business. Left in the dark, some cities built their own municipal power stations and systems. According to Richard Rudolph and Scott Ridley's history of the struggles to control the industry, the power companies launched an attack on municipal power systems, calling them "un-American," "Bolshevik" and "an unholy alliance of radicals."[2]

In the countryside, private power also said there was no profit in stringing power lines miles between farms. Farmers, they argued, were too poor to pay for the power anyway. That, of course, became a self-fulfilling prophecy when the power companies subsequently charged rates that were sometimes four times as high as urban dwellers paid. The private power companies pointed to their own studies in the 1920s and 1930s showing that farmers who could afford power were being served.

In fact, European countries—with a higher population density—electrified their rural areas decades sooner than the United States. In some rural regions there, 60 percent had electricity. But in America—with its vast plains, scattered population and rugged topography—rural residents were almost without power. Just 3.5 percent of the Great Plains had electricity by the early 1900s.

By the 1930s, about 90 percent of city dwellers had electricity, compared with just 10 percent in rural areas, with a much lower percentage in the Northern Plains.

Studies show private power wrong

However, the seeds had been sown on the East Coast for the federal government to finally step in to help rural Americans. Thanks for this early effort goes largely to a man named Morris Cooke, an electrical engineer who in the early 1930s was an advisor to the Power Authority of New York.

Coincidentally, at this time, the assistant to the chairman and executive secretary of the Power Authority was a man named Leland Olds, who later became chairman of the Federal Power Commission (later called the Federal Energy Regulatory Commission or FERC). Olds became a nationally renowned champion of the "Giant Power" concept that served as basis for the formation of Basin Electric Power Cooperative.

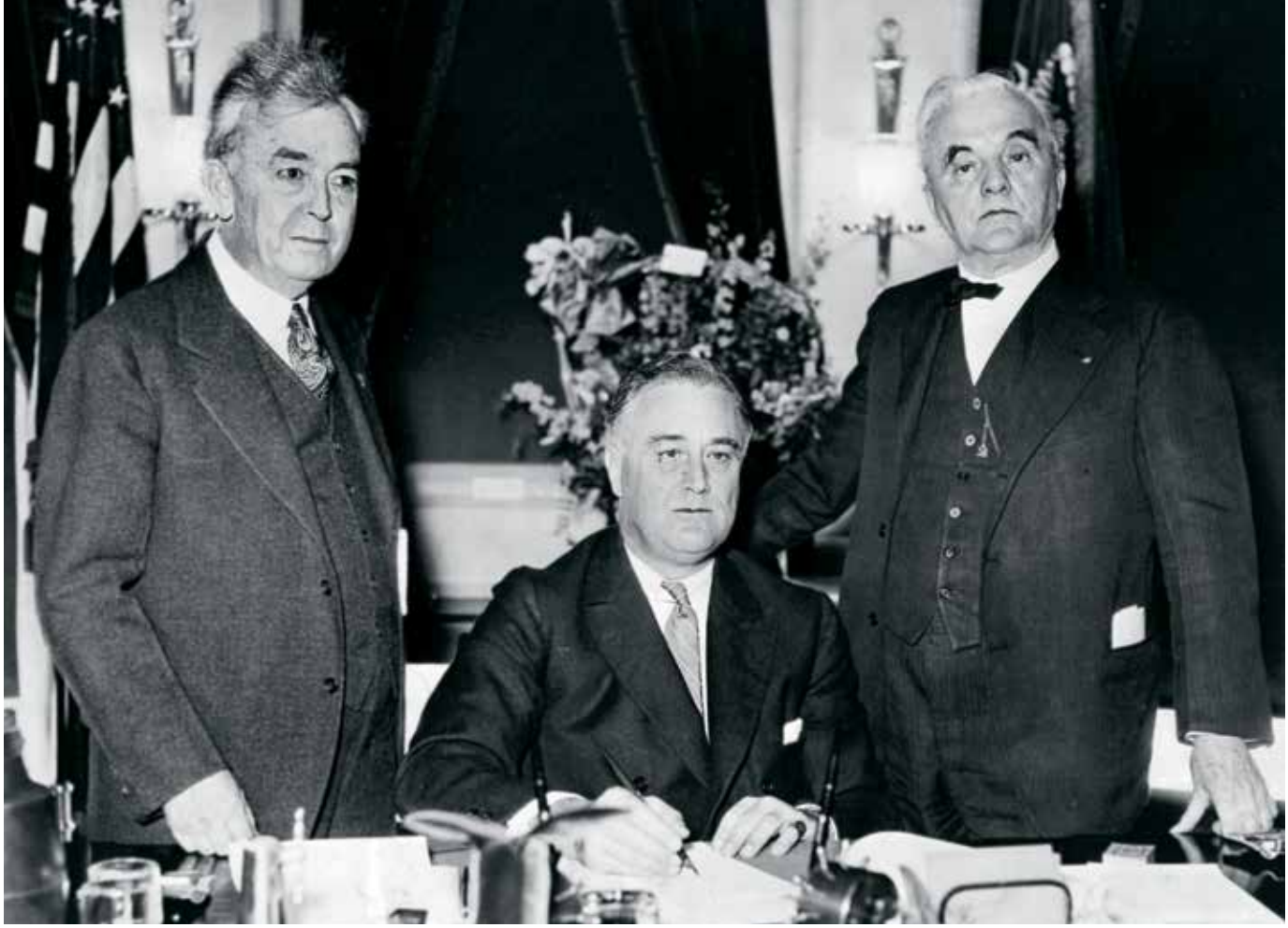
Morris Cooke was influential in the electric power field in America for 30 years. He battled the electric industry because of his belief in electric rate regulation to benefit consumers.

Some leaders at the time suggested powering rural America should be left to the states. However, Cooke had conducted his own studies, and in an 11-page report, set out the costs of running lines and installing electric meters against the estimated rate payments. His analysis: "The cost of the line with transformers and meters included for one to three customers will range from $500 to $800 per mile. To amortize this cost at 20 years at 4 percent involves a cost to each of the three customers on a mile of line of about $1 per month." His costs were $300 to $1,500 less than those turned out by private power companies. So, Cooke promoted the idea of federal government involvement in rural electrification, saying it would increase farm production and improve rural standard of living, all at a reasonable cost.

When Franklin Delano Roosevelt (FDR) became New York's governor in 1929, the Great Depression had already begun to level America economically, a collapse that would grip the nation for more than a decade. FDR had an activist agenda in those tough times for New York, a program that included finding power to meet the needs of a growing state. As part of that plan, he turned to Cooke to do a study on providing hydropower from the St. Lawrence River.

Three years later, FDR became president based on his "New Deal" for America. Those were programs aimed at reducing unemployment, assisting businesses and agriculture, regulating banking and the stock market,

2. Richard Rudolph and Scott Ridley, *Power Struggle: The Hundred-Year War Over Electricity* (New York: Harper & Row Publishers Inc., 1986), 51.



Franklin D. Roosevelt signs the Rural Electrification Act of 1936 with Rep. John Rankin (left) and Sen. William Norris (right).
Photo: Library of Congress

and providing security for the needy, elderly and disabled. Rural electrification became part of his strategy for national recovery.

FDR primarily wanted to create jobs and relieve unemployment, and Congress in April 1935 appropriated $100 million in relief funds for that purpose. The president also had become aware of the plight of rural residents in Georgia who were paying four times the electric rate paid by those in New York. Against that backdrop, FDR created by executive order the Rural Electrification Administration (REA) on May 11, 1935, to light up rural America and provide jobs as well.

Named to head the new REA was Cooke, whose studies and stance on consumers had influenced FDR before he became president. Cooke's thoughts on rural electrification were reflected in an article he wrote in 1935:

"In addition to paying for the energy he used, the farmer was expected to advance to the power company most or all of the costs of construction. Since utility company ideas as to what constituted sound rural lines have been rather fancy, such costs were prohibitive for most farmers."[3]

Many groups—and especially private power companies—vigorously fought the idea of the REA, opposing the federal government's involvement in developing and distributing electric power. They said the government was unfairly competing with private enterprise. Part of President Roosevelt's plan for rural electrification was using the model of the Tennessee Valley Authority (TVA), which had been set up two years earlier to control flooding, promote navigation, and to make and sell electricity, as well as to provide jobs. Locally, TVA had been controversial, too, with complaints that the dams and power lines would displace thousands of families, mostly poor farmers. On another level, some in Congress didn't think the government should interfere with the economy, believing TVA was

3. Morris L. Cooke, *Electrifying the countryside.* Survey Graphic, 1935. Survey Associates Inc.

a dangerous program that would bring the nation closer to socialism. Others thought farmers simply lacked the know-how needed to manage local electric companies.

Despite those objections, Congress in 1936 followed up FDR's executive order by passing the Rural Electrification Act, though the government didn't go into direct competition with private power. Instead, the Act allowed for low-cost, long-term loans to finance new power plants and power lines for rural areas.

Cooke first turned to the private power companies to bring electricity to rural areas. But when a committee of private power disdained the offer, Cooke decided he would take a chance in allowing rural electric cooperatives run by farmers and other public agencies to do the job.

Recognizing costs were still too high to electrify the countryside, REA found ways to reduce that from $941 per mile in 1936 to $720 by 1940.[4] They did this by using stronger conductor lines, requiring fewer transmission poles per mile, discontinuing the use of cross arms on poles for single-phase residential service lines, and standardizing poles and hardware so they could be mass produced.

At this time, most farmers and other rural residents still had little or no power. Those who did were using battery systems. The systems used a wind-powered propeller-type generator mounted on a windmill tower to produce enough electricity for a radio or a light or two. And then there were those who were lucky enough to be close to a distribution line to pay exorbitant rates for power from a nearby power company.

Eventually, the private power companies—who had turned down low-cost loans to serve farms—began to see the emergence of something new and, to them, foreboding—farmers organizing to form rural electric cooperatives.

Power companies realized REA was not going away, and so they used various methods to try to hinder formation of rural electric cooperatives. In some cases, they

Wind-powered generators with battery systems enabled rural families to have some lights and listen to their favorite radio shows before rural electric lines were strung in the Great Plains.
Ad provided by George Greenhough.

lowered rates to entice farmers not to organize. They built lines so an area might not qualify for an REA loan or so they could pick up the most profitable rural areas.

But the REA Act accelerated the formation of rural electric cooperatives across the country. REA organizers and county extension agents often helped arrange meetings, drawing farmers in to sign up for a fee of $5. Membership was based on the one-person, one-vote principle. Farmers and ranchers—who prided themselves on their independence—liked the idea that they had a voice in these rural electrics, allowing them to control their destinies. Often, their $5 membership fee didn't mean power immediately, only the promise of electricity—literally and figuratively—down the road.

Rural electric cooperatives sprung up across the country, becoming catalysts for dramatic changes in the life of rural America.

4. Cleo Cantlon, *Celebrating 60 years of the Past and Embracing the Future, A History of Verendrye Electric Cooperative Inc.,* (Verendrye Electric Cooperative, 1999), 2.

Farmers and their wives saw the advantages of electricity. As an unknown poet wrote just as the "miracle" electricity began to flow—slowly—into rural areas:

Electricity is a servant, make it work for you.
Then baking days won't be so hot, or wash days be so blue.
Your cows will be contented, with a milker fine and bright.
The kids will like the music, from the radio at night.
Your feed will be ground easily, your baby chicks kept warm.
The whole family will be happy, with electricity on the farm.

First rural electrics in each Dakota formed

Meanwhile, in South Dakota, for example, the first attempt to launch a rural electric cooperative came in 1935 when a group of farmers met in Burbank, SD, to organize the Fairview Rural Electric System.[5] But too few people signed up, and REA turned down their loan request. They couldn't meet the REA's requirement for a minimum of three customers per mile.

However, the Fairview organizers made another attempt, reorganizing as Clay-Union Electric Corporation in Vermillion, SD. They got enough signers, Clay-Union's loan was approved in May 1936, and the cooperative energized its first line in the fall of 1937 to become South Dakota's first rural electric cooperative.

That also was the year the first rural electric in North Dakota—Baker Rural Electric Cooperative—sent power to its customers.[6]

The REA proved to be one of the New Deal's most successful programs. Within a few years, hundreds of new municipal power utilities were up and running across the country, and within 20 years, virtually all of rural America had electricity, provided either by rural co-ops or big utilities spurred to action by municipal competition.

5. J. Gene Hexom, *The first 50 years… East River Electric Power Cooperative* (Madison, SD: The Leader Printing Company, 2000), 5.
6. Baker Electric and Tri-County Electric were consolidated in 1998 to form Northern Plains Electric Cooperative.—Ed.

Wrote one North Dakota county historian: "It is doubtful that any other single action had more to do with getting the country out of the Depression than REA. It took an army of electricians to wire farmsteads. Construction got a big boost building thousands of feeder lines. Tens of thousands of poles had to be cut and treated, transported to building sites, and placed in the ground…. New businesses were established and old businesses rejuvenated to meet the demand for appliances, motors and supplies. The only checks on this surge of demand was *(sic)* the war and the restriction on critical materials."[7]

By 1939, the REA had helped farmers and others establish 417 rural electric cooperatives, serving 288,000 homes. Still, by then, nine out of 10 homes in rural America still lacked electric service. Many who had signed up as rural electric members would wait 10 years for the miracle of electricity.

7. Snorri M. Thorfinnson, *Sargent County History* (Sargent County Commissioners, 1976), 123.

Looking east down First Street in downtown Mandan, ND, from the intersection of Second Avenue at flooding in 1943 before construction of the Garrison Dam (1947-1953).
Photo: State Historical Society of North Dakota

TVA successes lead to Missouri River plans

Meanwhile, the success of TVA was becoming more evident each year. No flooding and no loss of life or crops or homes or businesses. Instead, the Tennessee River had been tamed and was producing abundant electricity so the region could enjoy the benefits of modern appliances and a higher standard of living.

On the Missouri River flowing through the Northern Plains and south to the Mississippi River, the situation was different. Floods put hundreds of thousands of acres under water in the mid-1940s, covering rural and urban areas in central North Dakota to near St. Louis. The overflowing river inundated farmland and cities, tore out bridges and roads, ruined homes and businesses, and killed people. Damage was enormous. The Missouri would add its glut of water to the Mississippi, where destruction would continue on to the Gulf of Mexico.

Each spring those living near the Missouri River feared the uncertainty from the effects of snow melt, rains and ice jams that might again send the mighty river rolling across the countryside.

Particularly bad was the flood of 1943. Floodwaters covered some 2 million acres along the Missouri, causing an estimated $26 million in damage to cities and towns in the region.

That was the flood that finally spurred Congress to action. The U.S. Army Corps of Engineers was directed to develop a plan to control flooding in the Missouri River Basin. That led to a study by Col. Lewis Pick of the U.S. Army Corps of Engineers and a subsequent development plan by W. Glenn Sloan of the U.S. Bureau of Reclamation.

The two plans conflicted, so a compromise was reached and the Pick-Sloan Plan was sent to Congress in early 1944.

With the success of the TVA, President Roosevelt had taken an interest in a similar plan for the Missouri River. Though he threatened a veto, the compromise legislative

package—called the Flood Control Act of 1944—was passed and became law.

The Act approved the general comprehensive plan for the conservation, control, and use of water resources in the entire Missouri River Basin, authorizing the building of dams and levees for flood control, navigation, irrigation, supplemental water supply, hydroelectric power, recreation and fish and wildlife enhancement.

While the Fort Peck Dam in Montana was already completed, the passage of the Act authorized the eventual construction of the other five Missouri River main stem dams.

The Act ensured rural residents would be the prime beneficiaries of the hydropower, based on the concept called "preference power." The law directed that rural electric cooperatives, municipal systems and public power districts would have the first right to the electricity from these dams. The law read: "Preference in the sale of power and energy shall be given to public bodies and cooperatives."

In addition, the law prescribed the power was to be sold at the lowest possible rates to consumers consistent with sound business principles.

The Pick-Sloan Missouri River Basin

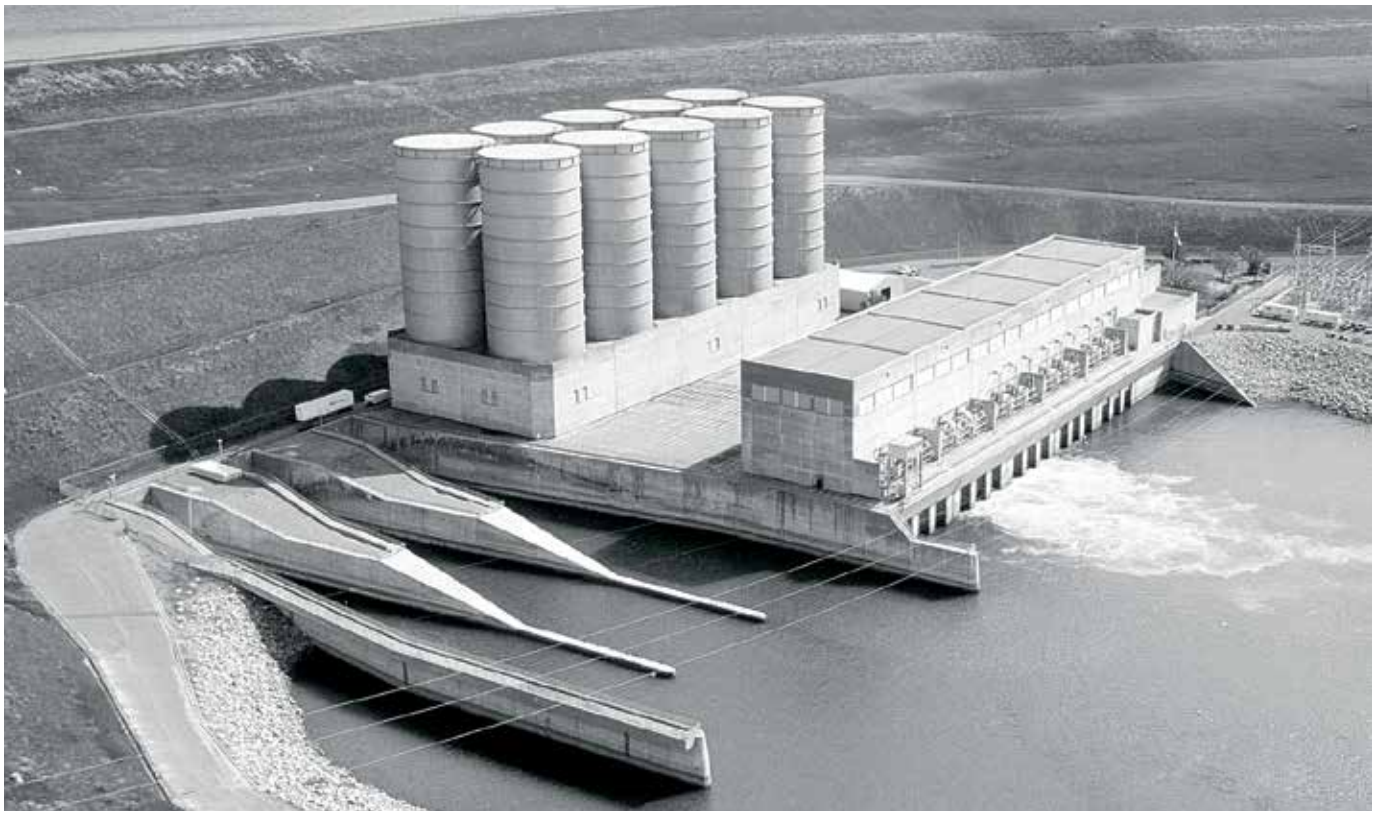
Approximate locations of the Pick-Sloan Eastern Division Missouri River Basin main-stem dams and power plants with about 2,272 MW of operating capacity independent of water constraints.

The federal Bureau of Reclamation—the forerunner to the Western Area Power Administration (Western)—was put in charge of marketing this power.

World War II slows rural electrification

The prospect of war had been brewing for some time in Europe. With America joining in World War II, rural

Construction of Garrison Dam in North Dakota took place from 1947-1954 at a cost of $300 million. The dam is 210 feet high and two-and-a-half miles long. Its embankment consists of 66.5 million yards of rolled earth fill.



The Garrison Dam and power plant on the Missouri River went into service in 1956. Garrison Dam was responsible for creation of Lake Sakakawea, the third largest man-made lake in the United States. Garrison Dam is the fifth largest dam in the country.

electrification slowed to a halt. The war resulted in resources being redirected to support the troops.

Materials used for power lines now went for the war effort, and that temporarily delayed the construction of the main-stem dams along the Missouri River.

With the end of World War II in 1945, men and women returned home from military service, looking to start families, build homes and resume their lives. A postwar boom began to change what had been a hard and frugal life in America.

Rural electrics resumed their electrification efforts with vigor. For example, at Verendrye Electric Cooperative in northern North Dakota, the co-op reported putting in 2,090 miles of lines connecting 2,563 new members in the three years after World War II.

It was the same across the country. By 1949, the number of rural electrics doubled, the number of consumers connected more than tripled, and miles of lines energized grew by more than five times, according to the National Rural Electric Cooperative Association.

The end of World War II also refocused plans for harnessing the Missouri River. The federal government launched construction of the remaining Pick-Sloan dams, a series of projects that took until the early 1960s to finish. But the first post-war work on that system began with a groundbreaking on Oct. 4, 1946, on the site of Garrison Dam some 60 miles north of Bismarck in central North Dakota.

With that ceremony, the effort was under way that would bring a new flow of renewable hydropower to the Missouri River Basin, signaling a new era for agriculture and an easier life for rural residents of the Northern Plains.

Chapter 2

A war of principles, then …

‘Giant Power’ becomes a reality

The hard work of rural electric cooperatives tied more customers to the co-ops’ electric lines in the years following World War II. By 1953, more than 90 percent of the nation’s rural farms had electric lines supplying them with power.

Life had become more energized for rural families nationwide. Membership in rural electric cooperatives exploded, along with the number of electric-powered machines and equipment that appeared in rural homes. Farm families bought refrigerators, electric ovens, heaters, feed grinders, welders, grain dryers, radios and, for many, lights finally for every room in their homes.

Rural electrics advertised electric technologies to their customers. “We promoted everything that would use a kilowatt,” said James Morley, a rural electric manager in North Dakota. Refrigerators led the “want list” for many farm families, and rural electrics sent staff to the closest large city to bring back carloads—and even truckloads—of small appliances.

With their electric loads growing almost exponentially, rural electrics began facing a new problem—lack of power to satisfy their customers’ growing needs. One cooperative noted that in 1941, its 232 members used an average of 89 kilowatt-hours (kWh) per month, but 10 years later, it had 3,789 members using an average of 206 kWh monthly.

It wouldn’t be until the mid-1950s that electric power generated by the dams in the upper Missouri River Basin began flowing to rural electric customers. In the meantime, electricity came from battery systems, wind chargers, private power companies, municipal electric power systems or, in rare cases, a small power plant.

Rural electrics in the upper Missouri River Basin had begun talking about a strategy to meet this problem.

Lawrence Hughes, Williams Electric Cooperative superintendent, checks transformer output on the Nasner farm, northwest of Williston, ND. This was the first farm to receive REA current from this cooperative, according to the Williston Herald of Sept. 4, 1947. *Williston State College Foundation, William E. (Bill) Shemorry Photograph Collection.*

However, as early as 1945, the managers of rural electric cooperatives in eastern North Dakota had proposed that cooperatives build their own giant generating plants. The cooperatives would own the plant, thereby cutting out the middleman that had been for many cooperatives the local private power company.

The concept of building giant coal-based power plants to achieve greater efficiency had been around for 20 years or more. In 1924, electric engineer and consumer activist Morris Cooke reported on a study undertaken in Pennsylvania ("Giant Power and Coal") that focused on larger power plants to more effectively use the coal deposits in Pennsylvania. For various reasons, the idea never gained traction there or elsewhere for decades.

But the idea filtered into the discussions by rural electrics in the Northern Plains in the late 1940s. Some felt they should accept new offers coming from the local private power companies. Others looked at pursuing REA loans themselves to build their own generating plant. And many of the rural electrics thought the answer lay in joining together on a plan for the future.

Baker Electric of Cando, ND, attempted to get its own loan to build a generating plant, but REA rejected the idea as being too small to be practical. In eastern South Dakota three plans were being put together. One group had the idea to build an eight-megawatt plant near Sioux Falls, that state's largest city. No transmission lines were planned outside the cooperative territory, however. Another group looked at using the soon-to-be-arriving hydropower along with a generating plant. And a third group of rural electrics focused on diesel generating units.

Bigger plans lead to forming bigger co-ops

Another plan was unfolding that involved 14 rural electrics from both North Dakota and South Dakota. In 1948, they formed Dakotas Electric to resolve the issue of future power supply. Dakotas moved ahead in getting an agreement with a local private power company—Montana Dakota Utilities Co.—and the Bureau of Reclamation to build a 75-megawatt generating plant along the Missouri River near Beulah. With REA's blessing, the plan reportedly called for Dakotas to sell the plant to MDU, which in turn would provide electricity to Dakotas at the same rate as the hydropower.[1]

Again, the idea of a giant generating plant built by cooperatives arose. James Coleman of NoDak Electric Cooperative proposed that Dakotas construct such a plant, tied into transmission lines built by the Bureau of Reclamation that would serve central and eastern North Dakota.

Out of this plan grew the idea to form one of the earliest generation and transmission (G&T) cooperatives in the region: Central Power Electric Cooperative in Minot, ND. Central Power's creation occurred in July 1949, and then another G&T, East River Electric Power Cooperative, was formed in South Dakota in October 1949.

Other G&Ts soon were formed in the region. Their role would be to provide wholesale power to the local rural electric that, in turn, supplied the rural members at the end of their lines. Power for these newly emerging G&Ts came from their own generating facilities or through contracts with private power companies. Eventually, some of that contracted power flowed from the Bureau of Reclamation as water began turning the turbines on dams being completed on the Missouri River.

Central Power members decided they would construct their own plant and had embarked on a political strategy to successfully secure an REA loan. As a result, groundbreaking was held for a 45-megawatt plant in May 1950 near Velva, a site chosen because of its large lignite deposits. Less than two years later, the first turbine turned at the William J. Neal Station, honoring the deputy REA administrator who was instrumental in getting the project moving.

Towering above the prairies of North Dakota, the Neal Station was the largest lignite-fired generating plant in the United States, reportedly built for $1 million less than the construction budget of $8.5 million. The *Minot Daily News* reported: "The mammoth plant …

1. Charles and Joyce Conrad, *50 Years: North Dakota Farmers Union,* 1976, 144

continued on page 13

NEAL STATION: *An early giant becomes a memory*

The William J. Neal Station was built to plug a power gap faced by North Dakota electric cooperatives and their consumers in the late 1940s and early 1950s.

Garrison Dam wasn't projected to produce power until 1954. And, by 1949, it was clear consumers didn't want to wait any longer to modernize and electrify their farms.

That led Central Electric Power Cooperative to construct William J. Neal Station—then the largest lignite power plant in the United States. It was completed in 1952.

Based in Minot, ND, Central Power became a member of Basin Electric in 1964 with the stipulation that it would eventually sell its generation to Basin Electric. Basin Electric purchased the Neal Station in 1973.

A cost study concluded it would make financial sense for Central Power to purchase power from the first unit of Basin Electric's Leland Olds Station to serve its eight member cooperatives. At 200 megawatts, the first unit had nearly five times the generating capacity of the Neal Station, and the 440-megawatt second unit of Leland Olds Station was under construction.

"The plant transfer is in keeping with Central's policy of increased reliance for its future electrical energy needs from Basin Electric's regional bulk power supply program," said Central Manager Gary Williamson when the Neal Station was transferred.[1]

The William J. Neal Station as it appeared in the early 1980s. The plant no longer exists. It was dismantled in 1999.

Basin Electric took over Central's remaining REA debt and with the additional power sales to Central would at least break even financially, according to the *Report* story. If a market at the right price could be found, Basin Electric said the plant might even make money.

Basin Electric expected to shut the plant down by late 1975 because of the excessive cost to meet air quality regulations. If feasible, the plant might be modified to burn fuel oil or natural gas to meet peak demands for the region.

Soon plans changed as Basin Electric's member loads grew. The Neal Station was modified, adding equipment to remove fly ash to meet state air quality standards and increasing its generating capacity by about 10 megawatts.

By 1980, Basin Electric had begun investigating innovative ways to improve efficiency of its generating plants such as cogeneration.

At the Neal Station, a cogeneration idea that became a reality involved using process steam to heat and operate an adjacent oil sunflower plant. In turn, the sunflower plant would supply the Neal Station with 240 tons of sunflower hulls as a fuel supplement.

Basin Electric spent about $5.8 million changing the Neal Station to supply steam and burn sunflower hulls. However, the sunflower

1. "Neal Plant Transfer Effected," *Report,* Basin Electric, July 1973, 8.

Larry Flatla, Charlie Christie, Merle Swartz and Marv Lilleman were members of the original startup team for the Neal Station. The plant was dedicated on June 4, 1952.

operation ran into financial difficulty. The company operating the sunflower plant defaulted on its federal loan, closed in February 1984, and laid employees off. As a result, Basin Electric took legal action to protect its investment in Neal Station modifications.

By this time, the first unit of the Antelope Valley Station in North Dakota had begun operation and, member loads were not growing as projected. Basin Electric found it had surplus power to market.

The Neal Station represented both the oldest generating facility owned by Basin Electric and the one with the highest production cost. In September 1984, the Basin Electric board of directors accepted management's recommendation to close the Neal Station by April 1985, saving about $2.7 million in annual operating costs. Thirty-six full-time employees were to be offered transfers to other facilities, with several to remain at the plant for maintenance to allow it to be operated within 90 days notice if needed.

But a notice never came, and the Neal Station never generated another kilowatt.

In 1987 Basin Electric put the 35-year-old facility on the auction block. It took 10 years but finally a salvage company bought the station for scrap. However, the company's check bounced, and so, in 1999, Basin Electric hired its own contractor to dismantle the plant.[2]

Though described as a "mere teakettle" compared with modern power plants, the Neal Station served as a valuable training ground for employees, who moved on to larger facilities. Among those learning there were some 40 former employees who gathered at the plant site in October 1999 to share memories, stories and pictures.

One of those was Larry Flatla, who was on the startup crew for the Neal Station in 1952. Because it was major plant at the time, it drew visitors from around the world, he said. One special visitor whom Flatla escorted was the renowned U.S. Sen. William "Wild Bill" Langer of North Dakota. "At one point I offered to light his cigar, and Langer said, 'I don't smoke 'em, I only chew 'em.' So I put my matches away," Flatla recalled.[3]

Jane Schonauer

Also at the 1999 reunion was Jane Schonauer, then the plant's supervisor, who saw the Neal Station as a place for people to grow and learn. "There were always new things being tried, such as the scrubber pilot project and burning sunflower hulls for fuel," she said in a 1999 *Basin Today* story. "It will be sad not to see it on the horizon east of Velva. It holds many memories and a special place in my heart."

By the end of 2000, the Neal Station was just a memory.

2. Daryl Hill, "Former Neal Station employees hold final farewell," *Basin Today*, November 1999, 13.

3. Hill, *Basin Today*, 12.

An early transmission construction photo from the files of East River Electric Power Cooperative.

will solve power shortages for eight member co-ops and play a leading role in continued energizing of farm homes in central North Dakota. Power production of 45,000 kilowatts will be more than a third of the initially planned output for Garrison Dam and it will be nearly a sixth of the output of Garrison at capacity."

South Dakotans try a transmission strategy

In South Dakota, the new G&T's power supply strategy took a different route. With East River and its members looking at building their own diesel-powered plant, the local private utility—Northern States Power Co.—suddenly dropped its wholesale power rate offer by a third. The private power company's rate offer was slightly better than that projected for East River, so cooperative members decided to accept it. East River decided to concentrate on building and owning much-needed transmission lines in the growing region. And so, in 1951, East River was awarded an REA loan to build the first 69-kilovolt transmission line in eastern South Dakota.

Hydropower from two of the main-stem dams on the Missouri—Fort Randall in South Dakota and Garrison in North Dakota—began surging down rural electric lines in 1954 and 1956, respectively. Under individual contracts with the federal Bureau of Reclamation, several of the rural electrics and municipal power systems committed to an amount of hydropower, or allocation, that they would buy at cost from the nearby dams. Additional hydropower for rural electrics in the upper Missouri Basin wouldn't be forthcoming for nearly another decade.

Preference clause comes under its first attack

And just as rural consumers in the region began benefiting from hydropower, the system came under siege by the new administration of President Dwight D. Eisenhower. New policies proffered by Assistant Interior Secretary Fred Aandahl threatened not only to reduce the amount of hydropower and raise the rates for rural electrics, they would eliminate the "preference clause" that guaranteed first rights to this federal power to rural electrics and publicly owned systems.

Rural electrics in this region and across the country rose in massive opposition to the policies. They succeeded in meeting with the president, who relented. This represented the first of many challenges to the preference power position held by rural electrics and municipal systems.

With federal hydropower now available, the G&Ts had begun to see lower cost power. And they started looking at their wholesale and retail rates as well as future growth. In South Dakota, a man named Leland Olds, a former Federal Power Commission chairman and a champion of consumer-owned power, was hired to study those matters. "One of Olds' exercises asked the distribution cooperative to project their future loads at four- to eight-times present loads," according to East River's history. "These numbers (were) mind-boggling to many. Olds' theory of long-range planning was new to the electric industry, since the current standard was simply adding on to the existing system to serve customers the next year or so."[2]

2. Hexom, *The first fifty years: East River Electric,* 17

Olds' vision and consumer-focused outlook would prove to have a deep and lasting effect on rural electrification in the upper Missouri Basin in the ensuing decades.

Growth in the region had continued at a phenomenal pace. Though there would be more hydropower available from Missouri River dams, such as Oahe and Big Bend, it became obvious that the supply would be outstripped by the demand in this region.

Consumer-owned utilities in the region came together in August 1958 at a meeting in Sioux Falls, SD, called by Aandahl. His message: the output of the federal hydropower system soon would not be enough to meet regional power needs. Rural systems need to find a source of power to supplement hydropower.

Where would this supplemental power come from?

Concerned about current and future power shortages, leaders for these regional consumer-owned systems took action. At a meeting in Minneapolis in 1958, they formed the Mid-West Electric Consumers Association, essentially a planning and lobbying group. Mid-West took the lead on regional and national power issues affecting consumer-owned systems in the eight states in the upper Missouri Basin region—North Dakota, South Dakota, Nebraska, Minnesota, Iowa, Montana, Wyoming and Colorado.

Under its first executive director, Kenneth Holum, a farmer from Groton, SD, and original incorporator of East River, Mid-West took on several tasks, including urging faster completion of the unfinished main-stem dams on the Missouri River and asking for a study of the rights of preference customers to the federal transmission system. And more importantly, Mid-West lobbied the Bureau of Reclamation to extend its power commitments to consumer-owned utilities.

However, consumer-owned utilities in the region still faced the perplexing problem of meeting future electricity needs. Should they buy power from private utilities and have no control over rates? Should they build small generating plants throughout the region? Or should they build fewer and more efficient "giant" plants? The latter option would mean joining together in even larger groups than had been done so far.

Relationships that led to Basin Electric started well before the specifics of "Giant Power" were hammered out. Pictured here are Art Jones; Alfred Pew, East River Electric Power Cooperative's first president; Leland Olds; and Virgil Hanlon, East River's first general manager, at the 1956 East River annual meeting.

A vision for Giant Power

It was on Oct. 26, 1959, in South Dakota that Olds, who had long promoted consumer rights and the "giant" power concept, made a public speech that led eventually to the creation of Basin Electric Power Cooperative.

Cooperative leaders nationwide had already heard about Olds' concepts at the 1957 annual meeting of the National Rural Electric Cooperative Association in Chicago. Two years later, this insightful man stood before the annual meeting of Mid-West in Rapid City, SD, telling the assembled consumer utility leaders about a plan that could provide them with low-cost electricity.

A consultant for South Dakota rural electric cooperatives, Olds spoke of a daring plan that called for forming a "super G&T" that could build and operate large, consumer-owned coal-based electric generating plants serving large areas. The power would be supplemental to the federal hydroelectric dams and transmitted via the federal transmission system. This he called a "hydro-thermal marriage."

Public systems and rural electrics didn't have to play "second fiddle" to private power companies in planning for their power needs, Olds said, at that meeting in 1959. His plan is outlined in the following excerpt from his speech:

continued on page 18

Leland Olds: *A visionary for giant power in America*

Leland Olds

The ideals and ideas of Leland Olds served as the model for rural electric leaders and for others across America in developing resources and public power.

The first steps toward development of Basin Electric came through the inspiration of Olds, a former chairman of the Federal Power Commission (FPC), whose thoughts and studies on consumers, resource development and low-cost public power elevated him to national prominence.

Olds was born in Rochester, NY, and, even as a young man, was considered a serious thinker. In 1908, he entered Amherst College in Massachusetts, where his parents had moved. His father had served on the college faculty and then became the school's president.

Deeply religious and idealistic, Olds was an outstanding student and went on to become a minister, teacher, researcher, journalist and served a few months in the Army. In these early years, he sought to use Christian principles to improve the problems created by industrialization.[1]

Olds married Maud Agnes Spear in the early 1920s, and the couple moved to Northbrook, IL. During this time, he focused on the labor movement, researching and writing for railroad workers and other unions. "Deceptively mild-mannered, he possessed a hard set of convictions about the wrongdoings of American capitalists, and a writing style midway between the muckraking of the Progressive Era and the work of later radical journalists like I. F. Stone," according to one biography.[2]

In that period, Olds wrote some 1,800 articles on topics on industrial capitalism and the effects of public policies. The articles were, as Olds himself acknowledged, "certainly radical," and their use in Communist publications—as well as in mainstream works—would be used against him later in what some viewed as a blatant political persecution.

1. Thomas K. McKraw, Biography Resource Center, "Leland Olds." http://galenet.galegroup.com/servlet/BioRC?vrsn=149&OP=contai….
2. Ibid.

In 1929, Olds decided to move on. He became an economic adviser to a group promoting the reform of public utility regulation in New York City. Olds joined with others in advising then-Gov. Franklin D. Roosevelt on legislation to regain public control over power resources and utilities.

That legislation led to the formation of the New York Power Authority, and Olds served as the top-ranking staff member throughout the 1930s. In 1939, Roosevelt, who had been elected president on the New Deal agenda, appointed Olds to the FPC.

"An expert in the field of electric power, Olds had splendid credentials as a champion of the 'public interest' and a confident sense of where that interest lay. Because of his experience as a journalist, he excelled in translating complex regulatory issues into everyday language," a biographer wrote.[3]

Olds served more than half of his 10-year FPC term as chairman. He led the commission into further regulation of the natural gas industry. The Natural Gas Act of 1938 was aimed primarily at regulating pipelines, but it eventually was used to determine wellhead prices.

During a Congressional investigation over price regulation, a study completed by Olds and another commissioner inferred the FPC had both the authority and duty to regulate wellhead prices. But others

3. Ibid.

on the commission held the opposite view, and they were joined by the industry and powerful legislators including a new senator from Texas, Lyndon B. Johnson. Often referred to as LBJ, Johnson would be elected vice president more than a decade later and become president with the assassination of John F. Kennedy in 1963.

During this period with Olds as FPC chairman, a bill to deregulate the natural gas industry came to the desk of then-President Harry S. Truman. On Olds' advice, Truman vetoed the bill.

In 1949 as Olds' term expired, Truman appointed him to his third five-year term. The oil and natural gas industry hadn't been happy with Olds, so the confirmation hearing in the Senate elicited intense opposition from that special interest.

The ruthless effort by Johnson to do the bidding of the oil and gas industry by discrediting Olds is detailed by author Robert Caro in his 2002 book, *The Years of Lyndon Johnson Master of the Senate* as well as by others.

Olds doesn't see the ambush coming. He thinks Johnson is a friend. After all, they both had worked to bring electricity to the rural areas.[4]

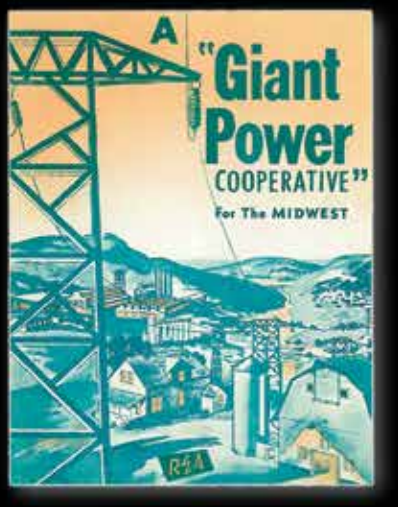
4. Kathi Risch, "Who was Leland Olds?" *Basin Today,* June 2003, 15-17.

Norman Clapp, Maud "Mary" Olds (Leland Olds' widow), Ken Holum and John Olds (Leland Olds' son) participate in the groundbreaking ceremony for the Leland Olds Station.

Johnson made the confirmation a political setup. That was underscored in a later book on Halliburton, a large energy service company: "With the help of his pals Sam Rayburn and Sen. Robert Kerr, Johnson, a freshman senator, got himself appointed chairman of the committee overseeing the FPC. From this position, he launched into an onslaught on Olds, smearing the former supporter of Herbert Hoover as a 'communist' who 'travels with those who proposed the Marxian answer.' LBJ, who only a few years earlier had used his political muscle to secure the vast public hydropower projects on the Little Colorado with the goal of providing cheap power to the citizens of the Hill Country, now accused Olds of 'plotting a course toward confiscation and public ownership.'"[5]

Charges of communism had been leveled before at Olds in previous confirmation hearings, but, with the Cold War moving into full swing, the mood across the country was

5. Jeffery St. Clair, "The Making of Halliburton," http://eeunterpunch.org/stclair07142005.html



This booklet for a Mid-West Electric Consumers meeting in Sioux Falls, SD, on Aug. 22, 1960, was dedicated to Leland Olds, who had died a few weeks before on Aug. 3. Part of the dedication read: "We have lost a great man. Fortunately when great men die they leave behind them ideas and inspiration, and in the case of Mr. Olds, many papers of measurable value.

"We have that inspiration. We have many guidelines which he provided us. Our task and challenge is to use them wisely.

"As one who unselfishly devoted his life to public service and low-cost power, it is obvious that this is what he would have us do."

The booklet included excerpts of Olds presentation from Midwest's October 1959 meeting (reprinted on page 18) as well as a preliminary organizational concept and load projections into 1975.

different. Communism was the enemy, and communists were being "found" in government offices seemingly everywhere.

Witnesses handpicked by Johnson were allowed to testify almost at will, while Olds' attempts to defend himself were constantly interrupted.

Even a written plea by President Truman didn't help. Based on the recommendations of Johnson's subcommittee and the full committee to reject Olds' re-nomination, the Senate voted 53-15 against Olds.

President Truman kept Olds in government service but, when Truman left office, Olds was without a job.

Olds set up a consulting business, Energy Research Associates. Consulting put him on a course leading to his pronouncement for rural electrics and public power systems to use the concept of "giant power," integrating federal hydropower with large, efficient steam-generating power plants. With that system, he advised, they could serve themselves with low-cost power.

His address on Oct. 26, 1959, at the annual meeting of the Mid-West Electric Consumers Association in Rapid City, SD, served as the inspiration to establish a giant power system. Tragically, Olds died Aug. 3, 1960, less than a year before

Maud "Mary" Olds helps Basin Electric President Art Jones unveil a bronze medallion with her late husband's likeness at the dedication of the power plant named for him on Sept. 24, 1966.

Basin Electric Power Cooperative was incorporated.

His death prompted many leaders to acknowledge his devotion to public service and his concern for low-cost public power.

An eloquent tribute came from then-Sen. John F. Kennedy on the campaign trail leading to his election as president. "In the death of Leland Olds, the nation has lost a dedicated and tireless public servant," wrote Kennedy. "Many of the great water and resource development projects were the result of negotiations and plans made by Mr. Olds. In a sense, these developments, such as the St. Lawrence Waterway and power projects, are a permanent memorial to him. He had the vision and the energy to establish the foundation for the giant power system which will soon be serving America. The nation will miss Leland Olds."

Olds' name lives on in the first electric generating plant built by Basin Electric in North Dakota. The Leland Olds Station continues to produce low-cost electricity for rural consumers.

"By this I do not mean that there should be no cooperation between non-profit and profit power systems in a region. But I do mean that you, speaking in a peculiar way for consumers, and not the power companies, should have a final word on how the most economical power supplies for the region's future are to be assured.

"In other words, you should put yourselves in a position as a group to deal from strength rather than, as a large number of separate entities, from weakness.

"And I am sure that if you approach your long-range regional power supply planning as a group, positively undertaking the responsibility on a cooperatively financed and managed basis, you can count on the federal power system in your region as a partner, as a servant. It will provide increasing supplies of hydroelectric power designed to supplement your big modern steam generating stations. It will provide the expanding super transmission system necessary to make the whole plan work.

"Remember that the secret of giant power doesn't lie simply in a maze of contractual arrangements under a dozen separate rate schedules making it possible to build individual generating stations that are larger and more efficient than a single system alone could build. The secret lies, rather, in establishing a single regional wholesale power supply system that can build and integrate such giant plants as a source of bulk power supply for all systems in the region.

"Only through separating the power supply function from the distribution function can the business of electric service be put on a sound modern basis.

"What I am talking about is a glorified G&T approach, a TVA (Tennessee Valley Authority)-type system jointly owned by the distributing municipal and cooperative systems, with the federal government as a hydro-transmission partner and G&T electric power cooperatives or their equivalent performing the sub-transmission function."[3]

This was Olds' vision for giant power.

Mid-West Electric Consumers Association takes the lead

Mid-West continued to lead a joint effort of G&T cooperatives in the Missouri River Basin. On Oct. 4, 1960, Holum and Mid-West hosted directors, managers and other representatives of a group of 12 G&Ts from Iowa, South Dakota, North Dakota, Minnesota and Montana in Minneapolis. G&Ts attending were: East River Electric Power Cooperative, Central Power Electric Cooperative, Rushmore G&T Electric Cooperative, Upper Missouri G&T Electric Cooperative, Corn Belt Power Cooperative, Central Iowa Power Cooperative, L&O Power Cooperative, Northwest Iowa Power Cooperative, Dakotas Electric, Rural Cooperative Power Association, Southwestern Federated Power Cooperative, and Northern Minnesota Power Association.

The purpose: establishing a group of directors responsible for setting policy regarding a giant power system. Holum told the group that the meeting would consider pooling of power requirements and talents to support such a system.

Virgil Hanlon, then East River's general manager, outlined a list of more than two dozen points on which decisions needed to be made for setting up a new organization—a so-called super G&T. After discussion, the session then turned to organizing a board, with the G&Ts naming the following representatives: Marvin Beyers, L&O; Jacob Nordberg, Northern Minnesota; Clarence Welander, Dakotas Electric; Norman H. Andrew, Central Iowa; Oliver G. Rose, Rushmore; Ben Jaspers, Corn Belt; H. J. Shoemaker, Northwest Iowa; O. N. Gravgaard, Rural Cooperative; Arthur Jones, East River; John Irving, Southwest; Henry Swenson, Upper Missouri; and Lawrence Erickson, Central Power.

In balloting, Jones was elected chairman with Swenson, vice chairman; Welander, secretary; and Irving, treasurer.

With that, these Missouri River Basin power supply systems had come together, agreeing to form an Olds-inspired organization, temporarily named Giant Power Cooperative. This was the direct predecessor of Basin Electric. Giant Power began working on a power supply plan for 1965-75 that included construction of

3. "*A Giant Power Cooperative for the Midwest*," Mid-West Electric Consumers Association, 1960.

a 200-megawatt coal-based generating plant with two potential sites: Garrison, ND, or Vermillion, SD.

Election of JFK helps the vision

John F. Kennedy

Nationally the election of President John F. Kennedy in 1960 ushered in a fresh look to America's policies home and abroad. In the West and this region, Kennedy had campaigned on a key point that held a special attraction for rural electrics and rural leaders. He vowed to reverse the policy of "no new starts" of the Republican administration of President Dwight D. Eisenhower.

Eisenhower's policy referred to resource development in general, but was translated to mean no new dams would be initiated on the nation's rivers. The conservative Eisenhower wanted to move those development costs to the private sector. In fact, there were "new starts" under Eisenhower, but the policy—real or not—was seen as a slap to those in the West and upper Midwest hoping for more power to flow from new hydroelectric dams and, thus, a better life in rural America.

Interestingly, Stewart Udall, secretary of the Interior for Kennedy and later for President Lyndon B. Johnson, explained years later that although Kennedy campaigned "mainly in the West on one slogan, that he was going to end the no new starts policy. Well, the no new starts meant no new dams. That wasn't exactly the Eisenhower administration's policy. They were for slowing it down."[4]

Still, in his campaign, Kennedy had shown his support for public power and rural electrics, and expressing his belief in the "giant power" concept.

His attitude toward rural electrics showed in his appointments in early 1961, setting the stage for significant development of rural electrics and the federal power system in the coming years. Kennedy appointed Holum, the Mid-West Electric Consumers Association executive director and East River director, as Assistant Secretary of Interior for Water and Power.

For his new REA administrator, Kennedy chose Norman Clapp, a former staff member for Sen. Robert M. LaFollette Jr. of Wisconsin, who fought for the REA and other New Deal programs. During Clapp's losing second bid for Congress, Kennedy, then a senator from Massachusetts, had come to Wisconsin to stump for Clapp. As president, Kennedy reportedly picked Clapp as the man to revive the REA and low-cost loan programs aimed at combating rural poverty.

Policies and players were coming together that would help to resolve the matter of future power supply for rural residents in the upper Missouri Basin.

A battle of philosophies

Before the final resolution on future power supply, a struggle ensued between two rival factions, growing and heating into a contentious battle among those who had philosophical differences.

On one side, a group of three North Dakota G&T cooperatives came together to form Lignite Power Cooperative, incorporating in North Dakota in March 1961. Joining in that filing were Minnkota Power Cooperative of Grand Forks, Central Power Electric Cooperative of Minot and Dakotas Electric of Bismarck.

They proposed to build a 200-megawatt generating plant along the Missouri River near Stanton, supplying the three G&Ts and their 34 member cooperatives. Excess power from the $44 million plant would be sold to two investor-owned utilities, Otter Tail Power and Northern States Power. Lignite's philosophy was to be the wholesale supplier to all, with no other cooperatives allowed as members. Other cooperatives would have no control of the power plant or its rates and service. Those who wanted electricity from the power plant needed to find transmission access up to the generation site and then pay the rate at the power plant, or what is called the "bus bar cost." The effect of this policy was to make

4. Stewart Udall, oral history interview, Dec. 16, 1969, Lyndon Baines Johnson Library and Museum, www.lbjlib.utexas.edu

those further from the plant pay more for the electricity, which would have the effect of limiting how far that power would reach.

But that approach appeared hostile to many rural electric and other consumer system leaders in the region. They wanted an organization, a super G&T that would build a generating plant to serve as a wholesale provider for a wider region—essentially the upper Missouri Basin—but only for rural electrics and other consumer-owned systems. Power would be transmitted over the federal hydroelectric transmission system. Customers would be members and thus have control over the plant and its rates.

They proposed using a "postage stamp" concept for establishing rates, in that the rates would be the same no matter how distant the customer—the member—would be from the plant. That would encourage customers from a much larger area, effectively spreading the benefits further.

This, in essence, was the approach of those who had been studying the issue for several years as the Corn States Power Pool, with co-op managers and others involved coming together in a loosely formed organization called the Power Cooperatives Association. William "Bill" Wisdom, whose Des Moines, IA, law firm had been hired as legal consultants, recalled that the studies culminated in a meeting in Minneapolis in April 1961. "As an outgrowth of that meeting, they finally directed me to do research on where the cooperative should be organized," he wrote later. Wisdom looked at the laws in North Dakota, South Dakota, Iowa and Minnesota "and because of some very favorable provisions on the establishment of (coal) reserves and because of the (electric) generation activity in North Dakota, I recommended that the cooperative be organized in North Dakota and it was."[5]

But what should be the name for this new super G&T? Several names were suggested, including Corn State Power Cooperative because of the study group. Wisdom wrote that wasn't chosen because "they don't raise much corn in two-thirds of South Dakota."

5. William Wisdom, transcript of Basin Electric history lecture to employees from Basin Electric archives, 12.

A bright idea for Basin Electric

Then "someone got the bright idea that since we're all interconnected, this Bureau of Reclamation transmission system is known as the Missouri Basin System," wrote Wisdom. "They didn't want to go so far as to say both Missouri and Basin, but they ended up taking Basin Electric Power Cooperative."[6]

So, on May 5, 1961, the incorporation papers for Basin Electric Power Cooperative were filed with the North Dakota Secretary of State.

The papers for the new regional generation and transmission cooperative listed 69 incorporators (see Appendix A), leaders of rural electric cooperatives operating in North Dakota, South Dakota, Minnesota, Montana and Iowa. It identified three classes of membership: Class A (cooperatives purchasing power directly) and B and C, which are cooperatives getting power from a Class A member and constructing and operating distribution lines to deliver that power.

It was a momentous day for supporters of the Basin Electric plan, and an historic one for America, though for another reason. On that day, Alan Shepard became America's first astronaut with a rocket flight of less than 20 minutes in outer space. His flight during the uncertain days of the Cold War served as a positive response to the Soviet Union's feat of putting the first human in space only weeks before.

Basin Electric born at Patterson Hotel

Back on earth, rural electric leaders had gathered at the historic Patterson Hotel in downtown Bismarck for the meeting to carry out the incorporation of Basin Electric. Wisdom, who later became Basin Electric's general counsel, wrote about those and other events surrounding Basin Electric's history. Because of the worldwide news leading up to America's historic space shot, those meeting at the Patterson decided they wanted to watch on television as well. "We broke up the meeting, there was one television set in the hotel … in the lobby," wrote Wisdom, "and we all went down into the lobby and watched (Alan Shepard) take his ride."[7]

6. Ibid, 13.
7. Ibid, 10.

Photo courtesy of North Dakota State Historical Society

The papers of incorporation of Basin Electric Power Cooperative were signed May 5, 1961, in the Patterson Hotel, located at Main Ave. and Fifth Street in downtown Bismarck, ND. This is a photo of the Patterson Hotel circa 1973.

There were differences in the space missions. Among them, Soviet cosmonaut Yuri Gagarin simply rode his vehicle in an orbit around the earth. He had no control. Shepard, however, was able to maneuver his Freedom 7 space capsule during the space flight before splashing down.

For rural electric leaders that day, having control of their energy future was the main reason they had come to Bismarck to form this new organization.

Leroy Schecher

One of those leaders was Leroy Schecher, who as assistant manager at Grand Electric Cooperative Inc. in Bison, SD, accompanied several Grand Electric directors to Bismarck. In the years leading up to this meeting, "we knew something had to be done," said Schecher, in a later interview. He had been with Grand Electric since 1952 and had been picked to become the new Grand Electric manager just prior to the incorporation event. "The dams on the river were not going to be enough. … We were going on the idea that there would not be enough power in the long run."

Cooperatives understood that if they were going to grow, they had to do something for themselves, Schecher said. He acknowledged the controversy and the differences between the plans proposed by those supporting Basin Electric versus those backing the Lignite Group. The issues were rates, where the power would go, and membership or the lack of it. And Schecher suggested there was another key issue: the Lignite plan involved the private power companies too much "and we didn't think that was a good idea because they had never been our friends. So if there was anything we needed to tip the scales, that would have been it."

Leon Birdsall

Leon Birdsall, a director at Verendrye Electric Cooperative at Velva, ND, in 1950-71, didn't like what was termed then as the "step-child status" of cooperatives in the process of buying power from—and relying on—investor-owned utilities. "The step-child syndrome … was a … major concern to the Verendrye directors, particularly to Leon Birdsall, who was a crusader for cooperative power, disjointed from any dependence on investor-owned utilities," according to Herb Meschke, a former Verendrye attorney and later North Dakota Supreme Court Justice.

With the incorporation of Basin Electric, the first board of directors was seated, a group that was headed by Art Jones, a South Dakota farmer who had a long history of rural electric and political leadership. An original incorporator of his home cooperative, Lake Region Electric Cooperative, Jones served as president of East River and in the South Dakota Legislature.

Jones later underscored the importance of that day for cooperatives. "We organized in 1961 on the basis of open membership so that all cooperatives that wished to join could share in the benefits of low-cost power," he wrote. "By joining together in this way and building large-scale generation, we could realize this low cost and

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Ken Holum: *Advocate for public power and co-op way*

Ken Holum

As a youngster, Ken Holum recalled attending annual meetings of a shipping association that his father used in marketing his livestock.

Holum enjoyed the store-bought ice cream and playing with his friends. It would be later in life that he finally understood the advantage for his family. Farmers, joining together cooperatively, could get better prices.

"Better marketing, not annual picnics, was the real motive behind this cooperative enterprise," he wrote in his autobiography in 1987.[1]

The lesson learned from his parents' farm operation in Brown County in northeastern South Dakota guided Holum through his life focused on public service. His passions led him from life on the family farm to a distinguished career in which he promoted public power and the concept of "giant power" for the upper Missouri Basin region and rural America.

A native of Groton, SD, Holum was the third generation to farm the land along the James River in Brown County homesteaded by his grandfather, Nils Holum. The cattle-and-grain operation would be farmed by his parents until his father's death at age 50.

Despite hard times caused by the Great Depression and Dust Bowl era, Holum's parents insisted that their son attend college. Holum earned his bachelor's degree from Augustana College in Sioux Falls in 1936 and decided to turn to teaching.

It was a brief but enjoyable career in education for Holum. Somewhat regretfully, he admitted later, he and his wife and their three small children came home to the family farm in 1941 where they would remain for 20 years.

While a farmer, Holum entered politics in 1948 running as a Democrat (in a solid Republican state) for the South Dakota House of Representatives. Winning handily, he was re-elected in 1950 but lost his second re-election bid in 1952.

While in the legislature, he worked on an issue that would influence the rest of his career. That effort was in passing legislation allowing public power districts. At the time, most farms in South Dakota had not been electrified, despite the creation of the REA in 1935. Long distances between scattered farmsteads worked against running power lines to rural consumers

Years before, Holum had become involved with his local rural electric, Northern Electric Cooperative, which had its birth in 1941 as the James River Valley Association. Holum became a director of Northern in 1949, which also is the year that Northern and 20 other distribution cooperatives formed East River Electric Power Cooperative. Holum was one of nine original incorporators.

In 1951, Holum received another call for public service, this time from the White House. He accepted and was appointed by President Harry S. Truman to a commission to study the Missouri River system and the programs under way for its development. Among the other members of this Missouri Basin Survey Commission were three U.S. senators and three members of the U.S. House of Representatives.

The commission began its work just after a major flooding year for downstream Missouri Basin states and just a year before a similar inundation for the upstream states. Its report focusing on the importance

1. Ken Holum, *A Farmer Takes a Stand*, (Sioux Falls, SD: Center for Western Studies, 1987), v.

Harlan Severson, executive assistant for East River; Art Jones, Basin Electric president; and Ken Holum, assistant secretary of Interior for Water and Power, watch while Secretary of the Interior Stewart Udall accepts the Basin Electric proposal for power pooling and a joint transmission system. Udall directed Holum to negotiate the terms with Basin Electric.

of hydropower and proposing an integrated transmission system was delivered to President Truman just prior to his leaving office.

"I am not sure how much our report influenced the development pattern in the valley," wrote Holum in his autobiography, "but I know my experience, and the friendships I made, influenced my career."[2]

In the coming years, Holum ran twice for the U.S. Senate but he lost both times. In the second election in 1956, his loss to Republican Francis Case was so close some suggested that he should request a recount and possible investigation. But Holum wrote that he didn't want to be a sore loser and, besides, he needed rest after a tough campaign.

Those political losses served as stepping stones for Holum, who continued his interest in promoting rural electrics and public power. He had become a believer in the concept of "giant power," as espoused by Leland Olds.

Still an active member of East River, Holum joined in the formation of the Mid-West Electric Consumers Association in 1958, serving as its first executive director and president. Holum and other rural electric leaders decided to form Mid-West because of the prediction by the government that federal hydropower couldn't meet regional power requirements past the mid-1960s. Mid-West, which would serve a key role in developing giant power, eventually gave birth to Basin Electric, according to James Grahl, in an interview by telephone in 1998.[3]

Holum had served as president of the Western States Water and Power Consumers Conference in Billings, MT, in September 1960. Though both presidential candidates, Vice President Richard M. Nixon and Sen. John F. Kennedy, had been invited, only Kennedy showed up.

It proved to be a momentous meeting for rural electric leaders as well as for Holum. Kennedy laid out a nine-point plan on resource development, including reversing the so-called "no new starts" policy of the administration of then-President Dwight D. Eisenhower. In earlier campaign appearances, Kennedy had supported the concept of giant power.

After the conference, Holum and others rode with Kennedy to the airport, agreeing to meet after

2. Ibid.

3 James Grahl, interview by Kathi Risch on the event of Ken Holum's death, February 1998.

the election to spell out plans for implementing the nine-point plan.

With Kennedy's election in November, Holum gained an important energy position in the new administration. He was named assistant secretary of the Interior for Water and Power in early 1961. During his eight-year career as assistant secretary, Holum played a key role in cooperative and public power development, including decisions and recommendations that resulted in the development of Basin Electric.

One of those was a comprehensive arrangement negotiated with the Bureau of Reclamation, which operated the federal transmission system in the region. This agreement enabled Basin Electric to build only 12 miles of transmission to deliver power out of the first unit of the Leland Olds Station and resulted in the Joint Transmission System (JTS). Each party in the JTS would pay for the cost of the system according to its use and make additions as required. Holum executed this agreement for the government.

Holum's role was cited by Grahl, in the 1998 interview. "Basin Electric couldn't have turned a shovel full of dirt without Ken Holum. He made it possible for us to get the loan (for the first unit of the Leland Olds Station), saying it was a workable project and that the transmission system could be worked out. He was invaluable."

As a result, he was a featured speaker at the groundbreaking for that first unit of Basin Electric's Leland Olds Station, near Stanton, ND, in 1963.

With Nixon coming to the White House in 1969, Holum left the government and formed a consulting firm. He went to work for Basin Electric and others involved in developing the Missouri Basin Power Project. He was hired to find resources for Laramie River Station, the 1,650-megawatt plant that would be built as part of the project. He negotiated the rail and initial coal contracts that led to determining the best site for the power plant.

"Finding coal in the political climate back then was harder than finding water," Holum said, in an interview in 1985. "The energy companies refused to sell us coal."[4]

Finding other major cooperatives facing similar problems, Holum thought that coal supply needs could be pooled just as electric cooperatives pooled power needs. He discussed the idea with Basin Electric and others, including Cajun Electric Cooperative in Louisiana. As a result, in 1974, a fuel supply cooperative called Western Fuels Association was formed by Basin Electric and Tri-State Generation and Transmission Association of Colorado. Shortly afterward, they were joined by Cajun Electric.

Holum became the first general manager of Western Fuels, which 10 years later had become nation's leading fuel supply source for consumer-owned utilities. In an article after his retirement from Western Fuels in early 1985, Holum pointed out that the fuel supply cooperative represented an extension of the "giant power" concept. "The application of the cooperative principles to fuel supply and delivery has strengthened and will continue to strengthen consumer-owned utilities here in the Missouri Basin and across the country as they deal with these challenges."[5]

Holum was a firm believer in cooperative action. "I grew up thinking that the right way to solve problems was by people working together," he said, in the 1985 *Report* interview. "And cooperatives are one of the best ways for people to do that."

For his beliefs and actions, Holum was inducted into the Cooperative Hall of Fame in 1993.

On Feb. 19, 1998, Holum, who served a major role in implementing giant power, died in Annapolis, MD, and is buried in the family plot in Groton, SD.[6]

4. "Holum winds up career of service to rural America," *Report,* Basin Electric Power Cooperative, February 1985, 2.

5. Ken Holum, "Giant Power 25 Years Later," *Rural Electrification,* July 1985, 30.

6. Groton Generation Station Unit 2 was dedicated in honor of Holum by request of the Basin Electric board in 2008.—Ed

all co-op members would benefit. Every co-op would pay the same rate, a 'postage-stamp' rate, for delivered power. We would strive to keep the cost of electricity as low as possible."

Shortly after incorporation, Basin Electric filed to build a lignite coal-based plant along the Missouri River near the Garrison Dam, initially at a cost of $114 million.

With the formal establishment of Basin Electric and Lignite, the controversy evolved to a central issue: Would Lignite or Basin Electric build the first generating plant in North Dakota coal country near the Garrison Dam? Who would be successful in getting an REA loan for that purpose? The decision on the loan would have to come from Clapp, the new REA administrator in the new Kennedy administration. Since it was unlikely both groups could get a federal loan for plants in the same region, the winner likely would become the future leader in power supply in rural areas of the Northern Plains.

Initially, the Lignite group gained the most public attention and public support. In fact, the concept that Basin Electric offered was not widely accepted among cooperatives in North Dakota.

Just after Lignite was formally incorporated in April 1961, a national news story reported that Andy Freeman of Minnkota Power Cooperative, the key proponent for Lignite, had produced a "favorable reaction" during a trip to Washington, D.C. Freeman said he came away from a meeting with Clapp encouraged and predicted the Lignite group would be back with a detailed plan in two months.

Then the Lignite supporters began lobbying North Dakota's split political leadership. Gov. William L. Guy and Sen. Quentin Burdick were Democrats while Sen. Milton R. Young and Reps. Don Short and Hjalmar Nygaard were Republicans.

In a resolution, Lignite directors asked the North Dakota political leadership to make "clear-cut statements in support" of their plan, the *Bismarck Tribune* reported in July 1961. Lignite also asked the North Dakota Economic Development Commission, North Dakota Association of Rural Electric Cooperatives and Greater North Dakota Association to write letters of support to the REA administrator in Lignite's behalf, the *Tribune* reported.

Just a day later, Lignite supporters read good news in the *Tribune.* According to a front-page story, Guy, the North Dakota Water Conservation Commission and the Greater North Association had come out in support of Lignite. Guy, then just beginning the first of his four terms as governor, said he felt the Lignite plan was the best for North Dakota. "I back the concept of the Lignite proposal hoping through further negotiations their plan can include more people in South Dakota and Minnesota," the governor told the *Tribune*.

An editorial in that newspaper added fuel for Lignite at just the right time. Headlined "Lignite Electric Plan Best," the editorial said there "is no room for argument" that the Lignite plan promised to best serve North Dakota's rural electric customers. It also is "the most economically efficient of the two plans," the editorial read.

The editorial took issue with the "postage-stamp" rates for power proposed under the Basin Electric plan, saying it would put those near the plant at a disadvantage "simply to help others farther away. Yet that would be the effect of a plan to sell electricity in eastern Iowa at the same rate as it is sold, in say, Mercer County where the power plant might be located. Customers close to the plant would be subsidizing those far away by paying part of the cost of transporting the power to those far distant."

Guy's endorsement of the Lignite plan "should carry weight with the powers that be. Meanwhile, common sense dictates strong and undivided support for the Lignite proposal," the editorial concluded.

North Dakota's three Republicans in Congress—Sen. Milton R. Young and Reps. Don L. Short and Hjalmar C. Nygaard—also came out in opposition to the Basin Electric plan. Burdick, the newly elected senator from North Dakota and then its only Democrat from the state, found himself on the spot. Like Guy and others, he attempted to get the two sides to compromise and construct a single plant.

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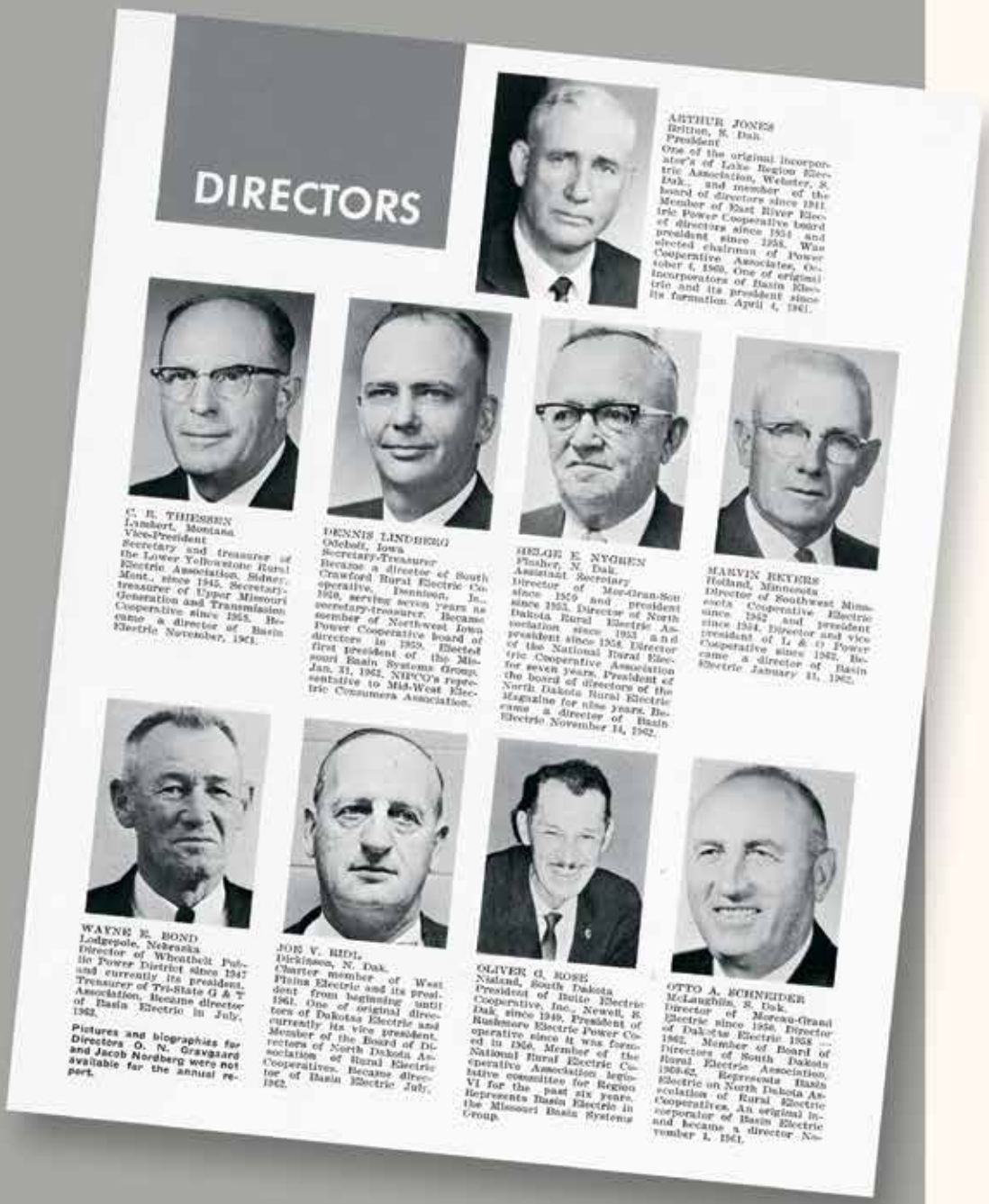
Basin Electric Power Cooperative's board of directors in 1963



DIRECTORS

ARTHUR JONES
Britton, S. Dak.
President
One of the original incorporators of Lake Region Electric Association, Webster, S. Dak., and member of the board of directors since 1941. Member of East River Electric Power Cooperative board of directors since 1954 and president since 1958. Was elected chairman of Power Cooperative Associates, October 4, 1960. One of original incorporators of Basin Electric and its president since its formation April 4, 1961.

C. B. THIESSEN
Lambert, Montana
Vice-President
Secretary and treasurer of the Lower Yellowstone Rural Electric Association, Sidney, Mont., since 1945. Secretary-treasurer of Upper Missouri Generation and Transmission Cooperative since 1955. Became a director of Basin Electric November, 1961.

DENNIS LINDBERG
Odebolt, Iowa
Secretary-Treasurer
Became a director of South Crawford Rural Electric Cooperative, Denmson, Iowa, in 1939, serving seven years as secretary-treasurer. Became member of Northwest Iowa Power Cooperative board of directors in 1959. Elected first president of the Missouri Basin Systems Group, Jan. 31, 1962. NIPCO's representative to Mid-West Electric Consumers Association.

HELGE E. NYGREN
Finley, N. Dak.
Assistant Secretary
Director of Mor-Gran-Sou since 1949 and president since 1953. Director of North Dakota Rural Electric Association since 1953 and president since 1958. Director of the National Rural Electric Cooperative Association for seven years. President of the board of directors of the North Dakota Rural Electric Magazine for nine years. Became a director of Basin Electric November 14, 1962.

MARVIN REYERS
Holland, Minnesota
Director of Southwest Minnesota Cooperative Electric since 1942 and president since 1944. Director and vice president of L & O Power Cooperative since 1952. Became a director of Basin Electric January 11, 1962.

WAYNE E. BOND
Lodgepole, Nebraska
Director of Wheatbelt Public Power District since 1947 and currently its president. Treasurer of Tri-State G & T Association. Became director of Basin Electric in July, 1962.

Pictures and biographies for Directors O. N. Gravgaard and Jacob Norgberg were not available for the annual report.

JOE V. BIDL
Dickinson, N. Dak.
Charter member of West Plains Electric and its president from beginning until 1961. One of original directors of Dakotas Electric and currently its vice president. Member of the Board of Directors of North Dakota Association of Rural Electric Cooperatives. Became director of Basin Electric July, 1962.

OLIVER G. ROSE
Nailand, South Dakota
President of Butte Electric Cooperative, Inc., Newell, S. Dak. since 1949. President of Bushmore Electric Power Cooperative since it was formed in 1958. Member of the National Rural Electric Cooperative Association legislative committee for Region VI for the past six years. Represents Basin Electric in the Missouri Basin Systems Group.

OTTO A. SCHNEIDER
McLaughlin, S. Dak.
Director of Moreau-Grand Electric since 1950. Director of Dakotas Electric 1958 — 1962. Member of Board of Directors of South Dakota Rural Electric Association, 1959-62. Represents Basin Electric on North Dakota Association of Rural Electric Cooperatives. An original incorporator of Basin Electric and became a director November 1, 1961.

The first formal representation of the Basin Electric Power Cooperative board of directors as published in the 1963 annual report. There was an earlier board organized (see page 18) for the "Giant Power Cooperative," which was the direct predecessor of Basin Electric.

In North Dakota, the Basin Electric plan wasn't playing well among cooperatives either. In fact, most were not in favor of the Basin Electric concept, and the issue proved divisive amongst some cooperatives. For instance, it drove a wedge—both political and legal—in the relationship of Central Power of Minot, and one of its member cooperatives, Verendrye.

During the period of debate, Central Power tended to support the Lignite plan, which was quite distressing to the Basin-backing Verendrye Electric, according to former longtime Verendrye attorney Mark Purdy. Chief among the Basin proponents on the Verendrye board were two very strong-willed, cooperative-minded directors, Birdsall and Lawrence Erickson.

In strategizing how to prevent Central Power from influencing the decision for Lignite, Purdy and Meschke, his fellow attorney, were instructed to file suit against Central Power as a roadblock. Part of the issue was that Verendrye objected to Central Power spending any funds in support of the Lignite plan.

The lawsuit was dropped, but Meschke later pointed out, its effect was to bring about a change in the stance by Central Power so it no longer backed the Lignite plan. "The Verendrye lawsuit against Central Power ended with a whimper," he said. "It never did have a chance in succeeding. But it succeeded in focusing attention on the meetings where the boards of Central Power and Minnkota were going around and meeting with power companies. And it focused attention on just how close that had been guided and maneuvered by those who wanted to remain as step-children in the electric industry of the investor-owned utilities."

With that shift at Central Power, in June 1961 a resolution passed at the G&T's annual meeting supporting the Basin Electric plan in its early stages.

Purdy said he believed strongly that it was through the efforts of cooperative backers like Birdsall and Erickson that helped to pave the way for Basin Electric's success.

A strong co-op family

Ralph Birdsall, a nephew to Leon Birdsall and former longtime board member for Verendrye, attests that his family had a strong cooperative background, including his uncle and his father, Don. "My whole family were strong co-op people," he said. "Let's put it this way. If you're driving down the road and ran out of gas in front of the Standard Station, you would walk to the co-op station to get gas. You did business at the co-op, period."

The issue of Lignite or Basin Electric wasn't easy, even causing an incident in the Birdsall family, according to Ralph Birdsall. Andrew Freeman, the Minnkota manager who championed the Lignite plan, had invented a head bolt heater for car engines (for which he later would be inducted in the North Dakota Entrepreneur Hall of Fame). Ralph, who was then in his early 20s and not really aware of the fierce political struggle, thought the invention was great and bought one. His uncle, Leon, visited and saw the Freeman invention. "He took one look at the head bolt heater and explained to me that we do not put Freeman head bolt heaters in any of our engines because of the politics of the Basin and Lignite groups. That's how seriously they took this, and they were strong, strong men in that way," according to Ralph Birdsall.

One of the most outspoken rural electric managers in North Dakota who helped lead the fight for Basin Electric was George Cornog of KEM Electric in Linton. Cornog and the KEM directors found themselves in an uncomfortable position during the drawn-out debate. KEM had become part of the Dakotas Electric Cooperative, which had helped to form Lignite. "But we at KEM Electric … were almost alone at one point in the Dakotas group … holding out against Dakotas Electric supporting the Lignite concept," he said. Because of that, KEM faced heavy lobbying pressures, and Cornog said he was threatened with being fired, though not from his board members who backed him and Basin Electric.

Cornog's efforts were recognized as Jones, the Basin Electric president, designated him as a spokesman at times for the new regional G&T. In an interview later,

George Cornog

Cornog said he believed in the Basin Electric plan because it focused on using North Dakota lignite to produce low-cost power and then transmitting the electricity to a greater number of people over a wider area through the use of the federal transmission system. He liked the idea that it finally fulfilled an oft-repeated idea that lignite could be an economic boon for North Dakota. "I saw the regional concept as a larger and a greater use of that lignite in the production of power," Cornog said, "and I also felt that the rural electrification program was not programmed to be developed for as few people as possible but for as many people as possible."

Holum trip advances Basin Electric plan

With no apparent resolution to this power battle, the debate became more bitter, with a whirlwind of meetings, news conferences, TV programs and other activity.

Four prerecorded TV programs were broadcast on seven North Dakota stations in the fall of 1961. Local newspapers reported the programs had this premise: to convince directors of North Dakota's rural electrics that to get an REA loan, a single, unified cooperative power plant proposal must be submitted.

Appearing on the taped programs were Clapp, Holum and Sen. Young and Sen. Burdick with Clyde Ellis, general manager of the National Rural Electric Cooperative Association, serving as moderator.

The program is "the best possible medicine for the eventual settlement of unresolved difficulties between the two power cooperatives, Lignite and Basin Electric," said a cooperative representative. "The combined message of these top officials is a straight-from-the-horse's mouth solution to those who feel there has to be unity between Lignite and Basin Electric but who haven't come up with the right answers."

At about the same time, Holum, the assistant secretary of the Interior, made an important trip to South Dakota. There he laid out a series of decisions, which then allowed for Clapp to grant approval to the request from Basin Electric.[8] Holum appeared at a meeting in August 1961, in Sioux Falls, in which he spelled out what the Bureau of Reclamation would do, including:

- Make surplus capacity in its transmission system available that allowed for power from a 200-megawatt steam generating plant;
- Set up long-term arrangements for a joint transmission system with preference customers who install steam generating plants;
- Agree to reserve power agreements with preference power customers assuring them of power during overhauls or emergencies; and
- Purchase excess power from steam plants at a reasonable rate to firm up the government's hydropower.

Three months later, Clapp outlined the following five conditions required for getting an REA loan to build a power plant in North Dakota:

- Building a generating plant with a 200-megawatt capacity;
- Acquiring a suitable plant site;
- Arranging for adequate water supplies;
- Contracting for maximum use of existing transmission and standby power; and
- Showing that there would be major benefits to rural electric members served.[9]

Suddenly, word about a compromise—of sorts—emerged.

Those supporting the Lignite proposal offered a plan to Basin Electric representatives, apparently trying to maintain control of the power plant project and prevent the formation of a "super G&T." At a meeting

8. *Power for the Plains: 25 Years of Service,* Bismarck, ND, Basin Electric Power Cooperative, 1987, 17.
9. Harlan Severson, *Stepping Forward, Boldly: The history of East River Electric Power Cooperative,* Madison, SD: Hunter Publishing Inc., 1975, 122-123.

in Minneapolis in December 1961, Lignite asserted that although its plans were further along than Basin Electric's for constructing a large power plant near Stanton in North Dakota, it was now ready to accept other cooperatives as members and offered other concessions to Basin Electric.

But Jones and other representatives of Basin Electric would have none of it.

Rejected, proponents of Lignite then fired off a letter to Jones and Clapp, acknowledging that it didn't meet REA's criteria and effectively withdrew its loan request. They urged REA to grant the loan to Basin Electric.

With this development, the *Fargo Forum* still editorialized heavily in favor of Lignite Electric, saying that plan appealed to North Dakotans for several reasons including that its three co-op members were headquartered in the state. Its operations would be planned and run by North Dakotans with the state getting the benefit of rates cheaper than customers outside North Dakota.

Governor Guy, the editorial said, had been criticized by Lignite supporters who contended he favored the Basin Electric plan and thus wasn't working for the state's best interests.

The *Forum* said it preferred to see the Lignite plan but, rather than no REA money, it hoped to see a compromise with Basin Electric that would make the power plant in North Dakota a reality. Guy, who had joined with other leaders in promoting a single-proposal effort, now recommended in early 1962 to REA that Lignite and Basin Electric each receive $20 million to build separate 100-megawatt plants alongside each other in central North Dakota. Lignite should then contract to sell power to Basin Electric until Basin Electric is able to build a second plant,according to this plan.

Lignite liked it, but not Basin Electric.

Speaking for Basin Electric, Cornog said building smaller plants was not cost effective. Granting a loan to Lignite simply to sell power to Basin Electric just wasn't justifiable, Cornog said.

Helge Nygren: A key figure in getting support

Meanwhile, supporters of the Basin Electric plan had continued making the rounds of rural electric cooperative and political leaders.

Helge Nygren

Helge Nygren, chairman of the board of the North Dakota Association of Rural Electric Cooperatives, did much to convince co-op leaders and managers in the state about the salient points of the Basin Electric plan. "He had a great deal to do with persuading most of the cooperatives to support this regional approach with open membership that wanted to join, which wasn't favored by the cooperatives of North Dakota," said James Grahl, the man who was to become Basin Electric's first general manager, in an interview in early 1985.

Nygren also joined with Jones, Basin Electric's president, and Virgil Hanlon, general manager of East River, in carrying Basin Electric's message to Guy and other leaders.

Guy said he understood the different approach taken by the two groups, with Lignite's plan as limited, focusing mostly on eastern North Dakota and western Minnesota. "They believed that North Dakota would gain the most if it forced people who wanted to buy electricity to build transmission right up to the power plant and pay the price (bus bar) at the power plant," Guy said, in a 2006 interview.[10]

The plan by the Basin Electric group was broader and more inclusive, stretching across more of the area served by the federal hydroelectric system, Guy said. They also advocated a postage-stamp wholesale power rate, meaning all members would get the same rate throughout the system.

10. William L. Guy, interviewed by Andrea Blowers, Jan. 5, 2006, Basin Electric archives.

Guy said he felt this plan not only would better boost the area's economy but also work to draw together those in the service area, increasing their political strength. He threw his support for the Basin Electric plan as not only best for North Dakota but the entire Missouri Basin.

But there was another twist in this power tale.

In February 1962, a group of 14 private power companies announced a plan they claimed would satisfy the power needs of rural electrics in the Missouri Basin through 1970. The plan, said Rep. Ben Reifel of South Dakota, should be "studied carefully," because it apparently required no federal investment and would return a significant amount to the government in power sales. If it is not feasible, Reifel said, then Basin's loan application should receive every consideration.

But cooperative leaders viewed the proposal with mistrust, saying it was just a last-minute move to block the REA loan to Basin Electric. Jones said the proposal would mean that the rural electrics "would forever lose their bargaining power … because through the power company proposal they would stop construction of a large steam plant using lignite coal and tie up the Bureau's transmission system for 20 years," according to Severson's history of East River.

Jones, in fact, scored a public relations coup, particularly in North Dakota, courtesy of a well-publicized comment by Albert Hartl, president of Fergus Falls-based Otter Tail Power Co., one of the 14 private power companies. Hartl said there was enough power available so there was no need to build a power plant in the Missouri Basin, including North Dakota, the story reported.

Because of that, Jones urged cooperatives and others at gatherings around the state and elsewhere to support the concept establishing the joint transmission system and sale of power from a proposed Basin Electric plant.

Three months later, Secretary of Interior Stewart Udall rejected the power company's proposal, saying Basin Electric's plan would bring in more net revenue to the federal government. The power company plan committed the government to exchanging its excess hydropower with a private utility group, which Udall said was unacceptable.

Art Jones, Basin Electric president; Richard Woods, assistant REA administrator; William Morris, REA planning engineer for the North Central Area; and William Rushlow, REA engineer, look on as Norman Clapp, REA administrator, signs the $36.6 million loan for Leland Olds Station Unit 1 on May 10, 1962.

Finally, on May 10, 1962, Basin Electric won the marathon debate over the power plant, receiving the first loan of $36.6 million from REA for a large power plant in North Dakota.

Struggles and challenges would be there in the future for Basin Electric and its members as the new organization evolved into a true super G&T.

Jones, the first Basin Electric president, provided the inspirational leadership necessary for this early test for the Cooperative. The farmer from Britton, SD, had spent countless hours addressing scores of meetings throughout the region. Now, with the loan approved, Jones observed: "With proper use of lignite coal resources, North Dakota will become the electric hub of the nation."

His prediction would prove visionary for the state and for the Missouri Basin's new "Giant Power."

Chapter 3

From a card table to top U.S. power plant

A 'bunch of farmers' grow a super G&T

For months, Art Jones, the farmer from Britton, SD, had not only served as the first president of Basin Electric. He also acted as its lone employee.

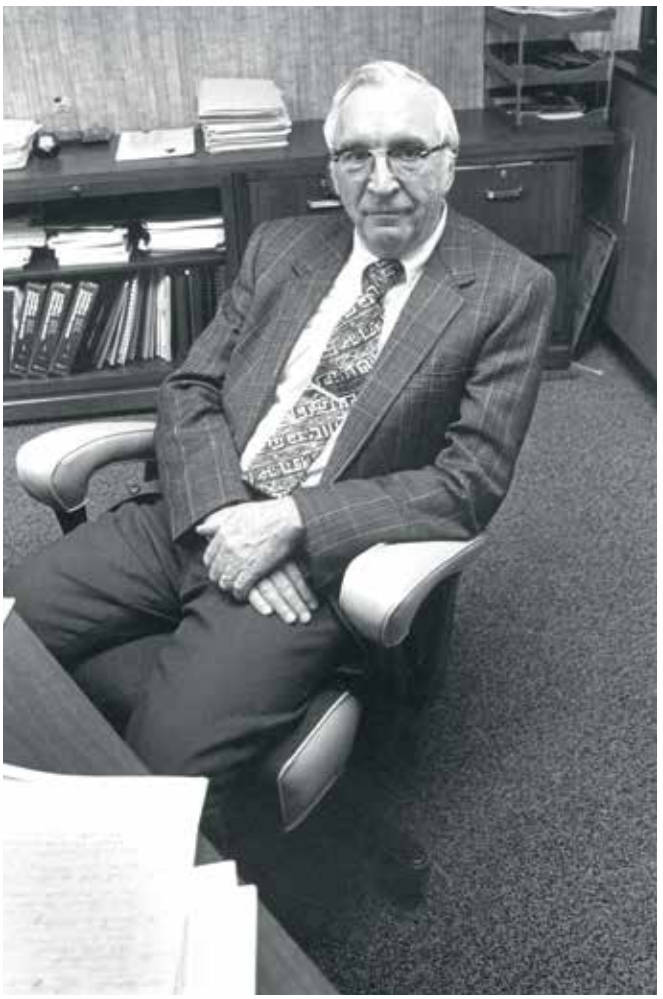
Jones had been articulate, ardent and hard working in the effort to form Basin Electric and obtain a federal loan to build a giant power plant in the coalfields along the Missouri River in central North Dakota.

With that accomplished, Jones and the board of directors needed to find a manager and staff to lead the regional power cooperative through its formative years. Though it had a $36.6 million loan from the REA, Basin Electric still had no power contracts, no fuel contract, no water supply, no plant site and no staff.

In late 1961, Basin Electric directors had been at a meeting of the Mid-West Electric Consumers Association in Sioux Falls, SD. There they had run into an assistant to Alex Radin, head of the American Public Power Association (APPA) in Washington, D.C.

His name was James L. Grahl.

The impression left by Grahl on Basin Electric leaders was lasting. Just after returning home from South Dakota, Grahl received a telegram from Board President Jones, offering him a job. Though Grahl demurred, Jones followed up with another wire, this time offering Grahl the job as Basin Electric's general manager.



Basin Electric's first general manager, James L. Grahl, served the Cooperative from June 1962 until March 1985.

Grahl had no experience in managing a utility and was not an electrical engineer. He believed that Jones and the board members thought he knew more about the power business than he actually did because of his speeches based on the writings of Leland Olds, Radin and others.

However, Grahl agreed to talk, traveling to Bismarck, where the Cooperative's headquarters were located in a downtown office. On his way, Grahl stopped in Sioux Falls on APPA business with East River. While there, Jones took him aside and asked what salary he needed to work for Basin Electric.

But Grahl said he liked his job at APPA and wasn't sure yet he wanted to uproot his family. Several weeks later, he changed his mind. Grahl later said he was impressed with the character of that first board of directors, including Jones, Dennis Lindberg, Marvin Beyers and others. He told his wife, Eleanor, he didn't know there were people left like that any more.

Grahl said he also liked what board members told him about mining and the environment. They told him they intended to reclaim land after it was mined for the lignite coal needed for generating electricity. Grahl had accompanied Jones on a trip to Stanton, ND, along the Missouri where he predicted the first power plant would be located. Driving back to Bismarck, Jones pointed to the spoil banks left by previous mining and said, "the mining boys out there are terrible about this … we'll have to do something to rehabilitate mined land."

The point that clinched his decision: the board already had planned to name the first power plant for Leland Olds, who had died in 1960. Grahl especially appreciated that decision, honoring a man he greatly respected and admired for many years.

Hanlon: a 'principal architect' of Basin Electric

Without a manager, Basin Electric and the board relied on its members in a variety of ways. Through a committee of member-system managers, Basin Electric received overall advice and support, a valuable resource for the fledgling business. Virgil Hanlon, who had been general manager at East River since its inception in late 1949, headed this management advisory committee. Hanlon had been a strident supporter of Basin Electric and its approach to regional power. Many felt his role was that of a "principal architect" of Basin Electric.

Virgil Hanlon

Grahl said he knew Hanlon had an emotional attachment to Basin Electric and "had every right to consider Basin Electric as 'his baby,'" according to East River's history.[1] But when Grahl came to his first committee meeting, Hanlon readily turned over the reins of the group to the new general manager. The ease and poise Hanlon showed there, Grahl said later, "was another demonstration that Virgil Hanlon really was dedicated to the ideas embodied in Basin Electric and was not interested in personal control or personal power."

One important decision before Grahl's hiring was selecting an architect-engineering firm to design and manage construction of the first generating plant. Larry Jacobson, an electrical engineer who was manager of Rushmore Electric Power Cooperative in Rapid City, SD, headed the member manager committee that recommended Burns and Roe of New York, for the plant project. The Basin Electric Board concurred, hiring Burns and Roe.

Grahl had started work in July 1962 at Basin Electric's headquarters on the sixth floor of the Provident Life building in downtown Bismarck. Grahl and Mary Burgum, his secretary, had an office outfitted with a card table and a few folding chairs. For accounting, Grahl carried a checkbook in his jacket pocket.

Later, Grahl said he had become aware of dire predictions. Basin Electric would fail "because, as they

1. Harlan M. Severson, *Stepping Forward Boldly, The Story of East River Power Cooperative,* Hunter Publishing Inc., 1975, 127-128.

put it, 'this bunch of farmers' (the board of directors) never operated a generating plant and they had decided to use a poor quality fuel (lignite coal)."

Grahl believed in the people and the plans they were moving forward: a "giant power" cooperative concept that aggregated member electricity requirements to build a large power plant that was mine mouth to meter, providing power supply at the postage-stamp rate to all its members. Building at the mine mouth meant no railroads were involved, making the system as self-sufficient and independent as possible.

However, even before Grahl moved into the Provident Life building office space, Basin Electric encountered a major test in constructing its first power plant. Without power contracts, a plant site, water or fuel supply or transmission, REA announced in May 1962 that the Cooperative's $36.6 million loan wouldn't be released.

That presented a big challenge for Grahl and the Basin Electric directors.

First reclamation requirement in U.S. fuel supply contract

Soon, the board acted on its intentions regarding reclamation. In July 1962, directors shaped a policy requiring that all coal companies include as part of their price the cost of leveling the land after it has been mined. No more spoil banks, directors insisted. "We feel strongly that as we move into this increased use of lignite we must insist that the land be restored to the condition of rolling countryside," according to the directors, in an early issue of Basin Electric's *News.*[2] "This is necessary so that subsequently there can be programs of seeding and perhaps forestation to restore the beauty and usefulness of the land."

It was an unusual requirement that was ahead of its time. This precedent-setting condition was inserted into a 30-year fuel contract signed in November 1962 with a longtime North Dakota mining company, Truax-Traer Coal Company of Minot, which would be opening a new mine near the proposed 200-megawatt power plant. This was the first reclamation language ever written into a fuel supply contract in the United States and pre-dated any state and federal requirements.

"Basin Electric will pay to have (reclamation) done because our board of directors are all farmers who respect the land," Grahl said.

Secretary of the Interior Stewart Udall took note of Basin Electric's unusual stance requiring reclamation. In a letter, Udall wrote he was pleased that lignite development "is going to be carried forward in a manner that will not forever blemish the countryside where the plant is located. We applaud your action and hope that your pioneering effort will be a useful step forward in a sound program of use and conservation."[3]

A permit to use Missouri River water for the project came swiftly, but not without objections, thus requiring a hearing before the North Dakota State Water Commission.

Lignite Electric Power Cooperative raised six objections, though five were ruled as not applicable. The only point considered by the commission dealt with Lignite's concern that if it built a plant upstream, then Basin Electric might sue for raising the temperature of the river, which could adversely affect the operation of its proposed plant.

Frank Rose of Dakotas Electric Cooperative, Lignite's representative, said it understood that could happen with extremely low river levels. But the state engineer said Lignite's information on the river wasn't accurate, and Rose conceded that its objection had been based on erroneous data.

Curiously, Lignite's appearance at the commission came just shortly after it had rejected an offer by Basin Electric to buy Lignite's adjacent power plant site near Stanton. And that rebuff came just after Basin Electric directors considered—and deemed not feasible—a last-minute proposal from Lignite that Basin Electric build its plant on Lignite's site.[4]

2. "Basin Electric Directors' Meeting," *News from Basin Electric Power Cooperative,* July 24, 1962, 2.

3. "Secretary Udall Writes," *News from Basin Electric Power Cooperative,* Aug. 27, 1962, 6.

4. "Basin Granted State Water Permit" and "Basin Offers to Buy Lignite Site," *News from Basin Electric Power Cooperative,* Oct. 26, 1962, 2-5.

Trommerhausen and Wisdom: Keys to historic transmission pooling

Meanwhile, Basin Electric had been working on transmission—the last piece needed to lift the conditions or stop orders on the REA loan. Grahl and Jones made a series of trips to Washington, D.C., to meet with the REA and the U. S. Bureau of Reclamation. However, William Trommerhausen of R. W. Beck and Associates, a Seattle-based engineering firm, and William "Bill" Wisdom, a partner in a Des Moines law firm specializing in cooperatives, handled the nitty-gritty negotiations with the Bureau for a transmission contract.

William Trommerhausen

William "Bill" Wisdom

In the process, Basin Electric faced opposition from some in the Bureau who viewed the new G&T as a competitor out to take away its customer cooperatives.

Those efforts culminated in a historical pooling contract signed on Nov. 29, 1962, between the Department of Interior and Basin Electric. According to an Interior Department news release, the contract provided for the federal government to wheel power from Basin Electric's power plant near Stanton to the cooperative's customers reached by the transmission facilities of the Bureau of Reclamation (later operated by the Western Area Power Administration). For use of those transmission facilities, Basin Electric would pay the federal government about $980,000 annually.

The contract also lifted the final stop order for the power plant loan.

Completion of the contract, said Ken Holum, then assistant secretary of the Interior, in a news release at the time, was "one of the most significant actions the

Basin Electric President Art Jones signs the critical pooling contract on Nov. 29, 1962, with the U.S. Department of Interior. Bruce Johnson of the Bureau of Reclamation; Ken Holum, Assistant Secretary of the Interior; and North Dakota Sen. Quentin Burdick (hidden) look on.

Department has taken in years to make broad resource development possible in the upper Missouri Basin States and to help preference customers in the area meet their critical power-supply problems."

In its news release, the Interior Department noted that Basin Electric's power plant would be the first mine-mouth generating plant in America using lignite. "Other countries having extensive lignite deposits, such as Australia and Germany, have made similar installations to take advantage of the economies of lignite mine-mouth generation," according to Interior's November 1962 news release.

It took two years for Trommerhausen and Wisdom to fashion this intricate pooling contract, an incredibly complicated document providing for operating a transmission system as if it were owned by a single entity, yet ensuring benefits to both the federal government and Basin Electric. And with the stroke of a few pens, an extraordinary arrangement was created setting up integrated operation of coal-based (thermal) power, hydropower and a transmission system.

After just a year from its formal incorporation, this new "super G&T" had 64 member cooperatives in six states—North Dakota, South Dakota, Montana, Iowa, Minnesota and Wyoming.

The Cooperative was operating on a Spartan budget, with very few employees. "Contrary to the opinion of many, Basin does not have a large staff now. It is not expected that a large staff will be hired within the near future, either," the Cooperative's *News* reported in August 1962.[5]

Besides Grahl, the staff consisted of four people:

- Conrad Blomberg, former North Dakota Association of Rural Electric Cooperatives (NDAREC) manager, who was in charge of public relations,
- Arnold Ketterling, office manager and accountant for Mor-Gran-Sou Electric Cooperative at Flasher, ND, who was working part time setting up the Cooperative's financial records,
- Florence Walker, formerly with the NDAREC magazine, who was the receptionist and Blomberg's secretary, and
- Mary Burgum, formerly a secretary with the North Dakota Board of Nursing, Grahl's secretary.

Basin Electric didn't hire a chief engineer until the spring of 1963 with the employment of Merl Burgin, who was later joined by George Paraskeva, an engineer who had managed a Cleveland, OH, municipal power plant.

Paraskeva had heard about Basin Electric and knew of Leland Olds. "I heard about a bunch of new REC groups who were forming to build a lignite burner in the frozen wilds of North Dakota," said Paraskeva in an interview Sept. 6, 2006.[6] In his years in Ohio, he had grown to admire and respect Leland Olds, whom he had met. "So when I heard they were to name it (the power plant) after Leland Olds, I thought, by golly, this could be a good place to work for. I was still young enough and full of beans and I was looking for more challenges."

At about that time, Ketterling, now the Cooperative's full-time controller, hired Georgia Miller as a general accountant and Michael Lord as plant accountant.

Plans had moved forward on the new power plant when Basin Electric's directors finally decided on a site after considering nine locations and touring several earlier in the year. In September 1962, board members picked a 400-acre parcel along the Missouri River about four miles south of Stanton.

The site had the necessary resources—a water supply, nearby rail line and plenty of lignite. It also was close to the federal transmission system; just 12 miles of transmission would be needed for an interconnection to that system.

Community meetings were held in the area near the plant—in Stanton, Hazen, Beulah and Center—explaining that construction was to begin in the spring of 1963 with completion projected for the fall of 1965. The staffing there was projected at 35 full-time employees when the plant was to begin operating.

As bids came in for the power plant, its size was beginning to be understood.

The new 200-megawatt plant would have the largest boiler ever designed and built. Measuring 196-feet tall or about 19 stories, it would be the largest piece of equipment to be installed at the facility. The cost for the Babcock and Wilcox Co. boiler: $7.4 million.

Boilers for lignite-fueled power plants must be larger than other coal plants using higher-grade coals, such as sub-bituminous. Because lignite has a high content of water and ash, lignite is harder to burn, has a lower heat value and leaves more ash. So, boilers burning lignite must be larger to achieve the same heat output and to prevent boiler plugging. In addition, the ash characteristics of lignite require more attention to soot blowing and boiler operation to maintain high availability and reliability.[7]

The first turbine generator would cost $3.8 million, based on the low bid from General Electric.

Though the plant would be built near Stanton, Basin Electric's headquarters remained in Bismarck. "This is

5. "Basin's Staff Members," *News from Basin Electric Power Cooperative,* Aug. 27, 1962, 2.
6. George Paraskeva, interviewed by Julie Slag, Sept. 6, 2006, Basin Electric archives.
7. "Lignite Combustion" September 1998. http://www.epa.gov/ttn/chief/ap42/ch01s07.pdf

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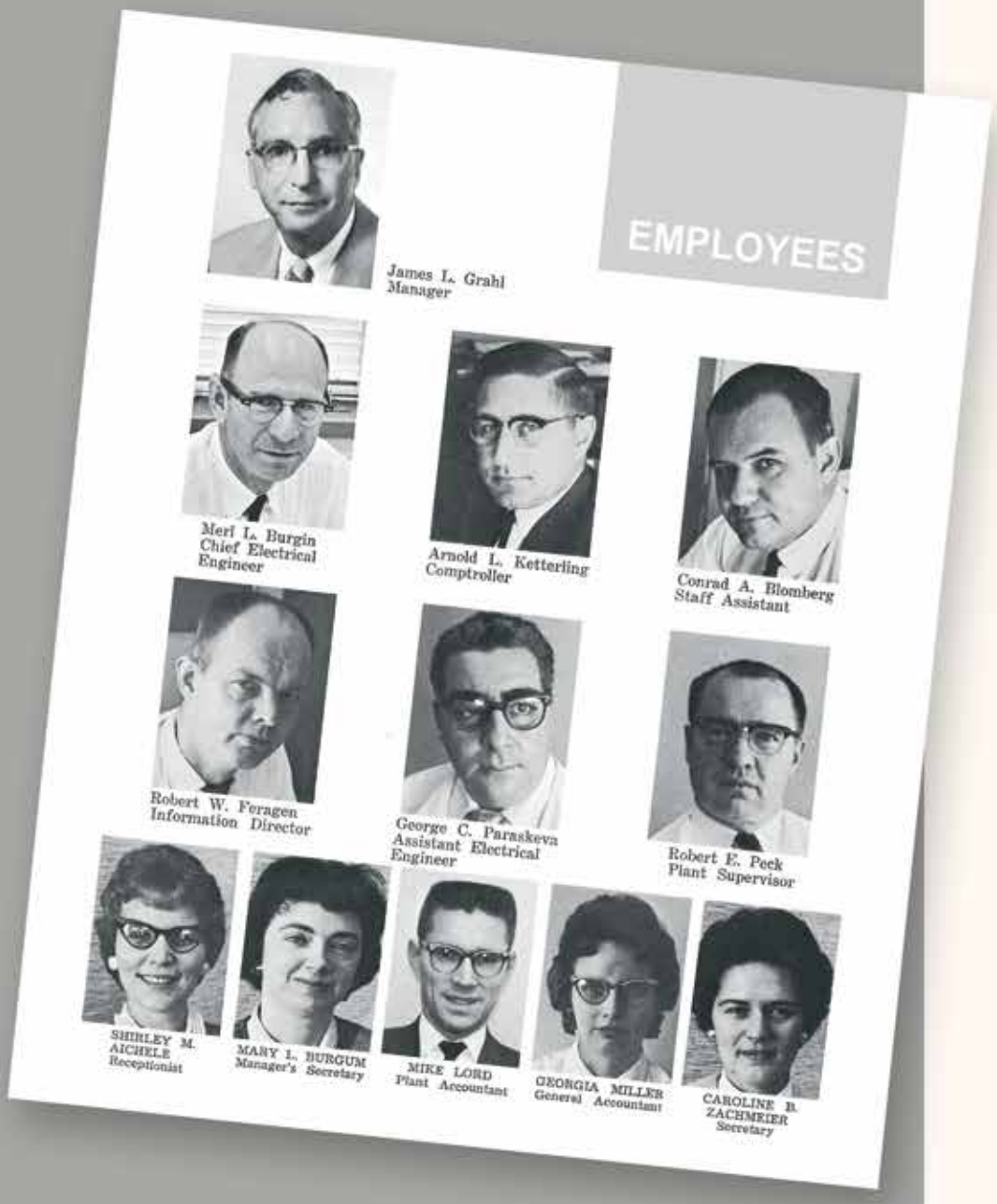
Early Basin Electric staff as pictured in the 1963 Annual Report



The Cooperative was operating on a Spartan budget, with very few employees. "Contrary to the opinion of many, Basin does not have a large staff now. It is not expected that a large staff will be hired within the near future, either," the Cooperative reported in August 1962.

Tossing the first shovels of dirt at the Leland Olds Station groundbreaking included from left: Basin Electric President Art Jones, U.S. Sen. Quentin Burdick, North Dakota Gov. William Guy, REA Administrator Norman Clapp, Maud "Mary" Olds (Leland Olds' widow), Assistant Secretary of the Interior for Water and Power Development Ken Holum and John Olds (son of Leland Olds).

because many members, consultants, sales people and others who must meet with Basin's management come to Bismarck by air," the *News* reported.[8] "It would be inconvenient for these people to drive the 60 miles from Bismarck to the plant site."

At this time, a Minnesota group—United Power Association (UPA)—announced plans to build a power plant in North Dakota. Basin Electric's directors responded by resolving they would accept membership in any direction.

REA encouraged both UPA and Basin Electric to come up with a joint venture. However, it lost steam because the Minnesota cooperatives had little interest. At a combined board meeting in Minnesota, UPA announced it would rather work with Northern States Power Co., the Minnesota-based investor-owned utility.

With REA no longer insisting on a joint plan, UPA received a federal loan and would build the Stanton Station upstream from Basin Electric's plant site.

8. "Plant Site Chosen on River," *News from Basin Electric Power Cooperative,* Oct. 4, 1962, 2-3.

As Basin Electric readied for its groundbreaking, directors formally announced that its new plant would, indeed, be named after the late Leland Olds, a tribute to the man who conceived of giant power development in the Missouri Basin.

Groundbreaking for the first power plant

On June 22, 1963, more than 8,500 people gathered at a site south of Stanton near the banks of the Missouri River, sitting on the prairie at the groundbreaking for the Leland Olds Station. This would be the place for the largest lignite-fired power plant in the Western Hemisphere.

Assistant Secretary of Interior Ken Holum, a key figure in Basin Electric's successful loan, spoke of the benefits to rural consumers from the hydro and thermal facilities that will be integrated by the federal transmission system. "Lignite coal is going to work to generate cheap power for farmers, to provide a new major source of

More than 8,500 people from across the region attended the groundbreaking ceremony for Leland Olds Station Unit 1 on June 22, 1963. It was a county-fair atmosphere on a beautiful Saturday in early summer, with a large tent and servings of barbecued beef for lunch with music by a band from Ellsworth Air Force Base in South Dakota.

energy for the country, to provide jobs now and more jobs in the future for Dakota citizens," he said.

Virgil Hanlon, East River manager, spoke of the legacy of Leland Olds. "Lee Olds was a friend of all electric consumers," Hanlon said. "Lee Olds represented—and represented well … the electric consumers of America. He was dedicated to low-cost power."

Other dignitaries speaking were those involved in getting the system approved, including North Dakota Gov. William L. Guy, Sen. Quentin N. Burdick of North Dakota and REA Administrator Norman Clapp.

Guy was credited for his work in bringing large-scale energy production to the region and his courage in supporting the concept of Basin Electric. Art Jones, Basin Electric president, said Guy risked his re-election in 1962 to support Basin Electric.

Clapp also was given kudos for his effort. Grahl pointed out that Clapp "caught a lot of hell for initiating a significant program to finance cooperative generating plants." It was a controversial decision, opposed bitterly by power companies, Grahl said.

Jones turned the first shovel, followed by the other dignitaries, including Mary Olds, Leland Olds' widow, and her son, John.

Two days later, Lawrence Carlson of Washburn, an employee of Northern Improvement Co., rolled his Caterpillar bulldozer out across that site. His dozer blade sliced into the prairie, and, with that, construction truly began on this giant plant that had started with one man's vision and provided the power to fulfill the dreams of thousands.

Construction drew hundreds of workers from North Dakota and the region and, occasionally, from across the country. With a relatively good winter, construction went exceptionally well, with steel rising 50 feet above the prairie, making it easily visible for miles.

Within a year, ironworkers finished putting up the 2,785 tons of steel framework. To commemorate this "topping out," a ceremony marked the day, with the traditional

raising of an American flag to the top of the structure assembled by ironworkers. Doing the honors of attaching the flag atop the steel were three ironworkers from North Dakota—Eugene Braumberger of Hazen, John Lindeman of Golden Valley and Pius Keller of Stanton.

The special day produced a tribute to the farmer-directors now leading an organization that would operate giant power plants. Kenneth Roe, a partner in the New York-based Burns and Roe engineering firm with projects worldwide, said he enjoyed meeting with Cooperative's board of directors because of their knowledge. They "know all about kilowatt demand and energy and diversity and voltage," he said, "and they come out and visit the project while it's under construction. Private power directors probably won't see the plant until it's dedicated to them."[9]

Farmers knew that sometimes when you bought machinery, you may have to work on it—even rebuild it—to make it work. Grahl said he soon learned that design mistakes could be made in producing big, heavy equipment, which means skilled people are needed on site to get it squared away.

Rich Fockler, a native of Dunn Center who had come to the Leland Olds construction as a Babcock and Wilcox startup engineer, later commented about the skills of those Basin Electric engineers and technicians working there. They "didn't realize that getting the equipment to work was impossible, so they went ahead and did it. If something didn't work, they made it work."[10] Fockler would later join Basin Electric's management team.

As major construction reached this mile-marker, Basin Electric received good news from the REA. The proposed firm-power rate for member electric cooperatives had been approved at 5.6 mills (or 0.6 cents) per kilowatt-hour, which had been the rate projected early in the studies on the new power plant.

9. *Power for the Plains: 25 Years of Service,* Bismarck, ND, Basin Electric Power Cooperative, 1987, 25.
10. Ibid.

Celebrating completion of the structural steel on Leland Olds Unit 1 on June 9, 1964, were Helge Nygren, Charles Tighe, Kenneth Roe and James Grahl. A flag is attached to the last piece of steel raised.

"We are gratified that we will be able to provide abundant, low-cost power to our members in the Missouri Basin just as we had planned," Grahl told directors. Jones added the rate would be among the lowest-cost for thermal power in the nation when the plant becomes operational in the fall of 1965.

Training a first generation of operators

As construction progressed, Basin Electric turned to more immediate demands—training operators for the power plant's first unit. Robert Peck, who in October 1963 became the first plant superintendent, announced he would head a four-person supervisory team that had a total of 67 years experience in operating power plants.

Peck had been plant superintendent at a two-unit 150-megawatt plant in northern Minnesota. There he had followed both units through construction, trained the operating crews and supervised the 90 men working there.

An unidentified worker signals a crane operator during construction of Unit 1 of the Leland Olds Station.

Workers prepare steel framework to be lifted to an area under construction of Leland Olds Station Unit 1.

Within three months, the special school turned out 15 operators, enough to fill the 24 operating positions needed. Most came from the local area. In total, 44 employees would be hired for the various plant operations.

Important additions were made to Basin Electric's staff, both at headquarters and at the power plant site. Howard Easton, an electrical engineer, had been with the U.S. Bureau of Reclamation in Huron, SD, until he joined Basin Electric in 1965 to work in marketing on economic feasibility studies and system design. Within a few months in 1966, Kent Janssen, a native North Dakotan and a mechanical engineer, was hired as results

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Safety program a success

Plant nurse willing to climb high steel

Joyce Burns examines an unidentified worker's eye during the construction of Leland Olds Station. Burns was the plant nurse through September 1975.

Excerpted from the March 1965 issue of Basin Electric Report.

Climbing to high and precarious perches on a giant power plant is usually considered a man's job.

But to the more than 500 men now working on the Basin Electric Leland Olds plant, the fact that there is a woman willing to follow them right up to the top if necessary is a source of great comfort.

The woman is Mrs. Joyce Burns, plant nurse.

Climbing up on the high rigging is not just a possibility to Mrs. Burns. She has done it.

She has gone up on high scaffolds to treat injured and sick men, and to prepare them to be lowered to the ground to be taken to the hospital. A registered nurse, she is the only person on the job with the necessary medical qualifications and she has displayed her willingness to go wherever she is needed.

Mrs. Burns is a key person in the Basin Electric safety program, a program that has kept injuries at the plant well below the average for such construction projects.

The aim of the program is to hold injuries to the lowest possible and to render immediate medical attention when injuries do occur.

An essential part of the safety program is preventive, according to Harry E. Jacobs, resident construction superintendent for Burns and Roe Inc., engineers and constructors for Basin Electric.

There is an organized safety meeting every two weeks. Present are Jacobs, Mrs. Burns and eight men, one representing each major craft on the job. Jacobs can call in more men if he feels it is necessary. After the meetings, the eight men go back to their crafts and act as monitors. Any hazards they find and cannot immediately correct themselves, they report to a Burns and Roe representative.

Foremen hold regular "tool box" safety meetings of eight to 10 men. Mrs. Burns meets with foremen sometimes to explain basic procedures such as artificial respiration and how to lift injured men onto stretchers. The foremen in turn pass the information onto their crew members.

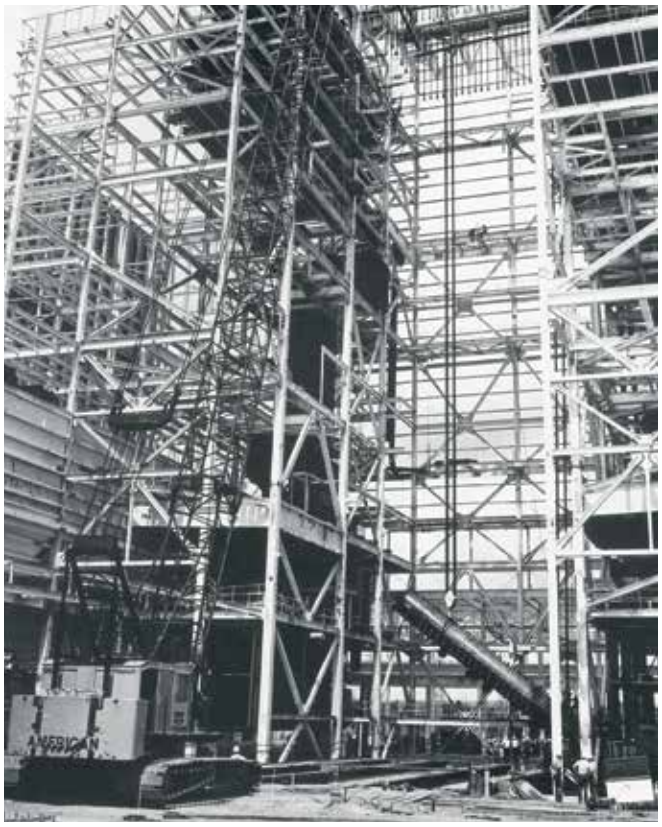
As a final precaution, all workers have been notified that they can go straight to Jacobs if they believe there is a hazard of any kind on the job that isn't being corrected.

Another preventive program is the administration of "flu" shots and tetanus boosters to all men who want them. Mrs. Burns has given the shots to 200 men so far.

Mrs. Burns has had broad nursing experience. She worked three years in the Mayo Clinic in Rochester, MN, and three years in a small hospital in Grand Marais, MN. She was an obstetrical nurse in New Ulm, MN.

Power plants aren't strange to her either. Both her husband and her father have worked on them all their adult lives. Both, in fact, are employed on the Leland Olds plant. Her father, William Moyer, is mechanical maintenance supervisor for Basin Electric. Her husband, Curtis Burns, is employed by Burns and Roe on plant construction.

It's all in the family—including climbing to the top of the 162-foot plant, if necessary.



The 187-ton boiler drum for Leland Olds Station was raised in July of 1964. Harry Jacobs, construction superintendent from Burns and Roe, said the raising went off "without a hitch," according to the August 1964 *Basin Electric Report*.

engineer at the Leland Olds power plant. Janssen, who had been in the research department at Babcock and Wilcox, now was second in command to Peck at the plant.

What lay ahead in the first 15 years for consumers in the Missouri Basin was the building of more power plants. Many more lignite-fired generating units producing low-cost power were needed, according to a study in 1964 by the Missouri Basin Systems Group (MBSG). Led by the Mid-West Electric Consumers Association, MBSG, was a transmission planning and coordination group that involved the Bureau of Reclamation, along with more than 100 cooperatives, including Basin Electric as well as municipal systems. MBSG forecast that 17 plants the size of the Leland Olds first unit—or about 3,400 megawatts in total—would be needed in the upper Missouri Basin states by 1980. If fueled with North Dakota lignite, the savings to consumers would be up to $19 million annually.

That level of development would mean power generation would rapidly become a major industry in North Dakota, noted Grahl, a member of the MBSG planning committee. It would result in the employment of several hundred people to operate the power plants and mine the lignite, in addition to hundreds needed to build the facilities, he said.

With the first unit at the Leland Olds site just 25 percent complete, Basin Electric announced plans for a second generating unit on June 17, 1965. Jones said the $90 million unit would be at least 200 megawatts and possibly located at the Leland Olds plant site, generating electricity by 1968.

Jones said the additional unit would help the economics of Basin Electric's annual fee of nearly $1 million paid for use of the federal transmission grid. A second unit would help promote other major projects in the Missouri Basin, and provide power to other consumer-owned utilities, such as municipal systems in the region, thereby allowing the Cooperative's power plants to be fully loaded—that is, sell out all the power of that second unit.

Within a year, studies indicated that the second unit of the Leland Olds power plant should be 400 megawatts and operating by 1969 or 1970, along with construction of about 560 miles of extra-high-voltage transmission line from North Dakota to Nebraska. A 400-megawatt unit was considered nearly the top limit of what would be technically feasible for burning lignite. Basin Electric said the plant would provide power for the about 10 percent of the nation's rural electrics.

Grahl told members it would be easy to justify another 200-megawatt unit but that it would have been obsolete 10 to 15 years after completion. With economies of scale, Grahl said the 400-megawatt unit held promise to produce the lowest cost power for cooperatives in the region. Considering costs and boiler industry guarantees for large units, Grahl and others now believed that future lignite-fired generating plants should be 400 megawatts or larger.

With a series of wet years across the region in the early 1960s, more water behind the dams meant more hydropower available to consumer power systems. As a result, REA announced that it would delay action on what was now a $97 million loan request for the 400-megawatt second unit at the Leland Olds power station.

In December 1965, Basin Electric directors urged REA to consider the loan request sometime in the next year. Hydropower would meet the region's power requirements until about 1971, but Basin Electric pointed out that it would take about four years to get a 400-megawatt unit designed and built.

Their urgent request to Washington, D.C., followed a huge blackout. In what is termed the "Great Northeast Blackout of 1965," the largest in U.S. history, at least 25 million people in New York, New England and portions of Pennsylvania and New Jersey lost electricity for a day starting late in the first week of November.

A simple faulty relay at one power station caused a cascading effect from overloads, producing a massive blackout. But it also caused those in the power industry and in Washington, D.C., to think about the reliability of the electric grid, adequate power and better coordination.

Leland Olds Unit 1 generates its first power

On Jan. 9, 1966, the 200-megawatt unit began sending power to an ever-growing Basin Electric membership—105 rural electrics in eight states. Basin Electric had become the first large, regional cooperative power enterprise in the Missouri Basin, and the first initiated totally by the region's residents. "So Basin Electric stands as a symbol; it is more than just a power supplier," according to a Basin Electric publication.[11] "The rural residents of the Missouri Basin … have created one of the largest homegrown ventures in the region. They have done it in a way that (is) incontrovertibly sound according to business principles. They have done it by themselves and for themselves. The benefits will flow to the entire region."

That served as the theme for the formal dedication of that first unit in September 1966. With the backdrop of a cold Northern Plains wind and threats of rain, a host of dignitaries joined about 2,500 people for the ceremonies that focused on tributes to Leland Olds.

"Although Lee Olds was looked upon by some as a radical or extremist in the power field, he bore no malice or enmity toward the private power companies," said Alex Radin, general manager of the American Public Power Association. "He wanted consumers to get a square deal both from public and private power systems." Radin said Olds had been criticized by some public power supporters for drafting legislation for a possible "giant power" system in America that they saw as too biased in favor of private power.

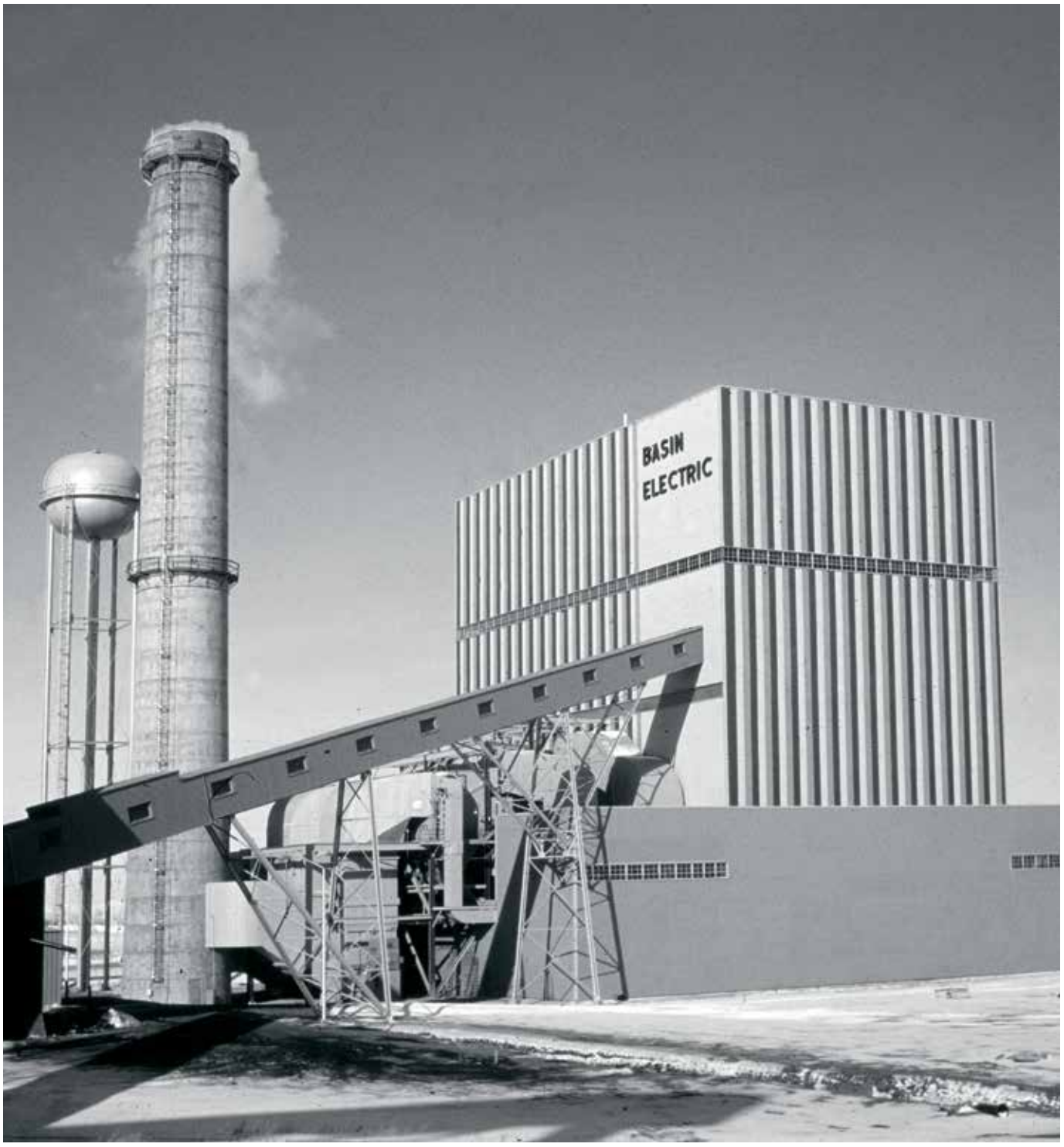
The highlight came as Basin Electric President Art Jones joined with Olds' widow to unveil a bronze medallion cast with her late husband's profile. The medallion would be permanently displayed in the visitation area at the power plant.

Completion of that first unit was momentous, but Basin Electric was to get a lesson in lignite reality in the next few years. Its engineers and technicians would find how challenging it would be to use lignite for electric generation on that scale. The Neal Station at Velva, ND, had proven that lignite could be pulverized and used in electric generation, but that was a smaller generating facility.

Hubert Sailer was one of 13 men trained and then hired as a group in 1965 at the Leland Olds plant. "It was a new and challenging experience for Basin to train us," said Sailer in an interview in 1991. "We were relatively inexperienced except for the shift supervisors and control room operators. The rest were hired locally."

Lignite caused greater problems than planned, according to Sailer and Rich Fockler. Slagging occurred too readily on the boiler walls and bottom, a residue from burning the fuel that reduced the boiler efficiency and thus had

11. "Basin Electric Power on the Line," *Report,* Basin Electric Power Cooperative, Vol. 3, No. 8, February 1966, 2.



Upon its completion in 1966, the 200-megawatt Leland Olds Station, near Stanton, ND, and the Missouri River, was the largest lignite-burning electric generating facility in the Western Hemisphere.

to be removed periodically. Sailer said employees would learn to use fuel additives and various soot-blowing techniques to better remove the buildup.

With the ash and high sodium content, lignite is hard to burn. Then, it also has high water content, and "burning water right away is a trick," Fockler said. As a result, the fuel's end product after burning is like honey, gumming everything, he said. As a consultant to Basin Electric, Fockler offered this tongue-in-cheek suggestion: fill the boiler up with concrete and leave it as a monument. "Like nice try," he said.

In an interview in 1986, Kent Janssen, then the results engineer, described the flurry of activity there. "Debugging Leland Olds Unit 1 and learning how to operate the plant took a great deal of time and effort," he said.

Forming the Joint Transmission System

Meanwhile, MBSG was planning for future power plants and transmission lines. MBSG created the Joint Transmission System (JTS) for this region, joining the federal system with transmission created by its members. Under this arrangement, MBSG members would pay their proportionate use of the JTS. And any future generation and transmission additions to the JTS had to be approved by the MBSG members.

So, Basin Electric's proposal for a second unit of 400 megawatts and the extra-high-voltage transmission lines from North Dakota to Nebraska became part of a comprehensive power plan in the Missouri Basin for the next 10 years. Jones told members at the Cooperative's 1967 annual meeting that another part was an 800-megawatt nuclear generating plan being built by Consumers Public Power District in Nebraska.[12] Studies showed this plan would satisfy the power needs of about 3 million people in the region through 1977.

In total, the comprehensive plan carried a projected price tag of $270 million, which was included in a request for REA loan funds. However, Jones said Basin Electric was looking for an early commitment on its portion of $117 million for the 400-megawatt second unit and associated transmission. The reason, he said, was that the industry has a six-year lead-time for generation equipment, and the 400-megawatt unit was needed by 1974.

Basin Electric also had been looking at the economics and population of the Missouri River Basin served by its member systems, and the outlook was somewhat foreboding. Though electric use on the region's farms and ranches had been steadily increasing, there also had been a steady outflow of people. North Dakota and South Dakota had been losing about 1,300 farms annually. This out-migration and loss of farmsteads could threaten the future of the region. Something had to be done to help recharge the rural economy of the Northern Plains.

Based on member recommendations, Basin Electric formed an Area Development Program in 1967, headed by Lloyd Ernst, an assistant to Grahl. Rural electrics have a responsibility to help "in the very preservation" of the rural community, Ernst told an area economic development seminar later that year in Madison, SD, hosted by East River. Small communities are rapidly losing the battle for survival, he said. "Millions of dollars of capital investment in small town store buildings, residences, churches, schools and other public facilities will be wasted," he said. "It is not a pleasant thought, just as it is most disheartening to see weeds growing on Main Streets of once prosperous rural communities."

To bolster the program, Wallace Rustad, a North Dakota native and rural development specialist with the U.S. Department of Agriculture (USDA), was hired. In the first year, the Cooperative became involved in more than 60 projects focused on expanding agriculture, industry and business in the region.

One project was getting approval from the USDA for studies to locate a sugar beet refinery in southeastern North Dakota. Another was finishing a study of future oil industry development in the Williston Basin.

12. Consumers Public Power District, Platte Valley Public Power and Irrigation District (PVPPID) and Nebraska Public Power System merged to become Nebraska Public Power District on Jan. 1, 1970, www.nppd.com/About_Us/—Ed.

Highlighting the effort was a rural housing program that began with a demonstration grant of $100,000 from the U.S. Department of Housing and Urban Development (HUD). More than 2,000 housing units were built in what became part of the People's Housing Program. When HUD imposed a moratorium on federally assisted housing, Basin Electric and its members accessed more funding through the Farmers Home Administration to build 700 more units.

REA loan for 10-year power supply plan

In late 1968, the REA finally gave its approval for a $97-million loan to Basin Electric as part of the MBSG 10-year plan for providing the energy needs for the region. The total was then the largest in REA's history. However, it also required Basin Electric member systems to make a commitment of $18 million toward the Cooperative's project now estimated at $115 million.

The REA loan represented "the culmination of four years of engineering studies on how to combine water power, nuclear power and lignite power most efficiently to meet the ever-increasing needs for electricity" in the eight-state region of the Missouri Basin, according to Jones.

A key element—the backbone—is an extra-high-voltage transmission line from North Dakota to Nebraska. This would allow plan participants to take advantage of the seasonal diversity between the northern and southern sections of the Missouri Basin region, relying more on hydropower to meet winter power demands in the north and then the peak demands in the south in the summer.

Coinciding with the REA loan, a major contract was signed in late 1968 by Basin Electric and the Bureau of Reclamation that allowed for buying hydropower to meet winter peak power needs. Peaking power totals were expected to increase until 1974 when the 400-megawatt second unit at the Leland Olds Station was scheduled to go on line. The agreement allowed for long-term purchase of hydropower until 2010 and also for transmitting power from Basin Electric's second unit on the JTS.

However, the pending REA loan drew a sharp attack from a major private power company. A spokesman for Northern States Power (NSP) Company of Minneapolis (now Xcel Energy) said the loan for a second generating unit was a "flagrant misuse of REA funds," claiming that erroneous information about how plant loading was used to justify the request and that Basin Electric and its members were using excess power to steal customers from other power suppliers. NSP called for a freeze on the loan until a federal investigation into Basin Electric was completed.

That request made at a Senate Agricultural Appropriations Subcommittee hearing didn't go far. Milton R. Young, North Dakota's senator on the subcommittee, denounced the attack as the most vehement he'd heard. And he arranged for a lengthy rebuttal from Basin Electric to be included in the record.

Basin Electric's response showed the NSP spokesman had used erroneous data in his attack. In addition, the Basin Electric staff explained cooperatives recently joining East River had given notice of their intention to withdraw from other power suppliers two years before.

New generation possible in Wyoming

Basin Electric was also planning for the rapidly increasing power needs of members in Wyoming and Colorado. Based on the large sub-bituminous coal deposits in Wyoming, Grahl said Basin Electric should investigate the economics of locating its third and future generating units in that area. The units would be larger than 400 megawatts.

In 1969, directors authorized coal studies in Wyoming by R. W. Beck and Associates as an initial step to locating a plant site. However, having an adequate water supply for a large generating unit likely would be problematic in this region, and Basin Electric noted it was studying groundwater resources.

In addition, Grahl said Basin Electric was working with Tri-State G&T Association of Denver, a member power supply cooperative serving a dozen Wyoming rural electrics, to study how to jointly meet the power needs of members in the sparsely settled western areas of Wyoming.

Meanwhile, at the Leland Olds Station, employees were getting record production out of the first generating unit. In December 1968, the plant—determined to have a rated production capacity of 216 megawatts—set a net-generation record of more than 149 million kilowatt-hours (kWh) while burning a monthly record 121,782 tons of lignite. During 1968, records were achieved with a net generation total of 1.42 billion kWh and 1.16 million tons of lignite consumed in the year. Producing record energy levels represented just one of the notable achievements by Basin Electric and its new generating station as the 1960s drew to a close.

Another achievement involved marketing. Basin Electric worked with a Fargo-based company, Industrial Minerals, on a system to collect and market fly ash, the tiny ash particles that escape from the furnace when lignite is burned. This waste material is normally trucked to the mine pits for disposal. With the installation of a 300-ton capacity storage tank, marketing the fly ash would produce sales revenue, instead of a cost for disposal. Commercial sales of fly ash got a boost in 1968 when the North Dakota Highway Department approved this combustion waste material as filler in asphalt concrete for road construction.

Yet another achievement came in 1970 with the initiation of a pioneering pollution control program at the Leland Olds Station. A pilot electrostatic precipitator was installed to collect data on preventing fly ash from passing out the plant's stack into the atmosphere. An electrostatic precipitator works by applying an electrostatic charge to the fine ash particles, causing them to stick to steel collection plates. The plates are then hit periodically, causing the fly ash to drop into a collection hopper for proper disposal.

It was the first such pilot research on lignite to improve air quality, and helped develop pollution-control technology for lignite-fired power plants around the country.

Leland Olds plant named lowest-cost producer in United States

In 1968, Leland Olds Station Unit 1 was named the most economical in the United States. Its total operating cost of 2 mills per kWh was the lowest among 21 new generating plants in a survey by *Electrical World*, a utility industry publication. As a new plant, this was the first time it had been included in the survey. The next closest plant came in at just under 3.5 mills per kWh.

Grahl said the survey underscored the point that rural electrics "can operate large-scale generating facilities as capably as any utility in this country." It also demonstrated that lignite can be one of the lowest-cost sources of electricity in the United States, and he predicted North Dakota and the upper Great Plains would see more development of those low-cost fuel sources.

All of this contributed to a major national award for Basin Electric. At the 1970 annual meeting of the American Public Power Association, the Cooperative was honored with the E. F. Scattergood Systems Achievement Award. The award recognized Basin Electric for:

- Achievements and leadership in future power supply planning;
- Protection of the environment through spoil bank restoration, air and water pollution control, and the pilot electrostatic precipitator program;
- Marketing fly ash;
- Developing an area development program in its eight member states; and
- Developing public and member information.

Grahl reported at the Cooperative's 1970 annual meeting that members were among the most fortunate in the country, based on the achievements of the Leland Olds Station's first unit.

It was a positive and promising start to a new decade for an organization built on an extraordinary vision of giant power for the Missouri Basin region.

Award-winning film shows Missouri Basin development

The Prairie is Our Garden

Communication is a principle that rural electric cooperatives follow.

James Grahl, Basin Electric's first general manager, endorsed communication. Grahl cited several reasons for Basin Electric's success, including a "strong, effective, continuous, persistent information program, particularly for members, but to some extent for the public too."[1]

Art Jones, Basin Electric's first president, directed that a newsletter be issued as often as needed to keep up with events. "It is anticipated that the newsletter will continue, even after the loan (for Basin Electric's first generating unit) is made, to keep the progress report in the hands of the members," the *News* reported.

Indeed, Basin Electric's communications program continued and grew. In 1969, a Basin Electric film gained national attention. "The Prairie is Our Garden," a 28-minute color film, earned the "Excellence Award in Public Relations Achievement" at an American Public Power Association (APPA) meeting in San Antonio.

It was the first film Basin Electric produced. Robert Feragen, Basin Electric's information director, wrote the script and supervised the production. Feragen, who later became assistant to the general manager, eventually became REA administrator, serving from 1978-81 and East River's general manager from 1986-90.

Image courtesy of the South Dakota Art Museum.

Artist Harvey Dunn's paintings, including "The Prairie is My Garden" (above), were used over a narration describing the development of the Missouri Basin in a film produced by Basin Electric in 1969 called "The Prairie is Our Garden."

Burdette Calkins, information assistant, directed and photographed the film, and Fred Simonton, executive director of Mid-West Electric Consumers Association, provided the narration.

Pioneer history was illustrated in the film through oil paintings by South Dakota artist Harvey Dunn. The film's title comes from a Dunn painting, "The Prairie is My Garden."

Report described the film this way: "The award-winning movie gives a comprehensive look at the development of the Missouri Basin—the struggles of the pioneer farmers, the farm movements of the early 1900s, the role the federal dams have played in the development of the region, and the work of rural electric cooperatives in bringing 'area coverage' to farms and rural communities. Basin Electric's role as a pioneer in the large-scale use of lignite coal resources of the Upper Missouri Basin is explained in the movie."

The film's narration concludes this way: "The prairie is our garden to cultivate with care, to nurture for its people. ... Its fields are fertile, if cultivated with understanding. Its water resources are great, if conserved and wisely used ... Low-cost power is essential for development of the Great Plains. ... The rural electric cooperatives are pledged to providing this vital energy to their member-consumers. They are dedicated to helping to develop this region, to cultivating this prairie, which is our garden."

1. "How Giant Power Came to the Plains." *Public Power,* March-April 1985, 38.

Chapter 4

A regional power supplier evolves

Basin Electric faces the pains of growth

As Basin Electric neared its 10th year, the Cooperative had become a testament to the wisdom of the late Leland Olds, who had urged that giant power should be developed in the upper Missouri Basin to provide low-cost power for rural consumers.

Olds said rural consumers should build their own wholesale power supply. And, through their rural electric cooperatives, they had indeed built a strong power supply system. In his 1970 annual report to the membership, Basin Electric President Art Jones said the Cooperative was beginning the decade as a proven power supplier for its member cooperatives. "The hopes of rural electric people … of giant thermal plants in the Missouri River Basin are a reality today," he wrote.

Members had an assured supply of low-cost electricity through nearly the end of the decade, according to Jones, and now plans were under way to extend and strengthen that system beyond that period, into the 1980s.

At this time, the Cooperative had 88 employees—35 in the Provident Life Building in downtown Bismarck and 53 at the Leland Olds Station near Stanton.

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The first administrative offices were housed in the Provident Life Building in downtown Bismarck on the corner of Fifth Street and Rosser Avenue.

Concept vital to Basin Electric's birth, success

Postage-stamp rate faces legislative challenge

A postage stamp sends letters across the street or across the nation. A postage-stamp rate for power means those purchasing power pay the same rate, regardless of their location.

One of the first uses of the concept came with public power development. J. D. Ross, the first administrator of the Bonneville Power Administration (BPA), established a postage-stamp rate "so that all utilities regardless of location paid the same price for transmission over BPA lines."[1]

Proponents of the plan that became Basin Electric touted the rate as the best way to develop a large electric generating plant. They wanted those using the power plant to be equal members, thereby having control over operation and rates.

Those opposed wanted those who obtained power to pay the plant's "bus bar" rate, the cost of power at the plant. Users would have to pay for their own transmission access. Those far from the plant would pay more, effectively limiting the area served.

Proponents of the Basin Electric plan knew it was vital to include a large area. "Without this uniform rate for the Missouri Basin, it would have been cheaper for cooperatives distant from North Dakota to rely on smaller and less efficient local plants," said James Grahl, Basin Electric's general manager, at a meeting in Hazen, ND, in 1964.[2] And without these co-ops as members there would have been no justification for a large generating plant, and North Dakota rural consumers—as well as others in the region—would have had to pay higher costs for power from a smaller generating source.

Ground hadn't yet been broken for Leland Olds Station when the postage-stamp rate took some heat in the North Dakota Legislature in 1963. An attack came in a resolution introduced by a McLean County legislator calling for a federal investigation of Basin Electric's first coal contract including proposed contributions into the United Mine Workers welfare and pension fund.[3]

The legislator attacked the rate, saying it resulted in subsidizing out-of-state power users. Though the resolution was killed by the North Dakota Senate, it mirrored similar criticism in newspapers as Basin Electric was being formed in 1961.

Grahl defended the concept at a Senate committee hearing in 1963. "For one thing, we are an association of non-profit, consumer-owned cooperatives and the equal sharing of benefits is a common principle," Grahl told legislators. The concept is similar to the policy of "area service" on which rural electric cooperatives operate, he said.

"That means that the farmer far from a distribution line is served at the same retail rate as the farmer located right next to a line," Grahl testified. "Without this policy, rural electrification in this country would be decades behind where it is now and millions of rural families would still be using the kerosene lamp."

Grahl pointed out a large generating plant using North Dakota lignite wouldn't be near start of construction if a rate policy confined low-cost power to cooperatives just in North Dakota, he said. Basin Electric likely would be looking at a 75-megawatt plant, instead of the 200-megawatt facility now planned.

"In our judgment, the postage-stamp rate is the key to opening up a regional market for the billions of tons of North Dakota lignite, which have lain largely idle for so many years, and will bring major economic benefits to this state," he said. Instead of being a subsidy to those outside North Dakota, Grahl concluded, the "postage-stamp" rate works to create "the mass markets necessary for mass production, mass distribution and low costs for all consumers."

1. "Public Power History, http://www.ppcpdx.org/in-ppHistory.html

2. "Postage Stamp Rate Major Factor," *Report,* Basin Electric Power Cooperative, June 1964, 2.

3. "Senate Resolution Criticizes Basin, Is Voted Down," *News from Basin Electric Power Cooperative,* March 8, 1963, 3.

More importantly, the Cooperative had turned an important corner by the end of the 1960s. After operating deficits throughout its first years, General Manager James Grahl noted that Basin Electric found itself in the "black" near the end of 1970 and expected to finish even for the year.

In its 1970 annual report, Basin Electric partly attributed this success to the continuing good cooperation among member systems and the Cooperative in developing policies and procedures for an effective wholesale power supply system. And underlying the system that provides members with low-cost wholesale power is the "postage-stamp" concept upon which Basin Electric was founded.

Vietnam War affects rural program funding

Like other businesses, the Cooperative faced inflationary pressures in the early 1970s. Costs for equipment and salaries were going up, along with interest rates.

Part of that was due to the cost of the Vietnam War. It had been taking a human and financial toll since America's involvement began in about 1959.

By the time of a cease-fire in 1973, the war had taken an estimated $150 billion from America's treasury—a drain that affected the funding of many badly needed programs. And that included rural development and rural electrification, according to Fred Simonton, executive director of the Mid-West Electric Consumers Association. Speaking in 1969, Simonton said, "But in truth what we have in this place and in this time is not a farm problem or an urban problem or a rural development problem or a rural electric problem," he said. "What we have is a war problem."[1]

No one ever wants the nation defenseless, he said, but with war efforts taking half of the federal tax dollar, there should be more accountability by the military.

War-driven inflation gave Basin Electric its latest sticker shock. In late 1970, directors signed the largest contract in the Cooperative's history—nearly $29 million for a boiler for the second unit at the Leland Olds Station.

That price tag from Babcock and Wilcox of Barberton, OH, was nearly the same as the total construction cost for Unit 1.

This cyclone boiler differed from the first unit's pulverized lignite boiler in the manner in which the fuel is burned in the furnace. In the first unit, coal is ground to a fine powder and then burned in the air inside the boiler. With a cyclone boiler, coarser coal particles are used, slamming them against the walls of the boiler's chambers. Lignite is burned more rapidly in the cyclone method, and more ash ends up being removed as molten slag from the boiler's bottom. That means less goes up through the boiler as fly ash.

Construction began on that huge second unit of the plant near Stanton in March 1972, with hopes it would begin commercial operation in the fall of 1975. With inflation, construction for the plant now was then expected at $153 million, about $25 million above engineering estimates some four years before. REA was expected to finance the overrun.

Joint planning for another plant

With projections for power use still climbing, planning was launched for another generation facility to serve the Missouri Basin region. Basin Electric joined with the Heartland Consumers Power District in Madison, SD, and the Missouri Basin Municipal Power Agency, headquartered in Sioux Falls, SD, to determine a location for the next generation unit.

Jones, in his annual report to members in 1973, noted this jointly planned unit was projected to deliver power by 1979. "The advantages gained through coordinated regional planning and pooling have enabled Basin Electric to develop bulk facilities providing an abundant supply of low-cost power to its member cooperatives," he wrote.

Projected in the 400 to 600-megawatt range, the coal-based unit was expected to be located on the coalfields of Wyoming or Montana, according to the "Third Joint System Unit" study. That location had cost advantages over building another unit in North Dakota.

1. "War Problem Impedes Rural Programs," *Report,* Basin Electric Power Cooperative, September 1969, 1.

Parts of the country had experienced power shortages and, of course, the blackout in the Northeast several years earlier—though not due to a shortage—caused many to think about reliability as well as availability of power.

Wrote Jones: "The Missouri Basin region is one part of the United States where there is no present power shortage. The future? We foresee no power shortage in the region with power costs kept to a minimum as efforts continue to intelligently plan and pool our resources in the best interests of the consumer."

Basin Electric had been designated as the project manager for this planning effort, initially called the Joint System Power Project and later renamed the Missouri Basin Power Project or MBPP.

Along with this planning, the Class A members of Basin Electric—those who purchase wholesale power—were now being asked to consider long-term supplemental "all-requirements" power contracts. These would mean the members would buy all of their future wholesale power requirements from Basin Electric above any federal allocations they held. This, in turn, would give the Cooperative long-term assurance for planning, financing and providing for fuel, transmission and other requirements for power supply in the future. In the next few years, Class A members eventually agreed and signed the contracts.

Attack on the 2-percent loan program

At the end of 1972, the rural electric program took a serious blow. The U.S. Department of Agriculture under the Nixon administration announced a termination of the 2-percent direct loans to rural electrics. Reports indicated the loan program would be converted into "a private financial venture." Loans would now be priced at 5 percent and financed through the sale of guaranteed government securities to private investors. Some suggested the cost of the Vietnam War was causing the Nixon administration to make the cut.

It put Basin Electric's plans in jeopardy. Grahl said the REA had made a commitment to provide a 2-percent loan for the second unit. Now it appeared REA would offer the loan, but at a significantly higher interest rate.

The administration's axing of the historic low-interest loan program drew protests from more than 1,000 rural electric leaders who converged in Washington, D.C. Among those attacking the Nixon administration was Sen. Hubert Humphrey of Minnesota, who claimed Nixon had used rural development legislation as an excuse to chop the loan program and dismantle other rural programs.

Eventually, rural electrics were able to get a rather weak compromise on the loan program. More importantly, Congress took action in 1973 to create a new financing avenue—the Federal Financing Bank or FFB. FFB was relatively unknown until a year later when the Secretary of the Treasury announced the creation of this loan-guarantee program, pointing out the FFB "is authorized to purchase any obligation guaranteed by any federal agency, including REA."

It wasn't the low-cost financing that historically had been available to rural electrics, but, with unprecedented growth among rural electric systems, it would soon become a significant source for financing power supply facilities.

Despite that, for Basin Electric, the news was still bad—its supplemental loan of $51 million needed to complete Leland Olds Unit 2 would be at a 5-percent interest rate.

With this development, Jones announced Basin Electric would be imposing a wholesale rate increase of 21 percent in 1975. Inflation and higher rates were blamed, including the loss of the 2-percent loan for the Leland Olds Unit 2 project. The wholesale rate increase translated into a retail rate increase for consumers that would average 5 percent to 7 percent, according to Grahl.

Basin Electric was experiencing a huge surge in construction and planning activity. That included monitoring construction at the Leland Olds Station, overseeing transmission planning for the MBPP and then operating and upgrading the William J. Neal plant, newly acquired from Class A member, Central Power.

In a dozen years, the staff at Basin Electric had grown from less than 12 people to 172 by the end of 1973. Still headquartered at the Provident Life Building in downtown Bismarck, Basin Electric staff was scattered throughout three other office locations in the city.

To bring its staff together, Basin Electric planned for a new four-level, 60,800-square-foot headquarters facility, with an innovative design and appearance that focused on energy conservation. It would be built on a 60-acre site in north Bismarck and designed to allow for adding two floors in the future. Built with an REA loan, the $3.1 million structure was to be finished in 1975.

In conjunction with that project, the Cooperative moved ahead with construction of a new transmission and operations maintenance headquarters in Mandan, ND, just across the Missouri River from Bismarck.

Major energy project for Wyoming

With the Leland Olds Station Unit 2 about half complete, a site was selected in 1974 for a 1,500-megawatt joint generating complex, considered an ambitious project for consumer-owned systems in the Missouri Basin region.

After considering 60 sites, the plant and associated facilities would be located in southeastern Wyoming, near Wheatland, a community of 2,500. The power plant and reservoir estimated to cost $700 million was to be built by Basin Electric and the five other consumer-owned power suppliers in the MBPP. The project was expected to provide for the power needs of rural electrics, municipally owned electric systems and public power districts in the region for the period of 1979-84.

A site had been acquired five miles northeast of Wheatland, with more land being sought in Goshen County. Additional land had been purchased to build an earthen dam on the Laramie River about nine miles east of the plant site to develop a reservoir to provide water for the power plant. Soon, the plant was formally named the Laramie River Station, with the water-storage facilities called the Grayrocks Dam and Reservoir.

Basin Electric, the project manager, would become 42.27-percent owner of the project. The other participants include Tri-State Generation and Transmission Association, Denver; Heartland Consumers Power District, Madison, SD; the Western Minnesota Municipal Power Agency, Ortonville, MN; the Lincoln Electric System, Lincoln, NE, and the Wyoming Municipal Power Agency, Lusk, WY.

The project called for construction of the 1,500 megawatts in three stages with the first 500-megawatt unit on line by 1979. The joint power program represented nearly three years of work between the consumer-owned utilities throughout the region. Robert Marritz, MBSG executive director and MBPP management committee chairman, pointed out an "open planning process" was used in which the utilities worked with regional, state and local agencies to plan for the economic, social and environmental impacts from a project this size.

A few days after making a filing with the Wyoming Public Service Commission, representatives of the MBPP held a public meeting in Wheatland to review the project. Soon afterward, an advisory group called the Platte County Task Force was formed to study impacts associated with the giant energy project. Basin Electric wanted to ensure the Wheatland community didn't go through the same disastrous impacts felt by other rural communities where large industrial construction occurred. "Basin Electric, as manager of this project, is most concerned with the impact on the social and economic development of an area as sparsely populated as Platte County," Lloyd Ernst, assistant to Grahl, told local leaders. "We want to be a good neighbor and will do everything possible to see that the social-economic impact will be properly met."

Project sponsors also emphasized their concern to minimize environmental impacts from the development. In fact, a regional environmental advisory committee had been formed that helped pick the site.

Said Grahl: "All of the sponsors serve people who live in the region, many of them in Wyoming. We will do our utmost to keep the air and water clean and restore the land. We intend to work with the state and the local communities on any social and economic problems."

Basin Electric was ready. The Cooperative's leaders knew that preparing for environmental regulations was important, and it would become even more so in the

future, Grahl said, in a later interview. The plant would be designed with environmental controls that would cost $330 million, focused on meeting or exceeding Wyoming and federal air quality standards.

"When we knew we were building the Laramie River Station, we also knew that we would also have to build scrubbers to remove sulfur dioxide from stack gases," Grahl said. "At that time most utilities that had installed scrubbers were having terrible problems with them. Running a scrubber is like running a chemical plant, which is quite different from running a power plant."

Basin Electric sent Kent Janssen, its production manager, and others to visit plants using scrubbers. That resulted in fewer operational problems for the environmental equipment as the plant started up, Grahl said.

Basin Electric used the experience it gained in Mercer County in North Dakota for working with the local community in Wyoming. About two years before construction, the Cooperative's staff began talking with Platte County residents about the project. As a result, the zoning plans and other programs helped to greatly minimize the impact of 2,500 construction workers.

In September 1974, the Wyoming operations office for the MBPP was opened in Cheyenne headed by Ernst. Two new assistants to Grahl were named: Duane Bye, formerly resources and conservation supervisor at Basin Electric, now headed the environmental protection, real property management and energy conservation programs, while Ken Ziegler, formerly area development specialist for the Cooperative, now was the community development and legislative liaison. In addition, Mike Lord, chief plant accountant, was promoted to budget officer.

Negotiations for a fuel supply for the MBPP energy plant were ongoing, with the source likely eastern Wyoming coalfields and transportation by unit trains. As part of that process, Basin Electric and Tri-State joined to form Western Fuels Association in Wyoming. Its primary purpose was to obtain fuel—low-sulfur Western coal—for the proposed generating station.

Western Fuels represented a way consumer-owned systems could pool their fuel needs and better negotiate based on that larger volume, noted Ken Holum, who was named the first general manager for Western Fuels.

With Basin Electric concluding a busy and difficult 1974, Jones told members at Basin Electric's 13th annual meeting: "The business of power production and delivery becomes ever more complicated. Nevertheless, we should not be discouraged." Instead, members should be encouraged by the fact that Basin Electric and its partners have been able to overcome problems and effectively manage a rapidly expanding power supply program.

Coal gasification pioneer looks for partner

Just a month later, Jones joined with Arthur Seder Jr. of American Natural Gas Company of Detroit to announce plans regarding a possible partnership for coal gasification and electric power generation.

An American Natural Gas subsidiary, Michigan-Wisconsin Pipeline Company, had already announced plans to build the nation's first commercial-scale plant, converting lignite into natural gas to be piped to industrial customers in Michigan and Wisconsin. That facility was to be built near Beulah, and, if negotiations were successful, an electric generating plant of about 880 megawatts would be constructed on an adjacent site.

The joint announcement came about two years after Seder had met with North Dakota Gov. William L. Guy to survey the political landscape. The company had continued its efforts to build a flagship coal gasification plant in North Dakota. For the large amount of power needed, it made overtures to investor-owned utilities in the region, but the private power companies weren't interested.

With Basin Electric working to meet growing member needs, Seder approached the Cooperative. The two organizations hired an engineering firm in 1973 to analyze the feasibility and cost savings of a joint project. Plans included a single coal mine and side-by-side sites with a shared rail line, coal delivery and water pipeline systems.

Kent Janssen, Basin Electric's manager of production who led negotiations on the project, later said American Natural Gas had originally planned to rebury small lignite particles—coal fines—that couldn't be gasified. However, he said, under a joint project, those fines could be burned, producing electricity at a new generating plant.

A joint project would reduce the environmental impact, save coal and water, and lower construction costs. It appeared to be a win for all concerned.

About one-third of the plant's output would be used by the gasification plant, with the majority of power available to meet the growing needs of Basin Electric members, Jones said, at Basin Electric's 1975 annual meeting.

It was a promising start for two energy projects, but, to the chagrin of Basin Electric and others, environmental concerns and financing problems caused delays of about six years before the first ground would finally be turned for the coal gasification plant.

Growing costs for a growing G&T

For the Cooperative and others, higher costs were accumulating, too.

The newest would be a new tax on coal. With large-scale lignite development facing North Dakota, Gov. Arthur A. Link had been promoting a cautious, go-slow approach for energy. In his message to the 1975 Legislature, he said a severance tax should be passed to reimburse the people of North Dakota for this "one-time harvest" of its natural resource. He called for a graduated severance tax on mined lignite as well as an energy conversion tax on generating units developed after Jan. 1, 1975.

The governor's tax proposals would hit Basin Electric hard, increasing its costs up to 10 times for lignite for the two Leland Olds units. The Cooperative agreed a severance tax was justified to compensate for losing a nonrenewable resource. However, Ken Ziegler testified the tax should be about 25 cents per ton and not a percentage rate because of the difficulty caused by using varying prices of coal.

Instead, the Legislature passed a 50-cent per-ton severance tax. With an escalator clause, the severance tax would increase to more than $1 per ton over the next 10 years. Legislators also approved a quarter of a mill per kilowatt-hour tax on the electricity produced and a quarter of a mill per kilowatt-hour on power plants with a capacity of 120 megawatts or more. With those taxes becoming law, Basin Electric directors voted a mid-year wholesale rate increase of about 10 percent in 1975. The mining company would be passing the higher severance taxes on to Basin Electric, which had no choice but to pass that on to its members.[2]

Record demand by members for power

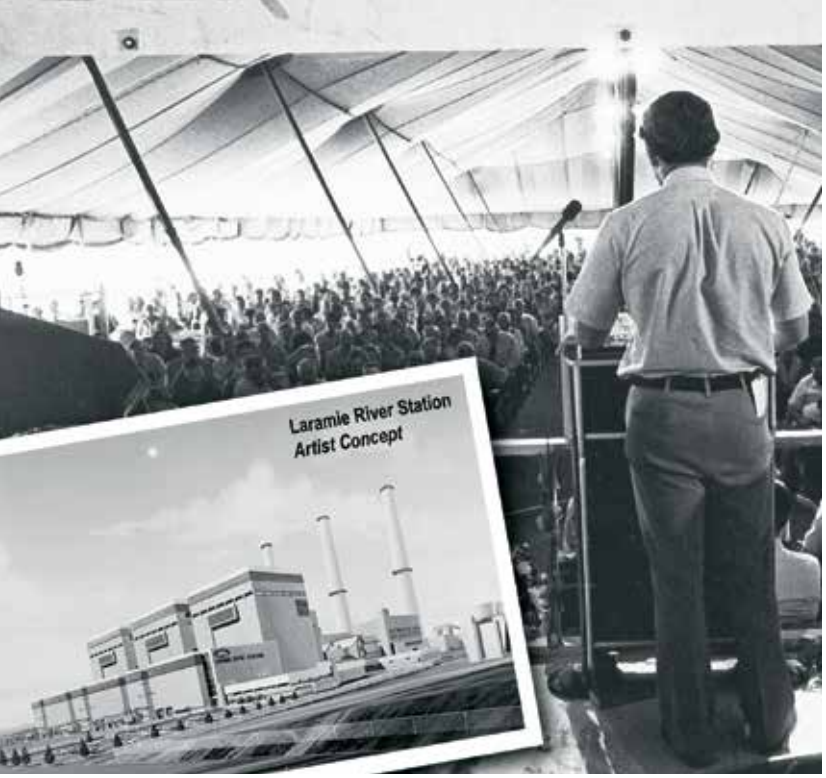
Members, meanwhile, were recording ever-growing demands for wholesale power. Increased irrigation usage and more power for farm use pushed demand in August 1975 to 466 megawatts, surpassing a record set during a blizzard just seven months earlier. Just as the Leland Olds second unit turbine was rolling for the first time, it appeared the Cooperative's generating resources would be pushed to their maximum in a few months.

David Hamil served as REA administrator for a record 14 years and three months.

As the Leland Olds Station Unit 2 began sending power into the Joint Transmission System in 1975, the rate of member load growth reached new highs, climbing more than 40 percent in the past year. "This rate of increase illustrates why Basin Electric has had to expand rapidly and why we are expanding our planning, designing and construction activities and staff," Grahl said at the 1975 annual meeting.

In the summer of 1976, about 3,500 people turned out for the dedication of the 440-megawatt second unit at the Leland Olds Station near Stanton. REA Administrator David Hamil praised the unit's completion, saying he was "proud to have participated in the early beginnings

2. "Grahl reviews 1975 operations," *Report,* Basin Electric Power Cooperative, 3.



Craig Thomas, general manager, Wyoming Rural Electric Association, addresses the ceremony to dedicate Unit 1 of the Laramie River Station on Sept. 6, 1980. Inset is an artist's concept of the completed project. Thomas later served in both the House and the Senate of the U.S. Congress until his death in 2007.

of this venture. This type of forward-looking planning and initiative on the part Basin Electric's members has made the system a pacesetter in many areas vital to the progress of rural electrification."

With this new unit, Basin Electric was compelled to join the Mid-Continent Area Power Pool or MAPP. The Cooperative was required to take this step to have adequate generation reserves to provide backup in the event of a generating unit outage. So, under the REA loan, Basin Electric needed to join MAPP.

Groundbreaking for a giant Wyoming project

Shortly, the focus shifted to Wyoming where 1,600 people observed the groundbreaking for a much larger energy project, the MBPP's $1.6-billion development of the Laramie River Station near Wheatland.

At the event, Hamil praised the efforts to involve the local community in the project. And Wyoming Congressman Teno Roncalio cited the planning efforts involved. "The cooperation between project officials and the local people and the financial assistance from the project are excellent examples of what can and must be done if Wyoming communities are to successfully solve the problems energy development will bring," he said.

Besides the three 550-megawatt units, the joint energy project included the Grayrocks Dam and its 100,000-acre-foot reservoir on the Laramie River plus 600 miles of extra-high-voltage transmission lines.

It appeared these new energy resources would quickly be loaded. In January 1975, the Cooperative's members achieved another record wholesale power peak and even higher numbers appeared likely in the near future. Load forecasts by Basin Electric's member systems predicted growth of more than 9 percent annually into the 1980s.

As a partial solution, Basin Electric planned to add two oil-fired generating units at Vermillion, SD, designed to meet peak energy demands in the summer and winter. Though producing higher-priced power, the peaking units would be more economical than installing a small baseload generating plant that would be used only 1,500 to 2,000 hours per year, explained Howard Easton, manager of Planning and Marketing. And they would be available by the summer of 1978, much sooner than coal-based units.

New projects increase workload

Meanwhile, the workload at Basin Electric continued to grow as new generating units and transmission miles were added. Only a third of that work was devoted to operations; the rest fell under the category of future power supply planning, design and construction. Basin Electric was edging toward a massive construction period.

Staff numbers had reached 375 by 1976, with 195 at headquarters and 180 operating and maintaining power plants and transmission facilities. With that growth, a personnel department was organized under Richard Weber.

Grahl put the staff growth in perspective. In its first 14 years, the Cooperative grew to 656 megawatts. However, he wrote, over the next eight years, Basin Electric's load was projected to climb to 1,600 megawatts just for member cooperatives, in addition to managing another 1,100 megawatts for other systems.

Much of that workload had been devoted to obtaining a federal Environmental Impact Statement (EIS) and more than 40 other permits for the Wyoming mega-energy project, in addition to planning a new generating station in North Dakota.

For two years, cooperative staff had worked on preparing the $1.2 million EIS for the MBPP project. The report went to the REA with the final EIS clearance on July 5, 1976. A week later, construction on the Laramie River Station project got under way.

In North Dakota, work was devoted to what had been called the Beulah Project. Named for a valley close to where it was located northwest of Beulah, the Antelope Valley Station, featuring two 440-megawatt lignite-fired generating units, would be built alongside the coal gasification plant proposed by ANG Coal Gasification Company.

ANG was a subsidiary organized by American Natural Resources of Detroit specifically to develop a coal gasification project. Acting on predictions of a natural gas shortage in the late 1960s, American Natural Resources had looked at several options to provide natural gas for its customers in Michigan and Wisconsin, finally settling on a plan to gasify lignite coal in North Dakota.

A joint agreement signed by both parties required Basin Electric to provide 160 megawatts of power to the gasification plant. The Cooperative was assured of a plant site as well as a 35-year supply of lignite for Antelope Valley Station, regardless of what happened to ANG's plant. That, said Janssen, was a huge asset for the Cooperative.

ANG, however, had trouble coming up with a construction timetable because of inflation, funding guarantees and other issues. It finally proposed that a first phase of the gasification plant—half the original size—would start construction in 1977 with completion by 1981. The second phase would begin "sometime subsequent to 1981," according to reports. For Antelope Valley Station, the timetable called for first unit construction in 1978 and completion in late 1981; the second unit's, construction would begin in 1980 with commercial operation by 1984.

But there were continued financing snags, and the timetable for ANG's plant slipped further. Construction finally began in 1980.

With this concentration of energy plants, questions arose about impacts, especially in what became known as "coal country" in central North Dakota.

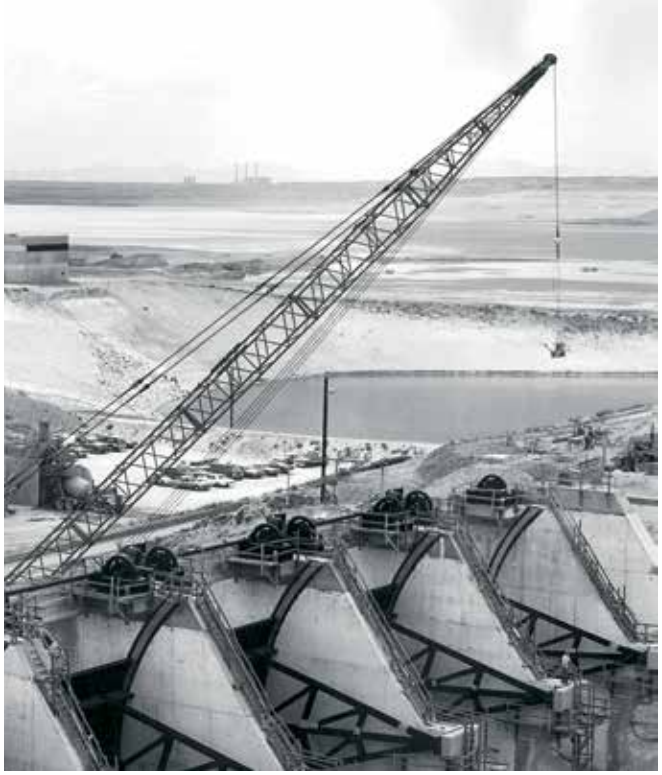
The generation and gasification facilities were to be fed by a huge new surface mine and a gigantic pipeline taking water from Lake Sakakawea. In addition, there was a third energy facility near Beulah, a 440-megawatt plant called Coyote I developed by a consortium of private energy companies including Otter Tail Power Co. and Montana-Dakota Utilities Co.

To provide answers for local communities and the state of North Dakota, Basin Electric staff met with Mercer County leaders to provide its study of the socioeconomic impacts from all of the proposed energy development. With construction and other workers, it projected that the county's population could double by 1980.

Unfortunately, inflation also was causing problems across America. Inflation was fueled by the latest in a series of oil cartel-driven energy crises that repeatedly gripped the nation. Costs were spiraling upward, a huge problem for major industrial developments.

Lawsuit over water and endangered species

There was more trouble brewing for Basin Electric and its partners in Wyoming. Just as construction on MBPP's huge energy complex was hitting full steam, the National Wildlife Federation and state of Nebraska filed a lawsuit seeking to halt construction of the Grayrocks Dam and Reservoir, based on the 1969 National Environmental Policy Act. The suit alleged the EIS was inadequate, as operating the dam would jeopardize water flows from the Laramie River, adversely affecting the habitat of the endangered whooping crane downstream on the Platte River in Nebraska. The National Audubon Society and several other organizations joined in the suit filed against the Army Corps of Engineers, Basin Electric and the other MBPP participants. Specifically, it sought to suspend the '404 permit' (a permit needed for construction and other activities occurring in wetlands



Construction of the Grayrocks Dam provided a water supply for the Laramie River Station, which can be seen faintly in the background. The photo shows radial gate installation for the spillway, which took place in 1980.

or federal waters) issued by the Corps a month earlier allowing the construction of the Grayrocks Dam and Reservoir.

Win Curtiss, Basin Electric manager of Information Services during that period, pointed out the problems for MBPP. "As we approach 1978, seven years from the time the project was conceived and initiated—16 months into construction and $139 million in actual expenditures—the project has not yet received final approval," he said. "That is far too long a procedure for a nation locked in a desperate energy crisis and far too costly a procedure for the consumers who are to receive power from the project."

A federal judge in October 1978 agreed with the objections to Grayrocks and halted its construction, now about 25 percent complete. Grahl called the decision "a victory for the National Wildlife Federation, the Audubon Society and the Governor of Nebraska, … but a severe and expensive defeat for the consumers in the region."

Work could continue on the power plant itself. Within a few weeks, a federal appeals court judge stayed the injunction, allowing continued construction of Grayrocks.

Negotiations proved fruitful. A compromise and settlement came in December 1978, giving at least preliminary clearance for the energy project to move ahead as scheduled. The agreement required the MBPP to set up a $7.5-million trust for protecting and maintaining the habitat of whooping cranes and other migratory birds in the Big Bend area of the Platte River. It also specified required water flows from the Grayrocks Reservoir, including protecting water supply for the power plant and putting no limits on its operations.

The out-of-court settlement was, in effect, given official endorsement shortly thereafter when the Department of Interior's Endangered Species Committee specified the MBPP development should be exempted from the Endangered Species Act.

C. R. Thiessen was Basin Electric president from Dec. 16, 1976, to Dec. 12, 1980.

C. R. Thiessen, the new Basin Electric president, said he hoped the settlement had a larger meaning. Hopefully, it will be more than an end to this litigation but also contribute "to the reconciliation of an escalating conflict between the environmental movement and those who are responsible for supplying the electricity required by all consumers," Thiessen said. "For this is a reconciliation that must be achieved, in this region and in the nation, if we are to maintain both a healthy environment and a healthy economy."

The environment also was at the heart of the message by North Dakota Gov. Arthur Link, who spoke at the July 1977 groundbreaking for the Antelope Valley Station. Link said the project carried a commitment of $156 million for environmental equipment and controls, which would make the plant "the most efficient, least polluting lignite-fired generating station technically

feasible. This commitment to the preservation of an environment we value is an investment in tomorrow."

Link also pointed to the ANG and Basin Electric agreement to co-develop the gasification and generating plants. "The benefits and economies achieved may serve as a model for years to come," the governor said. "This means maximizing the energy value of our natural resources and minimizing the environmental, social and economic impacts."

Obtaining right-of-way agreements from landowners for transmission lines is a key issue for electric utilities. For the Antelope Valley Station, some 330 miles of high-voltage transmission lines had to be constructed. The Cooperative's process for acquiring right-of-way proved very successful, an achievement that George Paraskeva, chief engineer, said was due to providing information and making regular personal contacts with landowners.

Impact planning earns honors and acclaim

In the early 1970s, Basin Electric became involved in a special program to spur housing development for low- and moderate-income families in rural areas.

Called the People's Housing Program, this demonstration project funded through the U.S. Department of Housing and Urban Development had a huge impact. It resulted in the formation of 35 county, multi-county and state housing authorities and, eventually, 5,000 new homes in the region.

That was important enough, but the experience proved valuable for Basin Electric in the subsequent planning for giant power generation projects in rural areas. "The experience gained by Basin Electric in the regional housing assistance program has been utilized to a high degree in planning for social and economic impacts associated with construction of its power facilities near small rural communities," Basin Electric reported in 1978.[3]

And it was this impact-alleviation work done in advance of actual construction that earned honors and acclaim for Basin Electric and its energy project partners. Basin Electric became a leader in helping communities plan for these gigantic construction projects because it had become aware of other major projects where the lack of planning caused severe problems for communities, taxing the existing schools, housing, water and sewer systems, day-care options, transportation, churches and a multitude of other areas. "In the 1960s and early 1970s, there were some terrible conditions created when some utilities built power plants across the country and did not plan for the community impact," said Ken Ziegler, in a 2007 interview. Ziegler, who retired as manager of Communications and Government Relations in 1998 after a 30-year career with Basin Electric, said the credit for this pioneering effort should go to a number of talented individuals working for Basin Electric then.[4]

"We set about doing things differently," he said. "We decided we would invest in those communities and help develop leadership there, so that they could create their own facilities, and we would assist in financing or, in some cases, pay for the facilities."

These development efforts not only benefited the community, the focus was to make the community better, Ziegler pointed out, "so that our workers and their families would be happier and be better employees and residents of those communities."

It required Basin Electric's leadership to take a risk with the Cooperative's pocketbook. The board of directors had approved a variety of improvements, including, a housing project called Black Mountain Village in Wheatland, WY, and Prairie Hills Subdivision in Beulah, ND, for construction workers.

"Basin Electric management and directors were criticized by some for spending money wildly on the communities," said Ziegler. "It was hard, but it was the right thing to do. As a result, Basin Electric developed a reputation as a thoughtful utility that planned for the future and did the right thing willfully. They weren't dragged to the doorstep of impact planning, they led the way to it and eventually, legislation appeared all over the region requiring the kind of things that we were doing."

3. "Impact Planning," *1978 Annual Report.* Basin Electric Power Cooperative, 41.

4. Ken Ziegler, interviewed by Tracie Bettenhausen, July 2007.

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Black Mountain Village *and the* Missouri Basin Power Project

In July 1974, a site near the small Wyoming community of Wheatland had been selected for the 1,650-megawatt Laramie River Station and associated facilities for the Missouri Basin Power Project (MBPP).

For Wyoming residents, the prospect of a huge construction facility carried quite negative overtones at the time. "Wheatland sat between two boom town horror stories, where energy projects moved in and overwhelmed the community: 150 miles north, Gillette, WY, had become a textbook case of what can go wrong, when oil and coal projects turned the area into a confusion of strip development, billboards, traffic jams and house trailers; 250 miles west of Wheatland, tent villages of miners and power plant construction workers grew around Rock Springs, WY, straining the town's school system, hospital and police force."[1]

Meanwhile, back in North Dakota, Basin Electric General Manager James Grahl walked into the office of his assistant, Lloyd Ernst, to talk about the preparations for the project after the site had been selected. Grahl's message was "the process of helping Wheatland prepare for plant construction was already several months late, and to ask Ernst to move to Wyoming as Missouri Basin operations manager."

1. "Wheatland's New Neighbor: A town and a co-op discover that a power plant doesn't have to be an enemy," *Rural Electrification,* March 1982, 20.

Black Mountain Village, a 185-acre subdivision, consisted of about 1,000 housing units including mobile homes, campers, "bachelor" quarters, single family houses, and a recreation center, cafeteria, and shower and laundry facilities.

Basin Electric, as project manager and 42-percent project owner, would lead the construction for the other project participants. Soon, Basin Electric's experience in helping rural communities would prove invaluable for the project and the Wheatland community.

"We had some real nightmares thinking about those other towns," said Ernst, in the 1982 *Rural Electrification* story. "We decided we didn't want another one of those situations that can literally destroy the social fabric of a community."

Moving to Wyoming in 1974, Ernst got the impact-planning ball rolling. By August 1974, he had helped organize the Platte County Impact Alleviation Task Force, made up of local community leaders trying to anticipate the problems as a construction labor force of 2,000 would settle in temporarily and then disappear. In their place, a permanent work force of about 400 would remain, along with a $1.6-billion coal-based power plant.

Together, this group of local leaders and MBPP representatives plowed new ground as they worked on trying to fix problems before they could occur. In this process, state and community leaders were pleasantly surprised. MBPP "had a very responsible attitude, particularly in planning for socioeconomic effects," said Rick Moore, director of the newly formed Wyoming State Industrial Siting Council in a 1982 story. "Most of our disagreements were not over whether something needed to be

done, but over how to do it. It was a refreshing change from some other companies."[2]

And there were many changes coming from the community-directed Task Force: newly paved streets, new elementary and high school buildings, a new bank and supermarket, a new mental health clinic, a new senior citizens center and a new water tower.

But the showpiece was a 185-acre subdivision that was purchased and developed by MBPP to house construction workers named Black Mountain Village.

"By giving the workers a place to live in town, there was less of a them-versus-us attitude than there would have been," said Grahl in 1982.

The 12,900-square-foot, family-focused recreation center served as the social center for Black Mountain. Construction workers and family members gathered there for pool, cards, indoor swimming, sauna, weight lifting, exercise class, crafts and special youth activities. Outdoor recreation facilities were provided for tennis, basketball and other sports.

Bob Valeu, who served then as Basin Electric's impact planning coordinator, said Black Mountain was a model of planned unit development. "The development was conceived through the open planning process in that the design and types of housing that were to be constructed weren't just one person's idea," he said. As part of that process, the MBPP surveyed local residents as well as construction workers at similar projects in the region.

By the mid-1980s, the MBPP's commitment to the impact in Platte County totaled nearly $30 million, including grants, investments and loan guarantees to the community.

The efforts by Basin Electric and the MBPP were cited in a subsequent study by the Electric Power Research Institute (EPRI). "Basin Electric has established itself as a forerunner in implementing a successful socioeconomic impact alleviation planning program that incorporates public involvement," the study noted. "Joint commitment by the citizens and the MBPP to the proposition that the growth could be managed was well rewarded and should serve as a paradigm for other communities in the future."

By mid-1976, that paradigm was transplanted to Mercer County in the growing energy area of western North Dakota. There three major energy projects had been announced: Basin Electric's 880-megawatt Antelope Valley Station, the 440-megawatt Coyote Station being developed by Otter Tail Power Company, Montana-Dakota Utilities Co. and others, and the coal gasification plant by American Natural Gas Co.

2. "Wheatland's New Neighbor," 19.

Prairie Hills Subdivision *and the* Antelope Valley Station

In June 1976, the Mercer County Impact Alleviation Task Force was organized, following the precedent of the Platte County group in Wyoming. Much of the impact assessments of the three energy projects was accomplished by the Inter-Industry Technical Assistance Team (ITAT), which was formed by Basin Electric and the other energy companies building in Mercer County.

Similar to the Wyoming model, a development to house construction workers was planned in Beulah. Included in the 35-acre Prairie Hills Subdivision were more than 400 motel-like bachelor units and 117 spots for camper vehicles. In addition, a dining hall and recreation center included a Laundromat, TV room and other indoor game rooms. Other parts of the impact planning included expanded education facilities, senior citizen housing, and upgraded water supply and utility facilities.

Planning mirrored the Wyoming approach by involving the public in determining the needs and projects. Basin Electric's work in assessing the community impacts and helping in planning drew the praise of officials in Mercer County. "The task force, through the efforts of Basin Electric

Prairie Hills subdivision housed much of the temporary workforce involved in the construction in Mercer County, North Dakota in 1978-1983.

and its community development staff, has become a reality," wrote then task force co-chairmen Curt Brekke Jr. of Hazen and Charles Theilander of Beulah. "This is due in part to the farsighted vision of the management of Basin Electric and in part to the understanding staff people working in Mercer County." Staff members cited by the task force were Ziegler, Bill Schott, community development coordinator, and Gary Jacobson, Basin Electric's representative in Mercer County.

In the construction boom years of 1978-83, the county's population more than doubled (about 14,000 in 1983). Job numbers in the county quadrupled while the number of local businesses tripled.

In that peak period, the energy projects employed more than 4,000 construction workers, with about 1,200 workers staying at Prairie Hills. Nearly half commuted from Bismarck and Mandan or were permanent residents in the area.[3]

The aftermath

The need for these landmark developments slowly diminished as the energy projects were gradually finished and began producing power for rural consumers.

By the early 1980s, Basin Electric sold its interest in Prairie Hills in North Dakota to ANG Coal Gasification Company, which used the development for its operating employees at the gasification plant.

At about the same time in Wyoming, all the bachelor units at Black Mountain Village were sold along with the mobile homes and family residences. The dining hall was sold to the local school district, and the area was rezoned for a mobile home subdivision.

Both of the task forces were disbanded as the projects moved into operation.

3. "Construction workforce increases, many commute," *Report,* Basin Electric Power Cooperative, August 1982*,* 7.

The impact-planning effort proved so successful in Wyoming it was considered a model for others around the country. And, because of that success, Basin Electric subsequently used it as a template for the Antelope Valley Station in North Dakota.

Now Basin Electric had two major construction projects under way. At the peak, more than 3,400 construction workers were at work, turning these open areas into energy-production facilities. Those employment figures made Basin Electric the largest employer of construction labor in the Midwest for that period.

Inflationary costs cause big rate increases

With those enormous developments, the Cooperative experienced a huge increase in its budget reaching $795 million. Of that, 89 percent—or $711 million—was for construction. Interest rates also continued to skyrocket, climbing 145 percent in this period, from 6.7 percent in 1977 to as much as 16.4 percent by 1981.

As the 1970s came to a close, the impact of inflation, multiple construction projects and growing member needs put Basin Electric management and directors again in an uncomfortable position. The Cooperative no longer had access to low-interest loans like those used for the Leland Olds Station. Instead of 2- or 5-percent loans, the interest rates for the loans for the Laramie River Station were in the 9-percent range.

So, the wholesale power rates for 1980 increased by nearly 30 percent, the single largest increase in one year in the Cooperative's history. The rates now were nearly 24 mills—or 2.4 cents—per kilowatt-hour. Interest payments on debt accounted for about 75 percent of the rate increases during this period.

Unfortunately, the rate story would be only slightly better in the next several years, with annual hikes averaging about 26 percent for wholesale power.

Despite those challenges, Basin Electric continued its efforts to keep up with the seemingly ever-increasing needs of its member systems. In mid-1979, hearings were held in Bismarck and Cheyenne, WY, for preliminary siting of what was called the Sunrise Project. The project involved coal-based generating facilities that would meet the power needs after the Antelope Valley Station, that is, for 10 years starting in 1986 for Basin Electric members as well as for other systems involving 1.5 million consumers. Eventually Sunrise would be scrubbed largely because forecasts showed a lower electricity use by Basin Electric's membership.

Power forecasts start declining

For years, member growth had been occurring at a high rate. However, a member power requirements study released in 1980 showed annual growth at 6 percent annually through 1988. This represented a drop of 2.5 percent from a previous study and the first time a projected load growth by members had declined.

The lower rate was attributed to the sagging farm economy, high interest rates, and increasing fuel and other costs, a decline in irrigation development and conservation efforts by local cooperatives and individual consumers. With this latest study, Basin Electric directors postponed by more than two years the commercial starting dates for the two units of Antelope Valley Station as a means to moderate costs.

The issue of power planning had become a complicated—and thorny—issue. Howard Easton told members it was now taking 10 to 13 years to bring a coal-fired generating unit on line, compared to five years a decade before. Besides studies and permitting procedures, major plant equipment must be ordered seven years before plant completion, he said.

"All these costly decisions must be made early, despite the fact that many things influencing electrical use can change." Those include, he said, high interest costs, depressed farm markets, fuel oil prices, long-term weather changes and development of yet-unknown energy-consuming products, plus other snags such as litigation.

Power supply planning had become vastly more complicated, Easton said. "What's the trend going to be in 1989?" he asked, in a 1981 interview. "That is what I need to know right now."

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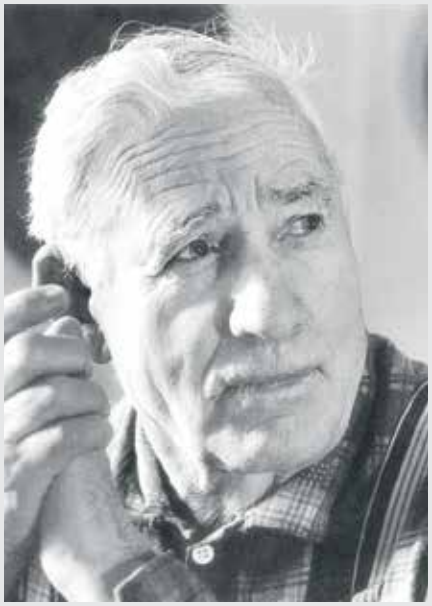
Art Jones: *A quiet farmer who led by example*



Art Jones

The following story is a pared down version of the one that appeared in the April 1985 edition of Basin Electric's Report magazine, following Jones' death at age 80 on March 18, 1985.

In the winter of 1941, Art Jones called a meeting of his farmer neighbors to see if they were as interested as he was in forming a rural electric cooperative that could secure a loan from the REA to finance construction of electric distribution lines.

From that night forward, he devoted the rest of his active life—more than 40 years—to developing rural electrification and to other issues important to improving the quality of life for rural people.

The name Art Jones has become synonymous with rural electrification and the cooperative movement in the Missouri River Basin region.

Jones was a founder of Basin Electric Power Cooperative and the first president of its board of directors. He served on the Cooperative's board from 1961 to 1979, and as its president from 1961 to 1976.

He was born at Spain, SD, on April 24, 1904, and his home for his entire life was the family farm in Marshall County near Britton, in northeastern South Dakota.

After helping to organize Lake Region Electric Cooperative for his home area in 1941, Jones repeated this process twice—in organizing East River Electric Power Cooperative in 1949 and Basin Electric in 1961. He was on the East River board of directors from 1954 to 1980, serving as its president from 1958 to 1973.[1]

Leland Olds, a former chairman of the Federal Power Commission, had been hired by the rural electric cooperatives in the region to help them plan the development of supplemental power supply.

1. Groton Generation Station Unit 1 was dedicated in honor of Jones by request of the Basin Electric board in 2008.

In a 1980 interview, Jones recalled: "Speaking at the Mid-West Electric Consumers Association (MECA) meeting in 1959, Olds made it pretty clear to us that the consumer-owned systems should take advantage of giant power—large scale generating and transmission systems. He tried to make us see that building one large plant was more economical than several small ones."

During his rural electric leadership, Jones was also politically involved, serving nine terms in the South Dakota State Senate beginning in 1950, including service as floor leader for his party. In his legislative career, Jones was a strong advocate of people-oriented programs.

He was a director of Mid-West Electric Consumers Association from 1958 to 1979. Jones was also in the leadership of local organizations including the Farmers Union and the farmers elevator cooperative.

His many contributions to his community and to rural electrics did not go unnoticed for which he received a litany of regional and national awards.

In an interview before Jones' death, James Grahl, Basin Electric's first general manager, credited Jones for leadership based on what was best for the Basin Electric membership as a whole. "At the risk of slighting other people, I would say that the one person primarily responsible for this is the first president of Basin Electric, Art Jones. ... In his quiet manner,

Tributes to Art Jones

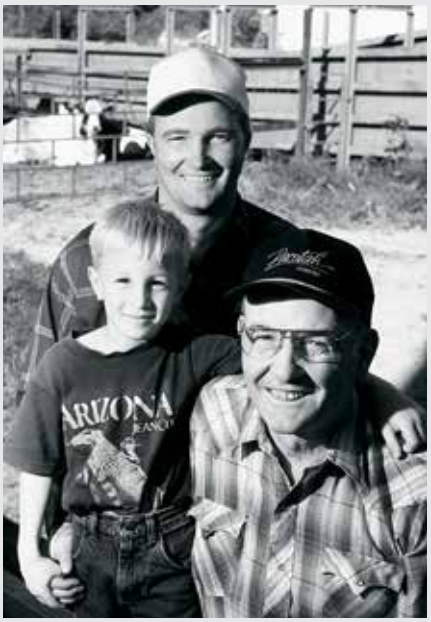
"To Arthur Jones - Cooperative Leader by Example. Restless Seeker of the Common Good. Finder of Answers. Foe of Inequity. Lover of Justice. True Believer in the People. Idealist Doer. A Man Whose Greatness is Measure in Our Love for Him." *(From Basin Electric Members, Board and Employees, 1977).*

"He led Basin Electric to become not just a power supplier but also an effective regional organization committed to social concerns of people—in areas such as natural resource conservation, mined-land reclamation, environmental protection and technical assistance for building decent rural homes—areas where Basin Electric pioneered in the truest sense of the word. We all are indebted to him."
(C. R. Thiessen, who succeeded Jones as Basin Electric president in 1976, Basin Electric Annual Report, 1977)

"Arthur (Art) Jones of Britton was one of the foremost leaders of the rural electric cooperative movement in South Dakota, regionally and nationally." *(South Dakota Rural Electric Association Hall of Fame induction, 1985)*

"His manner was quiet, determined. He was a man sure of himself and his beliefs; yet, his was an open mind ready to learn…. He was always part of a team, but his leadership was always in evidence. On many occasions, the rural electric systems of this region have celebrated, for good reasons, the ideas of Leland Olds. Those ideas became reality in this region because Art Jones understood them, believed them, and devoted an important part of his life to them. His good works are done, but he will always be remembered by those who knew him and his immeasurable contribution to this region."
(Virgil Fodness, president, East River Electric Power Cooperative, 1985.)

*"*He wasn't a real educated man, but he was a pretty smart guy. He really could read and was hard working…. He was always thinking of things. Quiet kind of a guy. He didn't do a lot of arguing, usually he'd listen and then said what he thought." *(Curt Jones, Art Jones' son, interview with Kathi Risch, 1999)*



This photo used for the cover of the 1999 annual report shows Logan, Kirk and Curt Jones, the great grandson, grandson and son of Art Jones, carrying on with rural living made better by pioneers like Art.

he strongly established the way the board was going to handle the affairs of Basin Electric."

In his 1980 interview, Jones said he believed rural electrics will face challenges in the future greater than those in the past, but that we ought to have no fear that we can meet them. "People working for the benefit of rural people make a force that is overwhelming. Each of us is a little cog in the wheel and there's no stopping what we can do. The programs we have started will go on through succeeding generations. There is strength in the rural community to meet the challenge of the day and the time."

More troubles come from Washington, D.C.

More troubles for Basin Electric and rural electrics came from Washington, D.C. in March 1980 shortly after President Ronald Reagan took office.

The fiscally conservative Reagan vowed to shrink government and reduce support of private industry. Specifically, his administration sought to end financing through the Federal Financing Bank (FFB) for generation and transmission cooperatives like Basin Electric, reduce 5-percent funding for distribution cooperatives and erase all 2-percent financing for small cooperatives. Eliminating FFB financing would reduce federal spending, the Reagan administration claimed.

Harold Hunter, the new head of the REA, who succeeded Robert Feragen, an early employee of Basin Electric, acknowledged a likely impact on rural electric rates but apparently felt there was a greater good. "Changes in financing will probably encourage higher rural electric rates, but there is a strong motivation to relieve our economy and industry of the onus of excessive regulations," Hunter said, in an interview while touring Basin Electric's facilities.

Basin Electric and others in the rural electric industry charged that the changes would simply drive up electric rates for rural Americans. Grahl said the proposals "will increase the cost of producing food in one of the nation's principal agricultural regions and also increase the cost of producing energy in the nation's remaining coal fields and one of its most rapidly developing oil areas."

Robert Partridge, executive vice president of the NRECA, took issue with the spending claim: "If all REA loan programs were frozen today, it wouldn't save the government a dime."

The loss of FFB financing was especially problematic for Basin Electric. Loans guaranteed through the REA, but obtained from Wall Street would be about 13 percent. At the time, Basin Electric had nearly $900 million in loan guarantees pending, and, without FFB financing, the cooperative projected its interest rate would be about 1.5 percent higher, costing $300 million more in interest payments.

Financing innovations pursued

Basin Electric had about $3 billion in energy developments financed for the short term that it needed to convert into long-term financing. With REA financing in question, Basin Electric was exploring financing avenues outside of the federal government.

Based on federal legislation passed in 1975, Basin Electric began using the St. Paul Bank for Cooperatives for interim financing. Tax-exempt revenue bonds became another vehicle for long-term financing of pollution control equipment at the Laramie River Station.

But it was in leveraged-lease financing that Basin Electric led other generation and transmission cooperatives in the nation. "One of the most innovative forms of financing to offer future interest cost savings of this magnitude is leveraged leasing," Arnold Ketterling, Basin Electric manager of Accounting and Finance, reported to the membership. Under this financing option, private investors purchase a power supply unit and lease it back to the supplier, such as Basin Electric, to operate over the life of the lease. At the lease end, Basin Electric could decide to set up another lease or buy back the facility at fair market value, Ketterling explained.

Basin Electric, as a taxable cooperative, qualified for investment tax credits, but had minimal tax liability because it allocates its margins—revenue in excess of expenses—to its member cooperatives. So, Basin Electric couldn't use the significant tax benefits, accelerated depreciation, and investment and energy tax credits available in the early 1980s.

Another financing option was safe-harbor leasing. Under tax laws passed in 1981 and 1982, Basin Electric could sell its unused tax benefits to other entities, which then could reap the tax benefits. Under those changes, only the tax title is sold, providing the cooperative a cash down payment for its tax benefits. Basin Electric would retain ownership and control of the facility that was safe harbor leased. That helped to allay fears by members about losing control of facilities they owned. This financing option was open for just two years, during which Basin Electric negotiated nine safe-harbor leases related to several generation and transmission projects that netted $281 million.

In late 1981, Basin Electric formed its first subsidiary, Basin Cooperative Services, with the primary purpose of purchasing and operating the Glenharold Mine fueling the Leland Olds Station.

With this new subsidiary, Basin Electric could more efficiently manage non-electric operations. The issue of owning the mine arose when Basin Electric and Consolidation Coal Company (CONSOL) couldn't agree on a new fuel-supply contract. With a stalemate, CONSOL proposed Basin Electric purchase the Glenharold Mine, its equipment and the company's Dakota Star reserves about 10 miles from the current mine. In total, the two coal areas represented about 130 million tons of recoverable lignite.

Basin Electric directors reasoned that proposal would give the power plant a long-term fuel supply, better quality control and more control of the mine operation and financing. As of January 1982, the mine changed hands, which once again followed a vision of trying to control costs from the mine mouth to the meter.

At the outset of the 1980s, environmental regulations moved into the spotlight for the U.S. energy industry, while a nationwide recession began. And both put rural electric consumers at risk.

In 1982, Congress began a review of the 1970 Clean Air Act that set maximum levels of pollution to maintain air quality that won't harm humans. Basin Electric and its members supported the Clean Air Act as passed, but there were concerns that change in the standards might delay or prevent a possible third unit at the Antelope Valley Station.

This issue, which had the potential for significantly increasing power costs, would hold the attention of America and the energy industry for years.

Recession hits rural America hard

On the economy side, inflation topped out at 13 percent at the start of the 1980s, and America entered a recession that hit agriculture and rural America hard for several years. Farmers saw high interest rates and low commodity prices, a double economic hit for agricultural producers. Nearly a quarter of all U.S. farms were classified by the federal government as either financially weak or as being "marginally solvent." Foreclosures of family farms began throughout the country.

For Basin Electric, this slowdown translated into dropping wholesale power sales and lower-than-forecasted member electric loads. The Cooperative's progressive financing program helped to shore up its finances for the time being. Another mitigating factor: the size and diversity of the membership service area, giving Basin Electric more stability and balance in its wholesale power sales and financial outlook.

By the end of 1982, the last of the three units at the MBPP's Laramie River Station were producing power, and by July 1984, the first unit of the Antelope Valley Station in North Dakota would be in commercial service. Even as the coal gasification plant began to take electricity from the first Antelope Valley unit to churn out natural gas in mid-1984, it was clear Basin Electric had built significant power generation surplus to member needs.

To help counter the lower growth, Basin Electric directors approved a cooperative-wide power-marketing program.

Members are competing against other forms of energy in the region, said Win Curtiss, Basin Electric communications manager. "To just say, 'Here's electricity at the lowest possible cost,' is no longer sufficient," he said. "The co-ops need to be able to say, 'here's a product, a service with a vast array of uses … for your benefit.'"

With this program and a series of new special rates, Basin Electric launched an effort to whittle away at its troublesome power surplus. Howard Easton's marketing area focused on selling surplus blocks of capacity to other utilities for defined periods, so that they could be brought back for the members' use when needed.

For example, Montana-Dakota Utilities Co. of Bismarck agreed to purchase 41.6 megawatts of power from the second unit of Antelope Valley Station for at least five years. This contract was later increased by increments of 5 megawatts each year from 1992 to 1996 and was extended to 2006.

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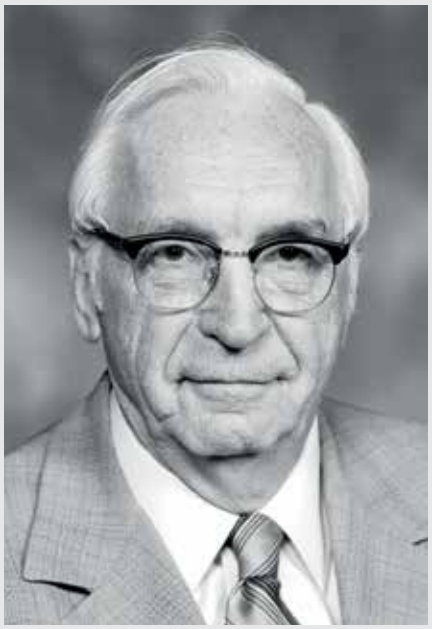
James L. Grahl: *A giant among cooperators*



James L. Grahl

This article by Kathi Risch, reprinted in part, appeared in the 2004 January-February Basin Today following James Grahl's death on Nov. 20, 2003.

In 1959 the U.S. Department of the Interior notified the electric cooperatives in the upper Missouri River Basin that their electricity requirements would soon overtake the federal hydro capacity and that they should find a supplemental source of power.

Basin Electric was organized May 5, 1961, by rural electrics in the region to provide an adequate supply of dependable, low-cost electricity. James Grahl dedicated much of his career to this mission. Grahl became Basin Electric's first general manager, serving from June 1962 to March 1985.

The history of Grahl and cooperatives started when he came to talk to Basin Electric Board President Art Jones about managing Basin Electric in May 1962. Basin Electric had its REA loan to build its first generating unit, but it had many other problems. It lacked contracts with its members, a plant site, water supply, coal supply, staff, office space and transmission arrangements. In addition, some other rural electric cooperatives in North Dakota were unfriendly because of an earlier political struggle over which would get the REA loan for this first large generating unit and who would control the federal transmission grid on which all of the region's people depended.

Jones told Grahl that member forecasts predicted the plant must be online by October 1965, a scant 40 months to get the plant designed, built and in operation. The plan called for the mine-mouth plant to use lignite, such a low-quality fuel that many people thought it was impossible that a 210-megawatt unit would work using it.

Although he was impressed with Jones' honesty and was flattered that he was offered the job, a humble Grahl told Jones he had never managed a utility, was not an electrical engineer, and thought the board had made a mistake in offering the position to him.

In spite of those feelings, Grahl came to work for Basin Electric. One person and two major factors helped Grahl make his decision. Grahl's wife, Eleanor Perry Grahl, convinced him to take the job because its mission was something in which he believed. One major factor was that the board shared his concern for the condition of mined land and was determined to do something to improve it. The other was that he learned Basin Electric planned to name the plant after Leland Olds. Olds was a former chairman of the Federal Power Commission with whom Grahl had worked in Washington, D.C., and admired.

Grahl had a job he liked with the American Public Power Association (APPA), a nice home in Hollin Hills, VA, and had no intention of uprooting his family. However, Grahl came to work for Basin Electric because he was dedicated to bringing electricity to rural people and had a vision for the Cooperative. When Grahl accepted the position, Basin Electric had been born, but it wasn't clear if it was going to survive. However, Grahl's leadership skills in delegating, coalition building, politics, mediation and negotiations enabled Basin Electric not only to survive, but helped build it into one of the most respected rural electric generation and transmission cooperatives in the nation.

Grahl had general knowledge in the power industry, but no experience in managing a power system or a construction program. However, his human relations skills were possibly a more important asset in building Basin Electric from scratch.

During the first year, Basin Electric depended heavily on consultants for plant design, contractor selection, equipment procurement, fuel and transmission contract negotiations, and plant site selection. Grahl had the rare opportunity of selecting and supervising the hiring of all of the operating and staff people. In the beginning, he tried to recruit department heads with substantial experience. It became evident after some months of effort that it was not feasible to recruit such people. Most people with experience and proven ability already had good jobs and were not much interested in moving to North Dakota.

Grahl decided Basin Electric would have to develop its own experts and recruit people with the potential for becoming highly capable in the fields for which they would be responsible. He looked for people with an interest in the organization's objectives, potential for self development, an ability to work with a variety of types of people, and a strong tendency to work as a team rather than compete for status or position.

Jim Grahl shares a laugh with Anthony Sadowsky, Antelope Valley Station control room operator, in 1984.

Speaking on these recruiting efforts at an APPA annual convention in 1971, Grahl said, "They demonstrate the well-known fact that most people have more ability than they have a chance to use. Given the opportunity, they will develop and learn rapidly, and will enjoy the chance to rise to the occasion. It also is not true this adaptability and readiness to learn are confined to young people. The ability to develop seems to be more a matter of attitude than age."

Grahl's commitment and dedication were contagious. Teamed with his management style far ahead of the times, he had a formula for success.

He also had a good relationship with organized labor, which is an example of just one of the many coalitions Grahl was able to forge for the benefit of Basin Electric. He explained the Cooperative's policy on organized labor at Basin Electric's annual meeting in 1986, the year after he retired. "We adopted a flat-out open policy that we would work with organized labor, and we would recognize labor unions if the employees voted to organize labor unions. So we have always operated plants in which the employees were organized. All of our construction projects were built by unionized labor. This was a great benefit to us, despite some public impressions to the contrary. We have had cleaner plants, safer plants, and more efficient plants than our neighbors who paid their people 5 percent more than we did, so they wouldn't join a labor union. We got help from the unions when we needed it. We never had a strike. We had some walkouts at times when we really couldn't afford them economically, and the unions themselves put a stop to these wildcat walkouts. At one time, Basin Electric—this group of little rural electric cooperatives—was the largest employer of unionized craft labor in the whole Missouri Basin. When we needed help desperately, a couple of times, the unions remembered that."

With more than 100 member systems in eight states, Grahl clearly had a talent in bringing groups together. His dedication and thorough understanding of cooperative principles helped him build consensus and resolve conflicts through the democratic processes such a system provides.

Grahl put together an organization that solved problems and built Leland Olds Station Unit 1 on schedule and

Vern Smith, shift supervisor, turns the switch for Leland Olds Station Unit 2 initial turbine roll. Around Smith from left are Bob Boettcher, mechanical engineer; Kent Janssen, production manager; Rich Fockler, plant manager; James Grahl, general manager, and Didier De Vulilleres, a Brown-Boveri representative.

below budget. However, unusually high rainfall levels during the mid-1960s created surplus hydropower capacity. Because of this, it took Basin Electric's member systems five years to load the first generating unit. Despite this setback, Grahl and the Basin Electric board made plans for a second unit, which was completed in December 1975 and fully loaded within one year.

As demands for electricity by Basin Electric's member systems continued to grow, Grahl was instrumental in forming the Missouri Basin Power Project (MBPP), a group of six consumer-owned utilities, which developed the Laramie River Station near Wheatland, WY.

Grahl managed Basin Electric through more than its first two decades. Starting with a handful of employees in the early 1960s and $2 million in assets, Basin Electric grew to a $3-billion organization with nearly 1,300 employees when Grahl retired in 1985.

Under Grahl's leadership Basin Electric was a pioneer in using lignite on a large scale, supporting mined-land reclamation laws, implementing dry-scrubbing technology for removing sulfur dioxide from plant exhaust gases, protecting the environment, and managing socioeconomic impacts associated with power plant construction.

Basin Electric had many firsts. In September 1973 it announced a project with Class A member Tri-State Generation and Transmission Association to build a 100-megawatt direct current (DC) tie at Stegall, NE. This was the nation's first DC tie linking eastern and western transmission systems.

In 1970, Basin Electric initiated the Peoples Housing Program to help relieve the critical shortage of rural housing in the region. This program later received national acclaim.

Under Grahl's leadership, Basin Electric also moved into mine management when it assumed responsibility in January 1982 for the ownership and operation of Glenharold Mine, the lignite source for Leland Olds Station until June of 1993. Basin Electric was also the first rural electric to form a subsidiary, Basin Cooperative Services, to manage the mine and other non-electric utility functions.

Grahl's concern for people was evident when MBPP officials (Basin Electric was the construction manager for Laramie River Station) met with local and county government officials and civic and business leaders in Wheatland and Platte County to form the Platte County Task Force. The task force was formed because the Basin Electric board and Grahl were committed to demonstrating that large industrial construction projects need not create blighted communities.

Basin Electric General Manager James Grahl and Director George Hargins look out over the Antelope Valley Station plant site from the Unit 1 observation deck. The observation deck is at 320 feet. The North Dakota State Capitol Building is 241-feet tall. The two units of Antelope Valley Station would complete Basin Electric's first construction phase.

The success of the task force and the project not only helped secure a productive relationship with the community and the state, but also served as an example copied by other projects.

Basin Electric has also been recognized for its care for the environment and wise stewardship of natural resources. In 1980, Grahl accepted an award from President Carter's Council on Environmental Quality for Basin Electric. The "Award of Excellence in Pollution Control" was for outstanding technological achievement and leadership in all areas of pollution abatement.

In the mid-1960s, Basin Electric proposed model laws to the North Dakota Legislature to protect the air, water and land. It advocated legislation requiring mined land reclamation and prohibiting dumping fly ash and other industrial wastes into rivers. Basin Electric has always—and continues—to operate some of the nation's cleanest power plants.

Grahl always credited his staff of competent and dedicated employees for the successes of the Cooperative. He delegated major responsibilities because of the rapid growth of Basin Electric in those early days. He gave department managers as much responsibility and authority as needed while providing guidance and support as necessary.

Basin Electric quickly earned a reputation of fair dealing, innovation to meet members' needs, and a willingness to try new things. Grahl had a devout belief in service to the consumer at the end of the line.

Grahl supported national energy, environment and education programs throughout his career. He also received numerous awards, culminating with his induction into the Cooperative Hall of Fame in Washington, D.C., in 1995.

Other sales aimed at stabilizing rates and shedding surplus power followed in subsequent years, such as a contract with Public Service Company of Colorado that started at 50 megawatts in 1987, increasing to 100 megawatts by 1989. Another major contract was finalized for the sale of surplus power starting in 1986. Under the terms, 185 megawatts would be sold from the Antelope Valley Station into California through the use of the Bonneville Power Administration system. For Basin Electric, the sale meant net revenue of $45 million a year, totaling $225 million over the period of 1986-90. The Western Area Power Administration (Western) would move the power from Basin Electric through Montana and on to California.

The search for markets for its surplus power began about 1980 as it became apparent member growth would be less than anticipated. The Western sale developed when utilities in Montana and the Pacific Northwest indicated they would not have power to sell to Western by the mid-1980s.

But the sale ran into objections raised by the Montana Public Service Commission, which sought to block the sale because it claimed the power should be purchased from surpluses in the Northwest.

Basin Electric quickly filed for a declaratory judgment in district court. "If the PSC succeeds in blocking this sale, it would raise serious questions about the validity of power contracts and agreements, and jeopardize future sales and

transactions between power supply systems in Montana, the Missouri River Basin region and the Pacific Northwest," said Mike Hinman, the Cooperative's general counsel.

A few months later, the court ruled in Basin Electric's favor, holding that the Montana agency acted beyond its rate-making authority provided under Montana law.

That preserved a significant sale of power when Basin Electric's surpluses were growing. Without that sale, Grahl said, the Cooperative would have been required to increase wholesale power rates by another 10 percent.

Instead, a rate increase of nearly 9 percent was approved for 1985, making the rate 51.6 mills/kWh. This had been a painful period with inflationary costs pushing increases in wholesale power rates. The 1985 rate represented a near tripling of the rate level from the 18.4 mills in 1979.

Grahl pointed out the 1984 increase was the smallest percentage increase for one year in more than 10 years. Basin Electric had a huge block of generation coming online, but Grahl said its impact on the rate for 1985 was comparatively less. "This is because of the larger power supply base the cooperative has after completing the Laramie River Station … and this stabilizing effect will be more evident in future capacity additions," he said.

As of 1984, Basin Electric had grown into a true giant power supplier. The cooperative had 118 rural electric member systems in eight states—Colorado, Iowa, Minnesota, Montana, Nebraska, North Dakota, South Dakota and Wyoming.

It had power supply resources of more than 2,200 megawatts, in addition to managing another 1,000 megawatts as part of the MBPP. Included in its power delivery system was 1,927 miles of high-voltage transmission facilities owned entirely or partly by Basin Electric. Of that total, about 1,480 miles of Basin Electric's transmission were integrated with 7,827 miles of federal and other transmission lines forming the Joint Transmission System (JTS). As part of the JTS, participants cut down on duplicating transmission lines while increasing the efficiency of existing lines.

The end of an era

With all of these achievements, Grahl, Basin Electric's general manager since 1962, announced he would be retiring in early 1985. In his final annual report to members, Grahl paid tribute to past and present board members. "These dedicated and far-seeing rural leaders have consistently made the kinds of decisions and choices, which made it possible for a dream to become a reality … the dream of a cooperatively owned, region-wide electric power supply system," he wrote.

Basin Electric President Clarence Welander praised Grahl "for the many contributions to the well-being of rural people within the Missouri River Basin region."

Clarence Welander was Basin Electric president from Dec. 19, 1983, to Dec. 17, 1984.

At the end of the annual membership meeting in 1984, directors chose Robert McPhail, a veteran of 25 years with federal power marketing agencies, to succeed Grahl.

It was more than a changing of the managerial guard at Basin Electric. Grahl and the cooperative's leadership had spent a quarter of a century building a multi-state power supply system that was now serving more than 1.2 million consumers in the Missouri Basin region. They had achieved that in response to rapid load growth in the 1960s and 1970s.

Now the initial job of building was concluding. The task of turning the vision of giant power into reality had been realized. With an era of construction ending, the next stage for the Cooperative would focus on operations. It would be a period concentrating on operating power plants and transmission systems at maximum efficiency. And, dealing with the reality that Basin Electric now had about 1,000 megawatts of power surplus to its members needs.

It was a transformation that would begin quickly—and painfully.

Chapter 5

A painful transformation to a new Basin Electric era

By the mid-1980s, Basin Electric Power Cooperative had been built into one of the five largest generation and transmission cooperatives in the nation.

But it now faced a transformation, a change that would not be easy. The year 1985 would prove to be a watershed period in which the Cooperative changed general managers as well as its business focus for the future.

After a quarter century of building, Basin Electric now found it had about 900 to 1,000 megawatts of power surplus to its members needs and a workforce sized for construction, which was no longer needed. It was forced to concentrate on operations and efficiency, financial management and marketing of power as the new emphasis. And after years of wholesale rate increases to Class A members, rate stability became a major focus for the Cooperative.

With the retirement of long-time General Manager James Grahl in mid-March 1985, this transformation process began in earnest as Robert "Bob" McPhail moved from his position as the first administrator of the Western Area Power Administration into the Cooperative's chief management position.

General Manager-designate Robert McPhail worked alongside James Grahl starting in February 1985. This photo appeared in the 1984 annual report. McPhail started the job on his own March 16, 1985.

Against a backdrop of a continuing depressed agricultural economy and record high interest rates, Basin Electric forged ahead with a reorganization and other decisions that moved it into a new direction based on trimming costs and marketing surplus power. Those initial changes in early 1985 included:

- Reducing the office locations and employees in Missouri Basin Power Project (MBPP) offices in Wyoming. With a staff of 26 at one time, the single MBPP office now would have six people;
- Alternating the operation of the two units at the Leland Olds Station, as well as reducing operations of the Glenharold Mine that supplied fuel for the station. This netted a reduction of 75 employees and a cost savings of nearly $10 million annually; and
- Streamlining the Cooperative's nine major departments into three departments along with five support groups. This reorganization initially produced a workforce reduction of 144—or about 11 percent—in the next several months, including 112 layoffs. Of the total, most of the cuts came at the Cooperative's Bismarck headquarters, where the staff was reduced by 26 percent. In addition, another 49 miners were laid off. Eventually the workforce would be reduced by more than 220.

"This organizational change was made so that Basin Electric can be in a better position to achieve its number-one mission of providing members a reliable supply of power at the lowest cost, consistent with sound business principles," McPhail said, in announcing the reorganization.[1]

Dubbed "the new broom at Basin," the new general manager was sweeping "out the corners at a radically streamlined power co-op," according to a local newspaper.[2]

"Our customers are basically rural America," McPhail said. "People are having a hard time paying their bills, paying their electric bills." He also pointed out that other generation and transmission cooperatives in the country also were facing the same pressures as Basin Electric.

1. "Basin Electric reorganizes," *Report,* Basin Electric Power Cooperative, July 1985, 2.
2. Kevin Whalen, "The new broom at Basin," *The Bismarck Tribune,* June 30, 1985, 1.

Quentin Louden was Basin Electric president Dec. 17, 1984, to Dec. 13, 1985, and Dec. 12, 1986, to Dec. 18, 1987.

Quentin Louden, a South Dakota farmer, also was new to the position of Basin Electric president. The organizational overhaul, he said, came "at a time when the declining farm economy and lower-than-expected sales of electric power make it necessary to reshape the Basin Electric organization as it changes from a major construction agency to an operating organization." As a result, decisions had to be made to "minimize rate increases," he said.[3]

Cost containment was the term McPhail used as he met with employees.[4] Noting the economic downturn for rural America, he stressed the new effort of increasing sales of the Cooperative's excess power. In particular, he emphasized cost savings in power supply operations, one of the largest expense areas. For this utility operation, the top three expense items were interest on debt, fuel and depreciation.

Richard "Dick" Weber

Richard "Dick" Weber, assistant general manager of Management Services, said employees included in the reduction-in-force were doing important work. "However, after workload staffing reviews and in light of changes in operating procedures it was determined that the Cooperative would need less staff to perform certain functions in the new organization," Weber said in an August 1985 *Report* Magazine story.

The layoffs and reorganization produced turmoil and confusion for employees. As this played out with the focus on the Cooperative's headquarters in Bismarck,

3. "Basin Electric reorganizes," *Report,* 3.
4. "McPhail places emphasis on cost-containment efforts," *Report,* Basin Electric Power Cooperative, May 1985, 8.

Basin Electric introduced "Btu Busters" in September 1986 to promote ways to hold down power costs and recognize employee efforts. Original characters and cartoons developed by staff artist Carey Bittner were used in publications, on posters and hard hat stickers to promote the program.

news stories also appeared about the state of North Dakota facing budget problems, threatening layoffs at the state Capitol and elsewhere.

At the Cooperative, dismissal notices sometimes caused resentments, particularly as a few employees—high-level and computer-system positions—were escorted out of the Cooperative immediately upon being informed they no longer had a job. A few terminations led to lawsuits, including at least one unfair dismissal lawsuit that ended up before the North Dakota Supreme Court. Ultimately, the court ruled in Basin Electric's favor.

Unfortunately, the process was necessary, said Kent Janssen in an interview in 2008. Janssen had been named deputy general manager in 1985 in time to oversee the reorganization. "It's unfortunate that it wasn't more gradual … that we weren't starting to cut back sooner, but it was something that needed to be done," he said.

Efficiency efforts and financial strategies begin paying off

At the Cooperative's power plants, operations had begun focusing on improving heat rate, which is a way of measuring a power plant's efficiency in using lignite coal to generate electricity. Heat rate is expressed in the number of Btu (British thermal units) used for each kilowatt-hour of electricity generated.

Rich Fockler

In 1984, Basin Electric achieved a 5.1 percent improvement in its heat rate for power plants overall, resulting in a savings of $7.3 million through less coal use, reported Rich Fockler, Basin Electric's operations manager. Power plants aimed for another 2 percent in heat-rate improvement targeted for 1985, he said.

The improvements came through a focused effort begun three years earlier with Fockler crediting plant and results engineers as well as all operations and maintenance employees at the power plants.

The improvements involved several areas; one of those was the level at which power plants were operated. To achieve the most efficiency, generating units were being operated with an eye toward the capacity factor. "In low-load periods, a generating unit may be placed in an economy shutdown for a period of time because it is more cost effective to run one unit at or near full load than two units at half load," explained Bob Boettcher, technical services supervisor for Basin Electric.[1]

Another approach focused on improving the Cooperative's financial position.

After a re-evaluation by McPhail's management team, the Cooperative decided to leverage-lease the second unit at the Antelope Valley Station, as its output contributed much of Basin Electric's surplus power. A deal was worked out with six companies to sell the unit for $622 million and then lease the facility back for 30 years. The resulting lower financing costs meant a savings of $20 million a year for the Cooperative.

With these and other measures, the Cooperative projected a savings of $20 million in 1986. Based on that analysis, Basin Electric board members voted in September 1985 to freeze wholesale rates in 1986. Their action meant the average wholesale rate for Class A members would remain at 51.58 mills per kilowatt-hour. (See Appendix H, Rate History.)

"Changes in operations and vigorous cost-containment efforts helped hold the line on additional revenue requirements from the member systems," said Louden, in the October 1985 issue of Basin Electric's Report Magazine.

It was the first time rates had been held unchanged in the Cooperative's quarter-century history. That was welcome news for Basin Electric's member systems and the 1.2 million consumers they served, and it

LET'S TALK

MARKETING

Vol. 1 No. 1 | A Basin Electric Publication | January 1986

Newsletter will inform membership on marketing

Basin Electric is committed to doing everything it can to assist its member systems increase energy sales. From this commitment comes this "Let's Talk Marketing" newsletter, another effort to provide member systems with useful information on marketing.

In this bi-monthly newsletter, Basin Electric will communicate with member systems on a variety of subjects. There will be news about the marketing activities of Basin Electric, its member systems and other utilities. Training and education, sales, pricing and rates, public relations, economic development, research, communications and advertising promotions all will be covered in future issues.

Each future issue will highlight a successful marketing program at a Basin Electric member system. "We're looking at this newsletter as the medium for an idea exchange among the membership," says Duane Bye, manager of Member Services.

"We can all learn from each other's marketing efforts. A particular marketing program might be successful in one area, but may not work exactly the same way in another," Bye said. "But some part of it might be adaptable and work well for others. The efforts of others always are a good source of ideas."

Newsletter readers also will see information on advertising materials available from Basin Electric. Television and radio commercials and print advertisements produced with the help of Basin Electric for member systems are available to all members on request. A catalog of available advertising and an order blank will be included in some issues; and a slick print ad produced by Basin Electric staff will be sent out with others.

Bye said the newsletters will include articles that can be used by distribution systems in their newsletters. "We expect to have articles on the benefits of dual fuel, for example, that would only need slight changes to accommodate the member system's particular program."

Area and regional meetings on marketing will be covered in newsletter articles. Bye said they will keep people informed on the meetings and seminar dates, and summarize interesting ideas presented at them.

Newsletter articles will be written by Member Services and Communications and Governmental Relations staff. Bye encourages member systems to suggest story ideas for future issues.

Basin Electric staff provides marketing assistance

Several Basin Electric staff members are available to assist member systems with handling ongoing efforts to market electricity.

Staff and department responsibility changes came about with the reorganization of Basin Electric in 1985. Staff from Marketing and Member Services and Communications and Government Relations are primarily responsible for Basin Electric's member-oriented marketing programs.

Here's a brief summary of the staff providing marketing assistance to member systems:

Howard Easton is the assistant general manager for Marketing and Member Services at Basin Electric. In that department the Member Services division, managed by Duane Bye, is responsible for several member marketing efforts. Member Services staff and their primary areas of responsibility are Nancy Wolf, dual fuel, member contact, conservation and renewable energy programs; Karl Karlgaard, advertising campaign development, media strategies, market research and the marketing library; Bill Schott, economic development including community profiles; and Eileen Larson, secretary.

Communications and Government Relations is managed by Ken Ziegler. The Member and Public Communications division is managed by Scott McBride, and

See MARKETING ASSISTANCE, page 3

Basin Electric began to consider marketing in March 1984 in response to surplus electricity. The board authorized staff to work with members to develop a program that July. A marketing conference was held prior to the annual meeting in November. The publication above was first started in January 1986 and published six times a year through March 1995.

served notice that the organization and its employees had started coming to grips with the reality of the tough economics faced by the Cooperative.

However, additional drastic measures were proposed to enhance Basin Electric's financial outlook.

One idea was a "layoff" sale of any of Basin Electric's generating units. The Cooperative offered to temporarily sell the use of any generating unit and related transmission, with the facilities reverting back to Basin Electric after five to 15 years. Though discussions were

1. "Efforts to improve heat rate paying off in fuel cost savings," *Report*, Basin Electric Power Cooperative. June 1985, 3.

The June 1986 *Report* featured the fight to oppose the sale of the federal power marketing administrations on its cover. Robert Feragen, East River general manager, Rural Defense Committee co-chairmen, Maurice Bergh and Virgil Fodness, and Tom Fennell, South Dakota REA executive manager, delivered 100,000 petitions in opposition.

held with Northern States Power of Minneapolis and Public Service Company of Denver, no such transactions were finalized.

Another cost-containment measure that went into effect in January 1986 involved the cost of lignite burned at Leland Olds. Fuel costs represented the second largest operational expense, nearly 24 percent of Basin Electric's total operations budget of more than $424 million. To gain more control of fuel costs, Basin Electric assumed full operational control of the Glenharold Mine near Stanton, ND, a year earlier than projected. The mine, which had been purchased from Consolidation Coal Company in 1982, would now be fully operated by Basin Cooperative Services, a Basin Electric subsidiary.

Besides streamlining the operation for cost savings, Rich Fockler, assistant general manager of Operations and Engineering, pointed out: "We look for a balance of quality of lignite, timeliness of development, and cost-effectiveness in terms of permitting, developing mining plans, use of mining and reclamation equipment, and personnel and delivery schedules."

Basin Electric also took advantage of a drop in interest rates.

The Cooperative had elected to borrow for its major construction projects in the 1970s and early 1980s based on interest rates fixed for short terms, typically two years. Under new Financial Services Manager Clifton "Buzz" Hudgins, Basin Electric moved quickly in 1986 with a plan to restructure its debt, converting more than 85 percent of its short-term Federal Financing Bank debt to long term at relatively low interest rates. That not only produced an initial annual savings projected at more than $44 million, but also served to insulate interest costs from a major increase for a longer period.

Focus on marketing

Marketing had not been a priority for most of Basin Electric's first 25 years. Member growth had been strong, staying ahead of the supply from the Cooperative's facilities. However, that changed with the downturn in the rural economy and 1,000 megawatts in power surplus to member needs.

Basin Electric management had begun a process to convince employees and member systems that they needed to be focusing on marketing strategies for the Cooperative to survive and succeed.

To help erase the surplus, Basin Electric began an effort to sell surplus power to entities outside the Cooperative family, which was not popular because some investor-owned utilities were purchasing this power at a lower price than members were paying. However, without these surplus sales the member rates would have had to be higher. In 1986, for example, a contract was signed for a 29-year sale of 100 megawatts to Public

This cartoon by Carey Bittner accompanied an article titled "Is Uncle Sam selling his house to pay his mortgage?" in the April 1986 *Report* Magazine. The article defended cost-based rates for hydropower and preference in its sale to public entities like municipalities and cooperatives.

Service Company of Colorado. In its annual report, Basin Electric emphasized that the long-term sale "will significantly benefit" the membership by reducing revenue needed from member systems and help to stabilize wholesale power rates.

Basin Electric's board of directors adopted a seven-part marketing plan that included research and education, communications and commercial load development. The plan included training sessions for distribution cooperative employees and board members as well as sales skills training workshops for member service representatives.

At the Cooperative's 1986 annual meeting, "Marketing is Our Future" served as the theme. And the joint message by McPhail and Louden in the *1986 Basin Electric Annual Report* reflected the marketing emphasis: "A new enthusiasm is emerging among Basin Electric's member systems about the potentially great value of using marketing techniques to sell increased amounts of electricity to their consumer-owners."

Operating efficiencies, improved surplus power sales, and reduced interest and fuel costs led to an improved financial outlook.

As a result, the news was positive about wholesale rates at the 1987 annual meeting as well. Louden announced wholesale power rates would be reduced an average of 6 percent in 1988. "This is a remarkable accomplishment in achieving our goal of rate stability," Louden said. "It is also the first rate decrease for our members in the 27-year history of Basin Electric."

The threats of PMA sales and takeovers

Basin Electric joined with its members in the mid-1980s to meet threats to the rural electric system and its ability to provide power for rural America.

One such test involved the federal power marketing agencies, or PMAs.

Basin Electric serves as a supplemental power supplier for its member systems, complementing their individual hydroelectric power allocations coming from government-owned dams. As part of that system, five PMAs had been formed throughout the country to sell that hydroelectricity, including the Western Area Power Administration in Basin Electric's membership area. By the 1980s, hydroelectric power represented about one-third of the total used by Basin Electric member systems to meet the needs of rural consumers.

However, President Ronald Reagan, who took office in 1981 based on a conservative, budget-cutting campaign, focused on erasing a federal deficit. His administration took aim at the PMAs, contending the federal government shouldn't be involved in this function. Using a special 1983 report (the President's Private Sector Survey on Cost Control), the administration argued the PMAs should be sold and the hydroelectric marketing function turned over to the private sector. Selling the PMAs would return $25 billion to the federal treasury over five years, helping to lower the national budget deficit, according to the administration.

But East River Electric Power Cooperative estimated the sale of Western would be very costly for rural consumers in South Dakota. According to its estimate, the sale could increase costs by $30 million a year, raising rural consumer rates about $500 annually. Rates for consumers in other rural areas could be doubled or tripled, according to Basin Electric.

East River organized the Rural Defense Committee and was joined by the South Dakota Rural Electric Association, NRECA, the Mid-West Electric Consumers Association and the American Public Power Association in a grassroots effort that resulted in more than 100,000 people signing petitions opposed to Reagan's PMA plan. In May 1986, the petitions were presented to 17 members of Congress during a legislative rally in Washington, D.C. Ken Ziegler, Basin Electric's manager of Communications and Government Relations, credited East River and the South Dakota REA for gaining the public's attention on the issue. "Selling the federal hydroelectric facilities is foolish because they produce revenue for the federal government and have done so for many years," he said. "Selling them to private interests to help reduce the deficit doesn't make sense. Once they are sold, that's it. The revenues produced are gone forever."[2]

Among those leading the campaign against the PMA sale were two Democratic leaders, U.S. Sen. Quentin Burdick of North Dakota and Rep. Tom Daschle of South Dakota. Burdick said if legislation allowing the sale passed, "it will be the largest giveaway of the people's resources in the history of the republic." On the floor of the House, Daschle blasted the Reagan proposal. "The dramatic increases which would follow the sale of Western Area Power Administration, could not come at a worse time, as our farms and farm communities are suffering the harshest economic crisis since the Depression," he said.[3]

With no major support for privatization, Reagan backed off, signing a bill that prohibited the federal government from spending funds on divesting the PMAs. Cooperatives and not-for-profit utilities had won the battle, but the fight over PMAs was not over.

Another major threat focused on Basin Electric and its members.

Investor-owned utilities (IOUs) sought to take over member cooperatives, beginning in 1986 in Wyoming. A huge, Oregon-based company, Pacific Power & Light (later to become Pacific Power and a part of PacifiCorp), had taken over two distribution members of Basin Electric (Shoshone River Power and Garland Light & Power) with approval by their members.

Now another takeover possibility arose with a third Wyoming member, Carbon Power & Light.

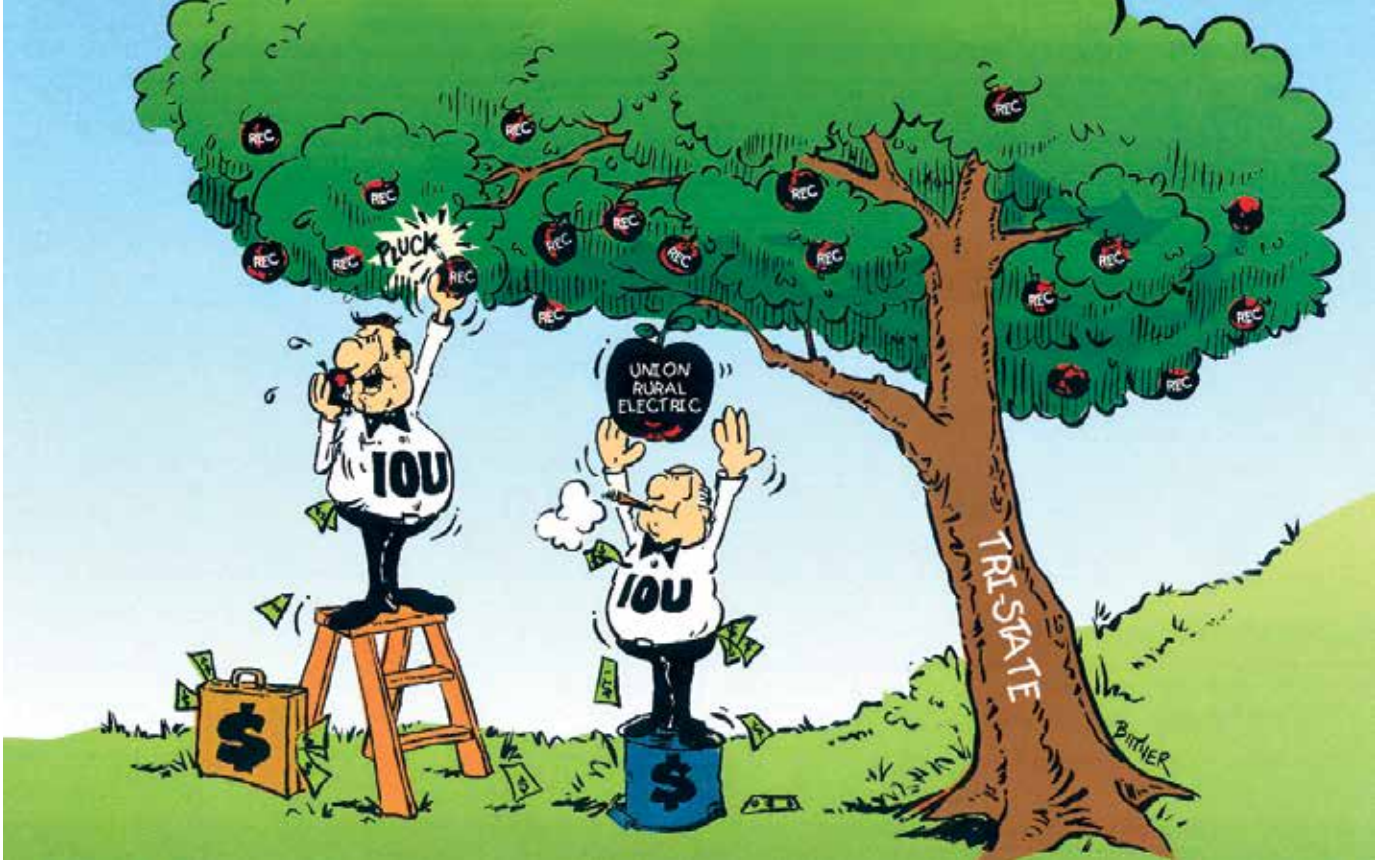
Dennis Lindberg was Basin Electric president from Dec. 18, 1981, to Dec. 19, 1983, and Dec. 13, 1985, until his death July 13, 1986.

Dennis Lindberg, Basin Electric's president, said IOU takeovers mean rural consumers lose control over the policies and rates. The loss of a member puts hardships on all of the remaining consumers in other member systems, he said. Another Basin Electric board member, Gerard Jacobs, pointed out that cooperatives operate at cost. "If a power company takes over a co-op, they will expect a profit of 12 to 14 percent," he said, in Basin Electric's June 1986 *Report* Magazine.

In these takeover cases, it appeared a group of local cooperative consumers—typically owners or managers of commercial businesses—were advocating for selling the cooperatives' assets to Pacific Power.

However, Carbon Power managed to rebuff the attempted buyout with the help of Basin Electric and Tri-State G&T Association of Denver, a Class A member. The Carbon Power board approved bylaw changes opposed by the sellout group, including an increased number of supporters required for calling a special membership meeting as well as increased votes needed to approve dissolving the cooperative. The changes also

2. *Power for the Plains: 25 Years of Service* (Basin Electric Power Cooperative, 1987), 71.
3. *Serving the West: Western Area Power Administration's First 25 Years as a Power Marketing Agency,* (Western Area Power Administration, 2002), 101.



With a proposed article and this cartoon in hand, Ken Ziegler, manager of Communications and Government Relations, went to the board of directors to get approval to help Class C member, Union REA (now United Power), Brighton, CO, fight a takeover attempt by Public Service Company of Colorado. "We have to oppose takeovers or the temptation to give up and sell out because the co-ops are really not ours to sell. Co-op membership is a privilege and like an heirloom is to be passed on to our children and our children's children. It is really not right to take away the ownership rights of future generations. Once lost, it is unlikely that those rights will be regained," Ziegler said.

required that other cooperatives in Wyoming be given the opportunity to bid on the cooperative's sale and that a formal asset appraisal be done before the sale.

Ron Harper, Carbon Power's general manager at the time, credited the buyout derailment to vigorous public and member information efforts and a well-informed board of directors.

As a result of the takeover attempts, a special joint communications committee was formed involving Tri-State, Basin Electric and other members, focusing on improving awareness about the value of consumer-owned and -controlled power supply systems.

Ziegler said that failure to communicate policies and programs is suicidal for rural electric systems. "Without effective communications, an REC draws inward," he said. "Fewer and fewer people know what's going on. The operation becomes more and more private, and members become more and more suspicious…. Cooperatives need strong marketing policies and strong communication policies, and a commitment to marketing and communications excellence."[4]

Within a year, another takeover attempt of a member of Tri-State and Basin Electric by an IOU came up in Colorado where Union Rural Electric Association had been negotiating with Public Service Company of Colorado (PSCo). Union had been in a dispute with PSCo over service to a proposed new airport in Denver and also faced annexations by surrounding cities and towns served by PSCo. However, Basin Electric staff pointed out that the one-time payout for current consumers would soon be lost by future higher rates in the proposal.

Unanimously opposed by Union's board, the sale subsequently failed to garner the required two-thirds majority vote by members.

With those challenges met, the Cooperative and its members had to focus on another threat, leading to an historic diversification of its electric business.

4. *Power for the Plains: 25 Years of Service,* 67.

Chapter 6

Synthetic fuels: A visionary decision to diversify

Just as Basin Electric was announcing the last of its employee layoffs in mid-1985, the top news in North Dakota warned of another potential economic blow to the region.

Great Plains Gasification Associates, the partnership of five energy companies operating the unique coal gasification plant alongside Basin Electric's Antelope Valley Station, defaulted on its guaranteed $1.5-billion federal loan on Aug. 1, 1985.

The nation's first commercial-scale coal gasification facility was in danger of closing, slightly more than a year after it first produced synthetic natural gas from lignite. The announcement also came just days before the huge energy plant was to be declared "in service," which signaled when the partners would have to begin paying interest on their mega-loan from the Federal Financing Bank.

Earlier the partners had threatened to abandon the coal gasification project if they didn't receive additional government subsidies.

It proved to be the latest turn in the roller-coaster history of the dreams of coal gasification brought to North Dakota by Detroit-area natural gas interests in the early 1970s. They were looking for alternatives based on predictions that America would soon be running out of natural gas.

American Natural Gas Company (ANG) of Detroit had been exploring fuel alternatives, including coal gasification, to continue serving its customers in Michigan and Wisconsin. Coal gasification wasn't new; the Lurgi gasification process had been developed by oil-hungry but coal-rich Germany prior to World War II. In this complex process, "substitute natural gas," as it was known then, is produced by crushing and basically cooking coal. Certain byproducts also are produced, such as anhydrous ammonia, sulfur and liquid nitrogen, with the potential for several others.

Coal gasification was promoted in the early 1970s when America faced an energy crisis spawned by the oil-producing nations in the Middle East. America's leaders spoke of weaning the nation of its dependence on foreign oil. Energy independence became a slogan then, repeated often in the decades to come.

For ANG and its energy partners, western North Dakota jumped to the top of their list for a gasification project, with its vast deposits of lignite, plentiful water source, good railroad connections, excellent labor supply and abundant power. The electric power would be supplied by Basin Electric from the Antelope Valley Station located near Beulah, ND, based on a 1974 agreement.

With that, the prairies of western North Dakota had evolved into a prime spot for a "flagship" gasification project.

But the project quickly ran into delays over water and other permits, financing and political issues. With the delays, the project fell victim in the early 1980s to the

The Great Plains Synfuels Plant (foreground) and Antelope Valley Station (blue station, background) cover about one-and-a-half square miles. These facilities and Freedom Mine were constructed for about $3.7 billion. Basin Electric won the bid to purchase the Synfuels Plant, associated facilities and mining rights from the federal government, which it did through two subsidiaries on Oct. 31, 1988. The purchase was considered a defensive move to keep the plant operating. Basin Electric had many shared facilities and a power contract with the plant.

so-called natural gas bubble, a sudden overabundance of natural gas brought on by federal legislation promoting increased exploration and drilling. Natural gas markets dramatically collapsed and prices dropped, undercutting the economics on which the North Dakota gasification plant had been based.

Problems seemed to follow one another, weighing down the project and finally leading to a dramatic headline in the Bismarck Tribune: "Partners bail out, DOE steps in." It was jarring news to North Dakota and Basin Electric. The story detailed how the U.S. Department of Energy (DOE) had assumed ownership of the gasification plant on the day of default. ANG Coal Gasification Company, a subsidiary of one of the five partners, would continue to operate the plant for DOE.

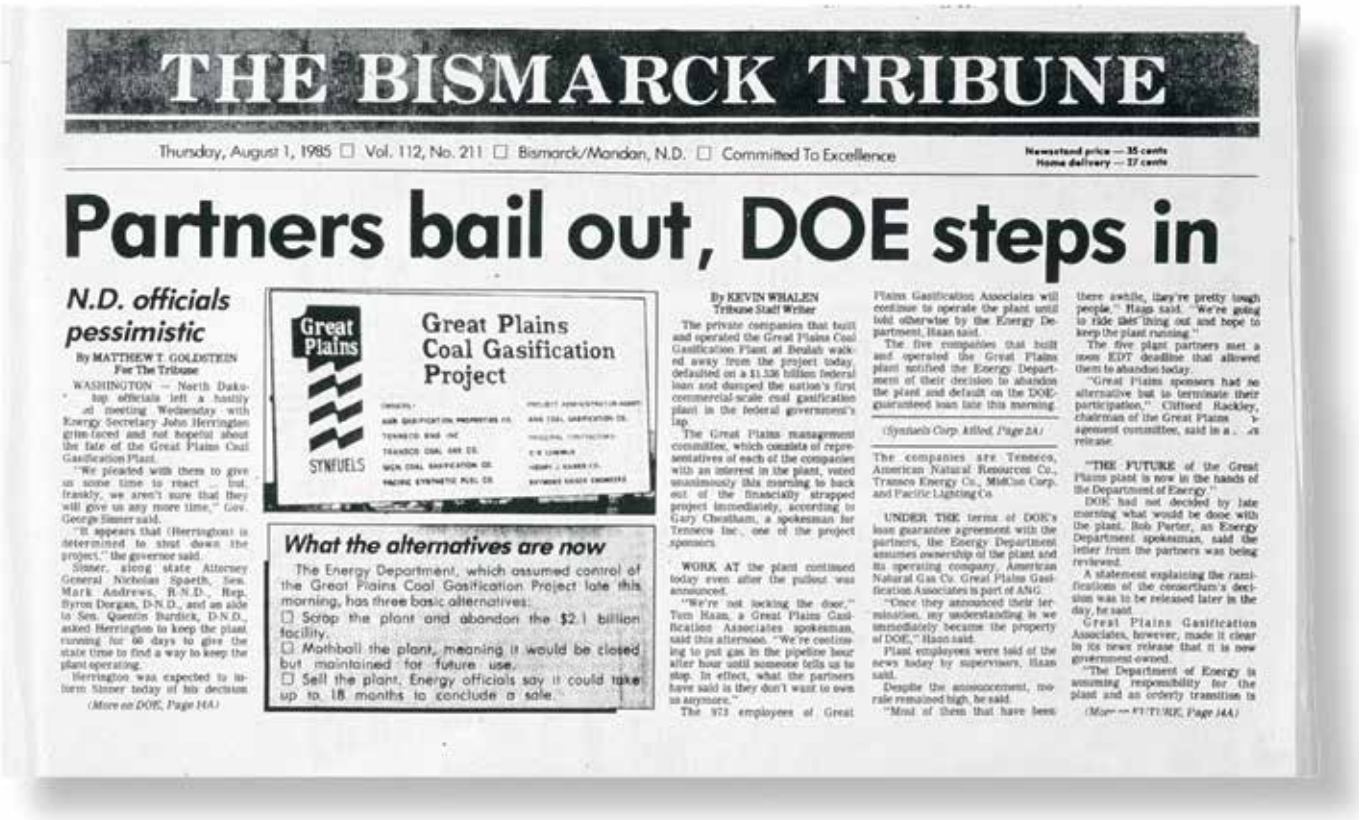
"The private companies that built and operated the Great Plains Coal Gasification Plant at Beulah walked away from the project today, defaulted on a $1.536-billion federal loan and dumped the nation's first commercial-scale coal gasification plant in the federal government's lap," read the *Tribune* story.

According to the newspaper, the DOE was now looking at several alternatives:

- Scrap the plant and abandon the $2.1-billion facility.
- Mothball the plant, meaning it would be closed but maintained for future use.
- Sell the plant, a process that could take 18 months.

For North Dakota, the loss of the energy plant meant millions in lost taxes, not to mention the indirect financial impact from losing the gasification plant's 973 employees and their total annual payroll of $36 million.

North Dakota Gov. George Sinner convened a task force and called a special meeting in Beulah that drew



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Partners bail out, DOE steps in

N.D. officials pessimistic

By MATTHEW T. GOLDSTEIN
For The Tribune

WASHINGTON — North Dako- ... top officials left a hastily ... ed meeting Wednesday with Energy Secretary John Herrington grim-faced and not hopeful about the fate of the Great Plains Coal Gasification Plant.

"We pleaded with them to give us some time to react ... but, frankly, we aren't sure that they will give us any more time," Gov. George Sinner said.

"It appears that (Herrington) is determined to shut down the project," the governor said.

Sinner, along state Attorney General Nicholas Spaeth, Sen. Mark Andrews, R-N.D., Rep. Byron Dorgan, D-N.D., and an aide to Sen. Quentin Burdick, D-N.D., asked Herrington to keep the plant running for 60 days to give the state time to find a way to keep the plant operating.

Herrington was expected to inform Sinner today of his decision

(More on DOE, Page 14A)

Great Plains Coal Gasification Project

SYNFUELS

What the alternatives are now

The Energy Department, which assumed control of the Great Plains Coal Gasification Project late this morning, has three basic alternatives:

☐ Scrap the plant and abandon the $2.1 billion facility.

☐ Mothball the plant, meaning it would be closed but maintained for future use.

☐ Sell the plant. Energy officials say it could take up to 18 months to conclude a sale.

By KEVIN WHALEN
Tribune Staff Writer

The private companies that built and operated the Great Plains Coal Gasification Plant at Beulah walked away from the project today, defaulted on a $1.536 billion federal loan and dumped the nation's first commercial-scale coal gasification plant in the federal government's lap.

The Great Plains management committee, which consists of representatives of each of the companies with an interest in the plant, voted unanimously this morning to back out of the financially strapped project immediately, according to Gary Cheatham, a spokesman for Tenneco Inc., one of the project sponsors.

WORK AT the plant continued today even after the pullout was announced.

"We're not locking the door," Tom Haan, a Great Plains Gasification Associates spokesman, said this afternoon. "We're continuing to put gas in the pipeline hour after hour until someone tells us to stop. In effect, what the partners have said is they don't want to own us anymore."

The 973 employees of Great Plains Gasification Associates will continue to operate the plant until told otherwise by the Energy Department, Haan said.

The five companies that built and operated the Great Plains plant notified the Energy Department of their decision to abandon the plant and default on the DOE-guaranteed loan late this morning.

(Synfuels Corp. Killed, Page 2A)

The companies are Tenneco, American Natural Resources Co., Transco Energy Co., MidCon Corp. and Pacific Lighting Co.

UNDER THE terms of DOE's loan guarantee agreement with the partners, the Energy Department assumes ownership of the plant and its operating company, American Natural Gas Co. Great Plains Gasification Associates is part of ANG.

"Once they announced their termination, my understanding is we immediately became the property of DOE," Haan said.

Plant employees were told of the news today by supervisors, Haan said.

Despite the announcement, morale remained high, he said.

"Most of them that have been there awhile, they're pretty tough people," Haan said. "We're going to ride this thing out and hope to keep the plant running."

The five plant partners met a noon EDT deadline that allowed them to abandon today.

"Great Plains sponsors had no alternative but to terminate their participation," Clifford Hackley, chairman of the Great Plains ... agement committee, said in a ... release.

"THE FUTURE of the Great Plains plant is now in the hands of the Department of Energy."

DOE had not decided by late morning what would be done with the plant. Bob Porter, an Energy Department spokesman, said the letter from the partners was being reviewed.

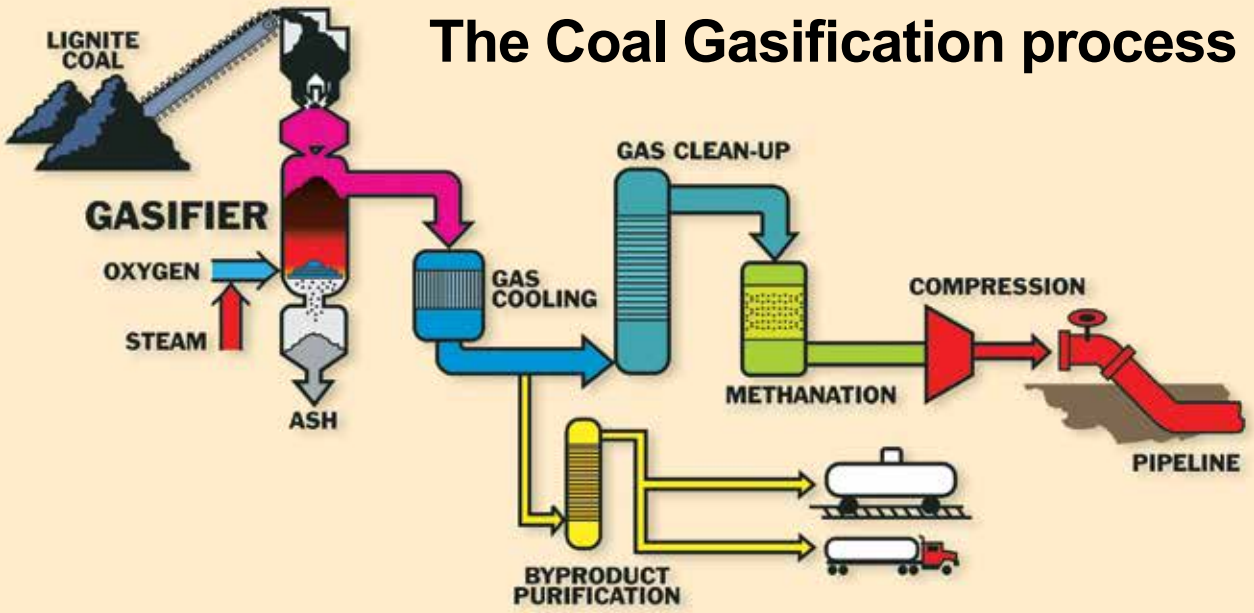
A statement explaining the ramifications of the consortium's decision was to be released later in the day, he said.

Great Plains Gasification Associates, however, made it clear in its news release that it is now government-owned.

"The Department of Energy is assuming responsibility for the plant and an orderly transition is

(More ... FUTURE, Page 14A)

When additional price guarantees were not forthcoming from the federal government, the Aug. 1, 1985, *Bismarck Tribune* described the dilemmas faced by the Great Plains partners, the federal government, the state of North Dakota, the plant employees and Basin Electric when it was clear the plant would not financially succeed.



Coal gasification involves dismantling the molecular structure of coal and reassembling it as methane. The 14 gasifiers are the heart of the Synfuels Plant. They are cylindrical pressure vessels 40-feet high with an inside diameter of 13 feet. Each day more than 16,000 tons of lignite are fed into the gasifiers. Steam and oxygen are injected, causing combustion at about 2,200 degrees F. Hot gases break down the molecular bonds of coal and steam, releasing compounds of carbon, hydrogen, sulfur, and nitrogen to form a raw gas. This raw gas goes to a cooling area where tar, oils, phenols, ammonia and water are condensed from the gas stream. These byproducts are purified and transported. The gas moves to an area where further impurities are removed. Methanation occurs by passing the cleaned gas over a nickel catalyst, causing carbon monoxide and carbon dioxide to react with free hydrogen to form methane. After cooling, drying and compressing, the gas then goes into the pipeline.

an estimated crowd of 2,000. Among those attending were representatives of Basin Electric, who said the Cooperative was "willing to cooperate to keep the plant running."[1]

Gov. George Sinner

Basin Electric emphasized that it had a take-or-pay contract for supplying 90 megawatts of power to the gasification plant from Antelope Valley Station. The partners would be obligated to pay for the power, regardless if it is used or not, a spokesman for the Cooperative said.

However, Cooperative leaders were worried about the contract and the gasification plant's continued operation. Closing that facility would increase Basin Electric's costs, possibly raising member cooperative rates by up to 16 percent. That impact would come from a combination of loss of the power sale, higher coal costs and lost revenues from joint plant operations, such as water supply and treatment, and rail facilities.

As a result, representatives of 118 member cooperatives from eight states approved a resolution at Basin Electric's 1985 annual meeting that the Cooperative should take "all steps necessary to protect the interests of its member systems from undue burdens associated with future developments at the gasification plant."[2]

The combined effect of the possible gasification plant closing and the poor agricultural outlook sent economic chills up and down main streets throughout the region.

1. "Cooperative attends meetings on future of gas plant," *Report*, Basin Electric Power Cooperative, August 1985, 7.

2. "Membership urges long-term operation of gasification plant," *Report*, Basin Electric Power Cooperative, December 1985, 2.

Sen. Mark Andrews

Ideas emerged about how to save the gasification plant. One proposal came from Sen. Mark Andrews of North Dakota, who reported that the U.S. Department of Defense was considering a plan to retrofit the plant to produce jet fuel.

The advantages, Andrews said, include that it would produce a new market, allowing it to stay open; it would lessen reliance on foreign oil; and it would shorten transportation of the fuel to military air bases in North Dakota and South Dakota.

Retrofitting the plant for this new fuel production would cost up to $170 million, a cost that a private investor would absorb in taking over the plant, according to Andrews.[3] No investors stepped up and the jet-fuels plan fizzled.

Sinner considered, but rejected, a study by the state of North Dakota on alternative uses of the plant. The state didn't want to make any allowances for closing the plant.

John Herrington, U.S. Secretary of Energy

However, the governor did join with Andrews and others to keep the pressure on the administration of President Ronald Reagan that was looking to likely mothball the plant.

Andrews, a Republican, was particularly effective in negotiating with the GOP administration in the White House. Arranging for a meeting with DOE Secretary John Herrington, they were successful in bringing a change in the administration's approach. Herrington would allow the gasification plant to remain open until the spring of 1986. It was a temporary reprieve, but still left the long-term fate of the gasification plant unresolved.

During this operational twilight, the contracts to purchase synthetic natural gas from the plant also came under fire. As production of gas began, its price was significantly higher than natural gas produced by drilling oil or natural gas wells. When the consortium that built the facility abandoned it, the four pipeline companies holding the contracts sought to get out of the deals, claiming they were now null and void.

Eventually, the courts upheld the validity of the contracts.

With the courts' affirmation of the gas purchase contracts, management at Basin Electric breathed easier. "The outlook for the plant is looking better all the time," McPhail said, in a June 1987 *Repor*t magazine story. "We continue to support its long-term operation because of our power-supply and shared-facility arrangements, and also because we are convinced that continued development of synfuels technology is in the best interests of the United States."

The possibility of losing a market for power from Antelope Valley Station had been making management at Basin Electric nervous. Great Plains represented about 10 percent of its total power output. Basin Electric had planned for a long relationship between Great Plains and Antelope Valley Station. And the leaders at Basin Electric didn't trust what might happen under a new owner of the gasification plant, possibly a hostile company that may seek concessions from the Cooperative in the existing agreements under the threat of closing Great Plains.

Under that scenario, Basin Electric now devised a defensive strategy regarding Great Plains. By late summer, Basin Electric directors heard a management proposal about the Cooperative possibly bidding for the coal gasification plant.

For some, that idea seemed unusual for a generation and transmission cooperative. Gasification didn't fit with Basin Electric's chartered purpose of producing electricity for rural electric cooperatives. Part of Basin

3. "Jet fuel production possible at plant." *Report,* Basin Electric Power Cooperative, September 1985, 10.

Electric's investigation would be determining if the Cooperative's bylaws and articles of incorporation allowed the possible purchase and, if so, what corporate structure would be needed.

McPhail reported if the gasification plant shut down, Basin Electric would suffer an annual loss estimated at $37 million. Included in those losses were the following:

- $12 million in debt payments on water treatment, rail and other facilities used by both plants;
- $17 million in annual fixed costs paid by ANG for electricity; and
- $8 million in increased mining costs if ANG no longer purchased coal from the mine.

Besides minimizing that loss, the Cooperative's purchase would allow the federal government a means to recoup some of its investment if the plant became profitable. In addition, future development of byproducts from the coal gasification process "could substantially increase its profitability in future years."[4]

With that information, the Basin Electric directors in August 1987 authorized management to further study the merits of a bid for the gasification plant.

The decision may have been driven by a farmer's vision. George Hargens, a Basin Electric director and farmer from South Dakota, had talked to management and fellow directors about his dream that the Cooperative should buy the plant. A team at Basin Electric moved ahead with the idea.

At the Cooperative's 1987 annual meeting in November, McPhail and Kent Janssen, Basin Electric deputy general manager, presented reports on the pros and cons of purchasing the gasification plant. Janssen advised members that Basin Electric could face increased demands by a new owner and that the prospect of marketing the 90 megawatts produced for the gasification plant "appeared remote."[5]

Kent Janssen

Janssen presented a scenario that showed the plant making a profit of $3 million per month, based on the pipeline companies then paying $3.75 per dekatherm (a measurement of heating value or measurement for purchasing gas equaling 1 million Btu) for synthetic natural gas. That price was 50 percent more than the market price for natural gas at the time.

The key issues for the plant's future, he said, include the future price of natural gas, additional revenues from byproducts, increasing synthetic natural gas production and reducing production costs.

Following those reports, Basin Electric's members unanimously voted to authorize continued investigation of the purchase and, if appropriate, negotiation of the purchase by the board and management.

However, the Cooperative's bylaws didn't allow for a gasification business. So the membership also approved a bylaw amendment allowing Basin Electric to engage in businesses other than those directly linked to rural electrification.

In a news release, Quentin Louden, Basin Electric's president, said the Cooperative was primarily interested in the plant's long-term operation "as a means of shielding the membership from rate increases."

In March 1988, following extensive evaluations, Basin Electric submitted a proposal to purchase the gasification plant, subject to final approval by the membership. The proposal was hand-delivered to Shearson Lehman Brothers, an investment-banking firm used by the DOE to help handle the purchase.

Basin Electric found itself among a powerful group of 15 companies bidding for this unique facility: Amoco Corp. of Chicago, Coastal Corp. of Houston, Burlington Northern Inc. of Seattle, Mission Energy (a subsidiary of Southern California Edison) and North American Coal Corporation of Cleveland.

4. "Cooperative to weigh bid for gas plant," *Report*, Basin Electric Power Cooperative, September 1987, 6.
5. Stan Stelter, *The New Synfuels Energy Pioneers: A history of Dakota Gasification Company and the Great Plains Synfuels Plant,* (Dakota Gasification Company, 2001), 71.

U.S. Sen. Kent Conrad of North Dakota testifies at a Senate committee hearing in September 1988 concerning the proposed sale of the gasification plant. Conrad told the panel that he thought Basin Electric had the ability to operate the plant.

McPhail told members it was good news that so many companies were interested, as it represented a sign of efforts to maintain the plant's long-term operation. Another positive sign, he said, was approval of an appropriations bill including amendments providing for congressional review of the plant's sale. Engineered by North Dakota Sen. Kent Conrad,[6] the oversight language required the DOE to disclose information in advance to Congress, including the buyer, what assurances had been made and the DOE's justification for choosing the buyer.[7]

Conrad said the amendments made it clear Congress' priority was the plant's long-term operation. The senator also said the amendments set a national security interest for the plant that would make it harder for a foreign buyer to gain control. That provision coincided with part of the plant's original purpose to move America off dependence on foreign oil and toward energy independence.

Eight companies met the bid-submission deadline, and Basin Electric soon found itself on a short list of three top bidders, with Coastal and Mission. The final decision on choosing a buyer would be made by DOE Secretary John Herrington, subject to review by Congress.

In April 1988, a U.S. House subcommittee held a hearing on the DOE's plan to sell the facility. Indiana Rep. Philip Sharp, subcommittee chairman, said he was focusing on two objectives: maintaining the plant as a test facility and a cornerstone of North Dakota's economy, and preventing taxpayers from being shortchanged.

In testimony, North Dakota Rep. Byron Dorgan called the plant a technological success offering an owner an opportunity "not only as a profitable business but also as a major energy research center.

"The Great Plains Project will not solve all of our energy needs, but it is a significant source of fuel, and therefore, it is imperative to ensure that the project is owned by someone committed to its long-term operation," Dorgan said.

As the DOE considered proposals, House Speaker Jim Wright of Texas toured the gasification plant, saying it confirmed that it is "a viable operation . . . producing substantial quantities of natural gas that is cost effective." Wright said he would insist the plant stay open, either in the public or private sector. "I think the United States must achieve energy independence if we are going to continue to be a great country and not a second-rate power," the speaker said.

A General Accounting Office (GAO) report indicated the plant could generate more than $6.6 billion in total revenue in 1988-2009. Based on future net revenues, GAO placed the plant's value at $569 million and, with production tax credits expected to be taken by a new owner, indicated the government would need to be paid $1 billion to allow for a net gain of $569 million.

6. Conrad defeated Sen. Mark Andrews, mentioned earlier in this chapter, in the 1986 election.—Ed.
7. "The Cooperative continues investigating the purchase of the Great Plains coal gasification plant," *Report,* Basin Electric Power Cooperative, January 1988, 3.

Basin Electric President George Hargens (at lecturn) presided at a special meeting when members voted to acquire the gasification plant through a subsidiary. Ray Jilek, long-time chairman of Basin Electric's resolutions committee, asks a question during this first-ever special membership meeting.

Finally, on Aug. 5, 1988, the DOE announcement came: Basin Electric had won the bid for the Great Plains plant. The bid and Basin Electric were now under congressional scrutiny.

Basin Electric's success appeared to rest upon two key elements developed by its in-house bid teams as well as its two principal negotiators, Janssen and Mark Foss, Basin Electric counsel. These elements apparently set Basin Electric apart from other bidders:

- Revenue sharing. It was agreed that DOE would receive a percentage of the plant's revenues from the sale of synthetic gas above a contractually specified cost of production. For the first 14 months, a Basin subsidiary formed to own the plant would share 100 percent of these revenues with DOE. Revenue sharing would then be suspended for a five-year period. For the following 10 years, DOE would enjoy 100 percent of the revenues above the threshold and during the last five years, these revenues would be shared on an equal basis.
- Waiver of production tax credits. DOE had assumed a new owner would take the production tax credits allowable under federal tax law. This tax credit was for producing unconventional fuels, including "synthetic fuels from coal," and, in this case, the tax credits amounted to $590 million.

Basin Electric also offered $85 million (a $5 million increase from the original bid) for the gasification plant's mining rights and equipment at the Freedom Mine as well as the natural gas pipeline connecting Great Plains to the interstate pipeline system.[8] In addition, the Cooperative set up a $30-million line of credit for its subsidiary that would be organized to own and operate the gasification plant.

The DOE valued Basin Electric's revised bid at $594 million, which was about $13 million higher than Coastal's and more than $120 million higher than Mission's.[9]

With the DOE's announcement, Basin Electric quickly called for a special meeting of its member cooperatives from its eight-state region to take final action on the offer as well as to set up two subsidiaries, Dakota Gasification Company (Dakota Gas, also referred to as DGC) and Dakota Coal Company. Dakota Gas would own and operate the gasification plant while Dakota Coal would provide financing and approve mining plans for the Freedom Mine, the fuel supply for the gasification plant and Antelope Valley Station. The Coteau Properties Company, a subsidiary of The North American Coal Corporation, owns and operates the mine.

A historic meeting

At the special meeting on Aug. 24, 1988, the key issue for members was the potential liability from a subsidiary. What if it went bankrupt or suffered a catastrophe? Michael Hinman, Basin Electric's general counsel, recalled in an interview in 2008 how the subsidiary structure was developed to provide maximum protection for the assets of Basin Electric.

8. In an Oct. 18, 2007 interview with the author, McPhail said he received a call from a DOE official, who was calling bidders to see if they wanted to make a bid enhancement. "What he was doing was squeezing the bidders and trying to get more money for the government, which was his job," he recalled. Put on the spot to make a decision immediately, McPhail raised Basin Electric's cash offer by an additional $5 million, though admittedly without proper authorization. "Then I got on the phone with the board of directors and said, 'I just spent another $5 million,' and they were OK with it."
9. *The New Synfuels Energy Pioneers,* 76.

Members also were assured that any benefits from operating the plant would serve to stabilize Basin Electric's wholesale electric rates.

With the explanations of a "corporate veil" and other issues, Basin Electric members unanimously voted to authorize purchase of Great Plains and establish the two new subsidiaries.

It was an historic day and decision for Basin Electric and its members.

In a news release, Hargens, Basin Electric's president, termed the choice as sound. "Basin's members realize there are certain risks involved in this purchase, but believe the potential long-term benefits to Basin, federal taxpayers, regional, state and local economies far outweigh those risks," he said.

But not everyone agreed that Basin Electric was the best choice.

According to a *Bismarck Tribune* editorial, ANG employees operating the plant for the DOE favored Coastal Corp. The newspaper said the Houston-based company "seemed committed to byproduct development," but then added that it faced a credibility problem in its commitment to keeping the plant open.

If Basin Electric became the new owner, the newspaper editorial stated, it had "big shoes to fill."

Reservations about Basin Electric's capabilities also came at a congressional hearing in September by two ANG employees as well as by Rep. Phillip Sharp of Indiana. Among the questions, the *Tribune* reported, was whether Basin Electric had the reserves necessary to guarantee the plant's survival, whether it could develop the legal and engineering expertise to maintain the operation, and whether it could convince current employees—some with specialized expertise—that they would have good career opportunities in the future.

However, Conrad and others affirmed that Basin Electric had the ability to operate the gasification plant. McPhail assured senators that Basin Electric had a strong incentive to operate the facility for the long term as well as quelling concerns about a possible federal bailout, should the gasification plant under perform for some reason. He said the Cooperative's acquisition of the plant would help to "protect and possibly enhance" the federal government's position as a lender to Basin Electric for electric operations.

Ultimately, the purchase passed congressional muster.

That set the stage for a momentous ceremony, the largest real estate transaction in North Dakota history, transferring the gasification plant from the federal government to Dakota Gas. The signing ceremony took place in Washington, D.C., on Oct. 31, 1988, attended by officers and directors of the newly formed Dakota Gasification and Dakota Coal companies as well as DOE officials. Among the documents signed by McPhail was a 6-foot by 2-foot check for $85 million made out to DOE from the two companies.[10]

Deputy Secretary of Energy Joseph Salgado called Basin Electric the ideal owner because it recognized the plant's importance to the local economy as well as giving assurances for long-term operation. The revenue-sharing plan was fair, he said, "and by waiving the production tax credit told us that it was buying the Great Plains plant as an energy production facility, not a tax shelter."

The DOE also made several commitments including leaving $15 million in working capital, setting up a $30-million trust fund for environmental improvements and establishing a $75-million trust fund as a cushion for any economic shortfalls.

Conrad came to Basin Electric's annual meeting in 1988. "Great Plains has been a prudent insurance policy against wild escalations in the price of oil and the accompanying disruptions to the economy of our country," he said, citing the comments of a Senate Energy Committee member. "This plant is a technological marvel, but it stands as more than an example of what America can technologically achieve. It stands also as a deterrent to energy blackmail by interests that otherwise would reap unjust rewards at the expense of the American consumer."[11]

10. *The New Synfuels Energy Pioneers*, 82.
11. *The New Synfuels Energy Pioneers,* 84.

Bob McPhail (left) and Deputy Secretary of Energy Joseph Salgado sign agreements on Oct. 31, 1988, transferring ownership of the gasification project from the federal government to Dakota Gasification Company. DOE attorney Lawrence Oliver looks on.

With the glitz of national ceremonies fading, Basin Electric and its new subsidiaries faced tough tests in connection with owning and operating the gas plant.

It had to reassure employees who were uncertain about their jobs, establish a management team, ensure the transition in ownership went smoothly and then demonstrate it had the ability to oversee operations of this unique and complicated energy facility.

Elected the first chairman of the Dakota Gas board was Louden, a staunch supporter of the purchase. The management team included McPhail as president and chief executive officer; Janssen, vice president and chief operating officer; Foss, general counsel; and Paul Sukut, chief financial officer. To lead plant operations, the company turned to Al Lukes, a North Dakota native who had been at the gasification plant since 1981.

Under its new ownership, the gasification plant officially became the Great Plains Synfuels Plant (Synfuels Plant). The Dakota Gas headquarters was established in the Jones-Lindberg building across the street from Basin Electric's home offices in Bismarck.[12]

At the outset, the new management team had to decide what to do about the facility's workforce. Dakota Gas, in effect, now had a plant that gasified lignite, but no employees to operate it.

Employees who had been working for ANG under DOE's ownership had to reapply for their positions. Some ANG employees elected to find other jobs after the purchase. Of 822 ANG employees remaining, Dakota Gas made offers to 778. "We hired the employees back that we thought we absolutely needed to run the plant," McPhail said in a 2007 interview.

That appealed more to McPhail, who three years earlier had overseen a major, painful layoff at the Cooperative. "That was a real advantage in not having to lay anyone off," McPhail said in 2007. "Everyone was laid off when we bought the plant, and then we hired them back individually."

Though it made the transition easier, Basin Electric and Dakota Gas had to overcome the reticence or, in some cases, fear of employees unsure about their future. "We had a concern of what to do to gain the confidence and respect of the employees at the plant," Janssen said. He headed up the management team that met face-to-face with employees at the plant site some 80 miles northwest of Bismarck. Besides employee concerns, the team addressed environmental needs, operations, byproduct development and other issues.

It all started working, as employee morale improved and outside interest in developing byproducts turned up quickly. On a trade mission trip to the Far East hosted by Conrad, Richard Weber, a Basin Electric assistant general manager, told a local newspaper in December 1988 that a Hong Kong bank had indicated it might be interested in investing $200 million in byproduct development and marketing at Great Plains. No formal offers came forward, however.

12. Named for Arthur Jones and Dennis Lindberg, two presidents of Basin Electric.—Ed.

The first year: complications and successes

Dakota Gas had a primary objective at the beginning: attain long-term financial stability for Great Plains that would, in turn, protect the contracts that Basin Electric had involving Antelope Valley Station.

To achieve that, Dakota Gas determined it had to lower the cost of producing synthetic natural gas, operate the plant at a high but safe level and aggressively pursue development of byproducts. Three byproducts were already being manufactured: anhydrous ammonia as a fertilizer, liquid nitrogen for enhanced oil recovery and refrigeration, and sulfur.

Developing more byproducts was especially important for Dakota Gas and Basin Electric. First, Dakota Gas could keep all revenue from byproduct sales, under the purchase agreement with the DOE. Byproducts could bring in $50 million annually, according to initial estimates. And with the cyclical nature of natural gas prices, diversification through added byproducts likely was the best approach for ensuring the plant's future.

In mid-1989, Dakota Gas took its first steps toward developing byproducts. The subsidiary board approved $25 million for separate facilities to make or recover two byproducts: phenol for resins for wood products, and rare gases (krypton-xenon) for the lighting industry. By July, the first contract was signed, a 15-year deal to sell all of the rare gases to a division of Union Carbide Industrial Gases.

Sales of the rare gases and phenol were projected to bring in about $13 million in sales per year.

The board also agreed to allow investigation into a methanol demonstration project, joining with a Pennsylvania company under possible Clean Coal Technology matching funds. It would produce liquid methanol for use as a motor fuel, gasoline additive and other uses, such as in antifreeze. Later, Dakota Gas withdrew from the demonstration project, as the pipeline companies purchasing gas would not allow any production to be diverted for making methanol.

This development would prove to be a harbinger of the rocky relationship Dakota Gas would face with its pipeline customers.

Carbon dioxide was identified as another byproduct for potential development, creating a synergistic benefit for both the Synfuels Plant and Antelope Valley Station. The state of North Dakota and the province of Saskatchewan were promoting the use of carbon dioxide for enhanced oil recovery in the Williston Basin, covering southern Saskatchewan, eastern Montana and western North Dakota and South Dakota, according to Basin Electric's *1989 Annual Report*. Liquefying all carbon dioxide produced at Great Plains would create an additional 60-megawatt load for Antelope Valley Station, and potentially a similar electrical load in the oil fields. Basin Electric members would benefit from the added electrical sales, and Dakota Gas would produce more revenue from sales of carbon dioxide.

However, obstacles lay ahead.

One problem had a direct impact on full byproduct development at Great Plains. In the original water permit for the gasification project, a condition required the plant to supply gas or byproducts for use within the state of North Dakota. With Dakota Gas acquiring the plant along with its permits, the company now requested eliminating that condition, contending that it would impede byproduct sales or investments. Dakota Gas felt it was an unfair condition and sent a negative message about the state to potential industrial developers. The North Dakota Water Commission agreed, and, in late 1989, voted to rescind that water permit condition.

Another major complication related to environmental compliance.

The Synfuels Plant had always met state and federal standards for outside air, but it never achieved tougher standards for removing a pollutant, sulfur dioxide, from its emissions. That had been part of the agreement between the plant's original developers and the state of North Dakota, based on the assumption that could be done with the best available control technology or BACT. However, the technology, called the Sulfolin

process, wasn't working as expected, and, as a result, the plant couldn't meet the air-pollution control condition in the original construction permit issued in 1977.

In a formal consent agreement with the state, Dakota Gas pledged to resolve the environmental problems, facing a $1 million penalty if it failed. The company first planned to upgrade the current sulfur removal system, but, after testing, proposed that a wet limestone scrubber—similar to those at electric generating plants—might work. However, the $100-million price tag was hefty, in addition to $10 million needed for annual operating costs.

Despite those early tests, Dakota Gas finished with impressive results in its first year of operating Great Plains.

Production records were set, including a new high for a monthly output average of more than 159 million standard cubic feet (MMscf) of synthetic natural gas per day in April 1989. Total production for 1989 averaged 7 percent above the plant's design capacity of 137.5 MMscf per day, while production costs were lowered 12 percent below projections.

Dakota Gas earned nearly $31 million in after-tax profits in its first 14 months. Under the profit-sharing agreement, it sent the DOE more than $11 million for that period.

George Hargens was Basin Electric president from Dec. 18, 1987, to Dec. 16, 1993.

With an impressive first year, Dakota Gas was assigned a financial rating by Dun & Bradstreet at the same level as its parent, Basin Electric. Notably, the financial services company had not assigned a rating for ANG, the former plant operator.

With that performance by Dakota Gas and its employees, McPhail and Hargens offered compliments in Basin Electric's *1989 Annual Report*. "Thanks to the outstanding workforce, high production levels were achieved and efficiencies were improved by combining the best operating and administrative practices of both Basin Electric and the Synfuels Plant."

It was a remarkable launch for a fledgling subsidiary in a new business. However, in the 1990s, Basin Electric and Dakota Gas would discover even more complexities of operating this one-of-a-kind energy facility.

Facing the challenging 1990s

Basin Electric's new subsidiary had excellent results in its first 14 months through 1989, but Dakota Gas encountered problems in 1990 that would not be resolved easily.

The synthetic natural gas produced at Great Plains was being purchased under separate 25-year contracts by four pipeline companies: ANR Pipeline Company, Natural Gas Pipeline Company of America, Tennessee Gas Pipeline Company and Transcontinental Pipe Line Corporation. All were affiliates of the original owners of Great Plains.

However, as Dakota Gas began increasing production beyond the design capacity of the Synfuels Plant, the pipeline companies balked. They felt they weren't required to take the extra gas. A dispute ensued, finally leading to Dakota Gas filing a lawsuit in federal district court in Bismarck in October 1990 regarding the amount the pipelines were obligated to purchase under their contracts.

The case also involved pricing, as the basis for setting the price for the gas had now changed to an average of a certain amount of the highest-priced natural gas each pipeline purchased on the open market. With deregulation of the natural gas industry, gas prices were dropping, causing more disparity between the higher-priced synthetic natural gas and market gas. In its suit, Dakota Gas contended that the pipeline companies had begun grossly understating the gas they were buying on the market, resulting in Dakota Gas being shortchanged by $76 million.

Within a month, the DOE formally joined Dakota Gas in the suit against the pipeline companies.

However, Dakota Gas still hadn't found an answer to the problem of environmental deficiencies at Great Plains. A wet limestone scrubber was under consideration to meet requirements for removing sulfur dioxide from the plant's emissions, but the $100 million cost was much higher than the $30 million trust fund set up by the DOE in 1988 to resolve environmental issues at the plant.

Despite these issues, at the Basin Electric annual meeting in November 1990, Janssen said a few lean years lay ahead because of low natural gas prices, but the long-term future for Dakota Gas looked bright.

With the subsidiary's initial financial success, Basin Electric members had been asking just how those profits would be used. At the 1990 annual meeting, they passed a resolution calling for a study of how profits from Dakota Gas and other subsidiaries could benefit members.

However, Dakota Gas soon faced a legal disappointment when a federal district judge dismissed the lawsuit against the pipeline companies in January 1991, prompting an appeal by both Dakota Gas and the DOE.

More frustration arose in byproduct development, as projects were not moving ahead as planned. Additional equipment had to be installed to eliminate the odors reported by companies in the wood industry that were using the resin produced by Dakota Gas. With changed market conditions, competitiveness and other hurdles, Dakota Gas decided not to try developing more byproducts for the immediate future.

By the end of 1991, a special membership committee on subsidiary profits had prepared its report. Presented by Donald Applegate, the subsidiary profits committee chairman and president of Northwest Iowa Power Cooperative, the recommendations included that subsidiaries establish long- and short-term financial and operational goals. The company was instructed to separate byproduct earnings from synthetic natural gas sales, pay an incentive fee to Basin Electric for providing administrative services and retain its funds to help ensure it has the capital necessary for environmental compliance and byproduct development.

Basin Electric's members then adopted the report on subsidiary earnings.

By 1992, natural gas prices remained volatile but had rallied from the past year. With higher production at Great Plains averaging about 160 MMscf per day throughout the year, profits for the subsidiary rose more than $27 million.

Dakota Gas received 90 percent of its income from gas sales to the four pipeline companies, emphasizing the importance of the long-term contracts. So, the decision in May 1992 by the Eighth Circuit Court of Appeals was welcomed, reversing the federal district court ruling from 1991 and sending the case back for trial.

Meanwhile, Dakota Gas officials had begun discussions in 1992 with Canada's largest oil company regarding a major byproduct project. They were talking with PanCanadian Petroleum Limited about a pipeline project that would move carbon dioxide from Great Plains to Saskatchewan for enhanced oil recovery.

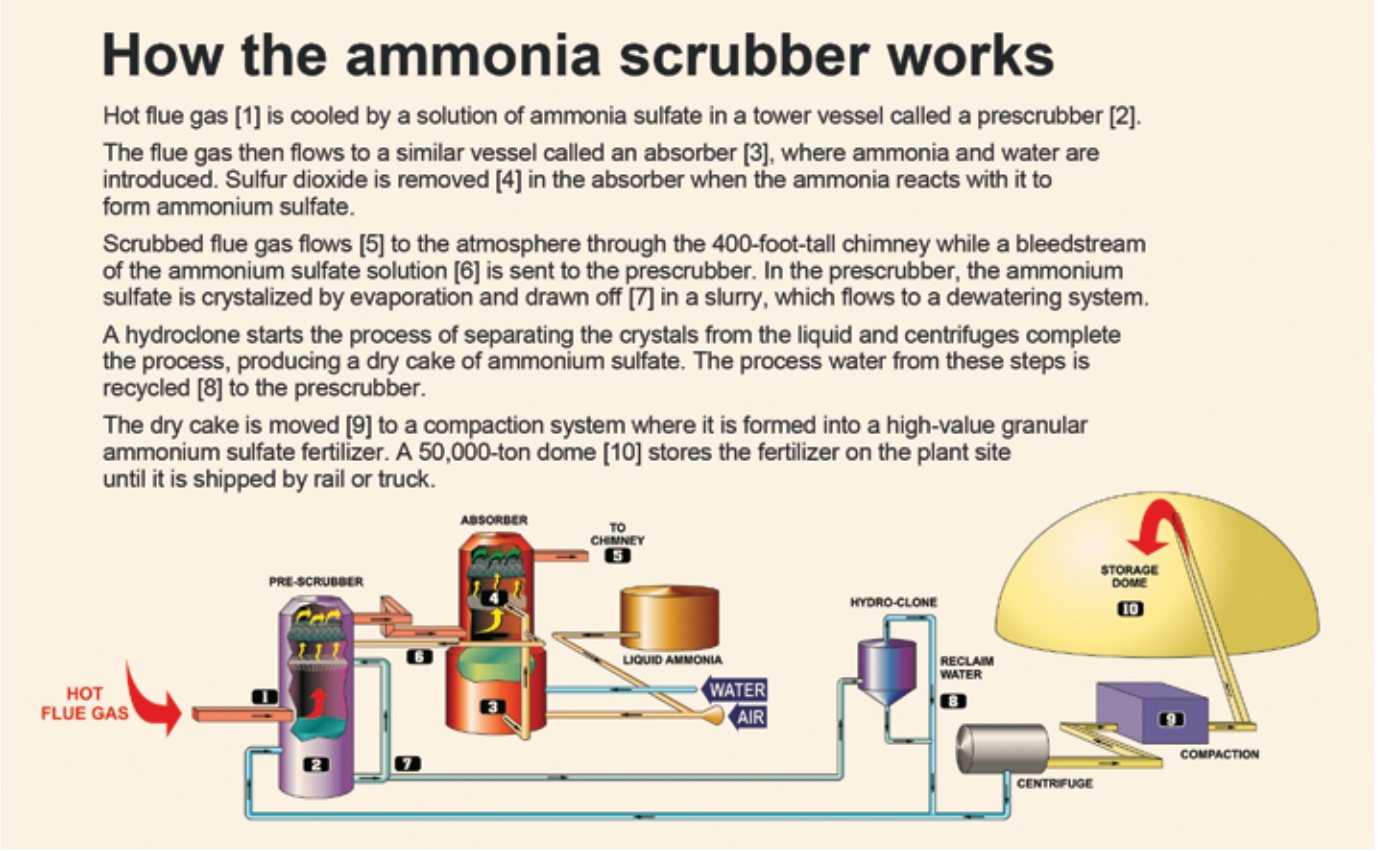
Within a year, the Dakota Gas board of directors authorized a study on the project.

Positive news: a 'ray of sunlight'

By early 1993, Dakota Gas received a revised permit to construct from the North Dakota Health Department that required installing a scrubber to remove sulfur dioxide emissions from the plant's main stack within four years.

However, instead of a conventional scrubber, Dakota Gas looked at the potential of using anhydrous ammonia as a reagent for the environmental control equipment. Instead of producing waste, the scrubber would produce ammonium sulfate, a valuable, high-grade fertilizer. Though a conventional scrubber would be less expensive, it carried an operational cost of $10 million year, according to Janssen.

About 200,000 tons of the fertilizer would be produced annually after it became operational in 1996. As construction began, the company immediately began



studying the market potential for this premium fertilizer. Within a few months, Dakota Gas hired a marketing firm, H. J. Baker & Bro. Inc. of Stamford, CT, to handle sales. The new fertilizer would carry the label DakSul 45® and be marketed wholesale.

Meanwhile, as the date approached for the federal District Court trial on the gas contract dispute, a major breakthrough came in March 1994. The four pipelines agreed to an out-of-court settlement, subject to approval by the Federal Energy Regulatory Commission (FERC).

Under the settlements, the pipelines would reimburse Dakota Gas about $37 million for past underpayments for natural gas and transportation. They agreed to pay the market price for the gas based on delivery to Ventura, IA, and also to make 84 monthly "demand" payments to Dakota Gas, in addition to paying market price.

The demand payments had a value then of $360 million. After those payments finished, Dakota Gas would be paid market price for its gas through the remaining term of agreements, expiring in 2009.

"The settlement is like a ray of sunlight. It has removed a dark cloud that has hung over the project since day one," said Bob McPhail, Dakota Gas president and CEO, at a news conference.[13] He credited the state's congressional delegation, including Sens. Kent Conrad and Byron Dorgan and Rep. Earl Pomeroy as well as Secretary of Energy Hazel O'Leary.

"This is a great day," Conrad said, at the same news conference. The settlements are good for Dakota Gas and employees because it assures the future of the plant and 600 high-paying jobs. It also represents a fair settlement for taxpayers with the government, in effect, getting $100 million as well as enhanced revenue sharing with Dakota Gas, he said.

Janssen offered tempered enthusiasm. "DGC will have to use the settlement dollars wisely to assure that it has a

13. "Settlement Like Ray of Sunlight," *Report,* Basin Electric Power Cooperative, April-May 1994, 3.

About 3,000 people gathered north of Beulah, ND, on Aug. 27, 1994, for an event billed as an energy "party on the prairie." It was the 10th anniversary of commercial operation for both the Antelope Valley Station and the Great Plains Synfuels Plant.

future after seven years," he said. "We will have to do all we can in the next few years to reduce our dependence on natural gas sales through the expansion of byproduct revenues and also continue to narrow the gap between our operating costs and the market price of natural gas."

Both the DOE and the pipeline companies issued statements in support. "This settlement makes sense for all parties involved, including the pipelines and their customers," the pipelines said in a news release.

With the settlements in place, Dakota Gas joined with Basin Electric in celebrating that achievement as well as 10 years of operation of both Antelope Valley Station and the Synfuels Plant.

**Hazel O'Leary,
U.S. Secretary of Energy**

U.S. Energy Secretary Hazel O'Leary attended, calling both plants "world class." Noting the settlements for Dakota Gas announced earlier in the year, she said, "The roller coaster ride is over, and that ought to feel good," according to a story in the October 1994 *Report*.

Also featured at the event was Art Seder, the former chairman of ANR, who had been at the center of the plan in the 1970s to gasify lignite to serve natural gas customers in the eastern United States. He expressed delight over the plant exceeding expectations and also

over the skills shown by Dakota Gas employees. Seder said he wouldn't make the same decision to build the plant because of the $500 million loss by the consortium in the 1980s. "On the other hand, if you asked me if I'm glad the project was built, my answer would be an equally definite yes," Seder said.

The celebration might just as well been about earnings; by year's end, Dakota Gas had net profit of more than $31 million in 1994.

Diversification needed for the future

Despite those achievements, Dakota Gas leaders felt they had to be cautious.

Natural gas prices had been falling the past two years, and prices were projected to remain depressed for the foreseeable future. With monies available from the settlement, Dakota Gas decided it had to seize the opportunity to diversify to help ensure the future of the synfuels operation. "The prospect for staying in business based on natural gas production alone has become remote," Janssen said in a *Report* story.

In January 1995, the settlements gained legal traction when FERC approved the company's deal with one pipeline, Natural Gas Pipeline Company. However, no approvals were in sight for the remaining settlements with the three other pipeline companies.

As part of its diversification plan, construction began in mid-1995 on a project that would produce about 1,000 tons per day of anhydrous ammonia. The fertilizer would be marketed and used in the new scrubber under construction.

Dakota Gas opted to purchase and rebuild a used anhydrous plant from Iowa that had closed, which was expected to cost less and enable Dakota Gas to more quickly take advantage of a good fertilizer market.

However, news on the settlements soon would dampen the future of Dakota Gas, continuing the roller coaster history of the nation's only commercial synfuels plant.

In December 1995, a FERC administrative law judge issued a preliminary decision, saying the settlements involving the three remaining pipelines weren't prudent and ordered the pipeline companies to make a $270 million refund to their customers. That would be money that would have to ultimately come from Dakota Gas. The law judge also set a new pricing mechanism for synthetic natural gas and limited the amount the pipelines were required to take.

Both Dakota Gas and Basin Electric's management knew that if the law judge's decision held, the plant would have to close. And while the issue remained in limbo, the pipelines were paying Dakota Gas $3.70 per dekatherm as provided in the settlement. In this interim, the demand payments owed by the pipelines were being reduced by the amount they were paying over the market price for the gas from Great Plains.

By this time, the value for the demand payments had now been reduced to $146 million. Janssen predicted that with continued depressed market prices, Dakota Gas could get more than 80 percent of its settlement monies by early 1997.

This financial analysis further underscored the urgency for the diversification efforts at the Synfuels Plant.

In the months after the chilling decision by the law judge, Dakota Gas and Basin Electric rallied friends and supporters from within the state as well as 24 members of Congress from eight states. They urged FERC to continue backing the long-term operation of this unique energy facility.

The pipeline companies also backed the settlements, saying their consumers were better off under them rather than the original gas purchase agreements.

After a full hearing, FERC announced in December 1996 approval of the settlements involving Dakota Gas, DOE and the three pipeline companies.

It was great news, as the order removed the threat of immediate closure of the plant. "The plant will have challenges in the marketplace, but the (FERC) ruling means that it will be free to compete," said Rep. Earl Pomeroy.[14]

14. *The New Synfuels Energy Pioneers,* 103.

Janssen agreed, but he cautiously pointed out the challenges that gas production costs remained above market price and that the company had already received more than half of its settlement monies.

Diversification remained the key to the plant's future. With an expansion into fertilizers, byproduct revenue could triple from sales in 1997, according to Ray Hattenbach, Dakota Gas general sales manager. The company also was looking at developing other byproducts, including cresylic acids, catechols and methylcatechols.

An international venture

By July 1997, the negotiations over a major diversification came to a successful conclusion. Dakota Gas signed a 15-year agreement with PanCanadian to deliver carbon dioxide for enhanced oil recovery by the end of 1999.

The deal was expected to greatly enhance the profitability of the Synfuels Plant, as well as extend the life of PanCanadian's aging Weyburn oil field in southern Saskatchewan.

The $110-million plan was for Dakota Gas to build a 205-mile pipeline to Weyburn along with a compressor station at the Synfuels Plant. The compression would require 30 megawatts of power purchased by Dakota Gas from Antelope Valley Station.

"This international energy project will help recover a valuable resource," McPhail said. "It will also boost the economies of Saskatchewan, North Dakota and the surrounding region because of the potential for enhanced oil recovery in the Williston Basin."

The contract would use about 40 percent of the carbon dioxide available from plant. And the pipeline will be designed for future increases in carbon dioxide sales by installing taps in the main line, allowing lateral pipelines to other fields in the Williston Basin.

PanCanadian estimated its investment in the project to be $1.1 billion (Canadian), with an additional 1,400 direct and indirect jobs created and $585 million generated in resource royalties and taxes.

New scrubber initially disappoints

In the fall of 1997, Dakota Gas received a formal notice of violation from the North Dakota Department of Health regarding environmental compliance at the Synfuels Plant. Dakota Gas had agreed to install a scrubber that removed at least 93 percent of sulfur dioxide from main stack emissions. However, the ammonia-based scrubber wasn't working as planned. It met the permit standards for sulfur dioxide removal and produced good fertilizer, but its operation had been inconsistent, according to Janssen.

Dakota Gas committed an additional $7 million to improve its reliability and resolve other issues. However, the scrubber also produced two other problems: emission of too much particulate and a related visible stack plume.

With that development, the company's finances suffered. The company achieved a record year in byproduct sales of more than $68 million, but its sales of synthetic natural gas were down and overall expenses rose. After several years of profits, Dakota Gas recorded a net loss of $11 million for 1997.

Within months, Dakota Gas would lose a key leader. In September 1998, Janssen retired as vice president and chief operating officer. He had more than 40 years in energy and was credited with serving the company through very difficult times. Named as his replacement was Al Lukes, the plant manager at Great Plains.

As 1998 came to a close, Dakota Gas reported positive progress, paving the way for construction of the carbon dioxide pipeline and environmental improvements at the plant.

DOE agreed to lift the waiver of production tax credits that was included as part of the purchase in 1988. The amended agreement would allow Dakota Gas to sell these credits to raise capital for the pipeline and environmental improvements, though it also included a repayment provision.

In December 1998, Dakota Gas reached a new consent agreement with the Health Department that resolved the violation notice it had received in the previous year. Under this agreement, the company likely would install

a wet electrostatic precipitator, which would remove the particulate and thus eliminate the visible plume coming from the plant's main stack.

But, low natural gas prices had a dampening effect on the company's financial outlook. Revenue dropped to $139 million, almost $6 million below 1997, even though byproduct revenue hit another record of more than $69 million. Of the total byproduct income, about $52 million came from the sales of the two fertilizers. As a result, Dakota Gas suffered a second straight deficit, losing $13 million in 1998, forcing the company to commit to a plan of reducing its operating costs by $12 million a year.

Gas prices rebound

For Dakota Gas, 1999 would prove to be a turnaround year, giving it a much brighter picture for the future.

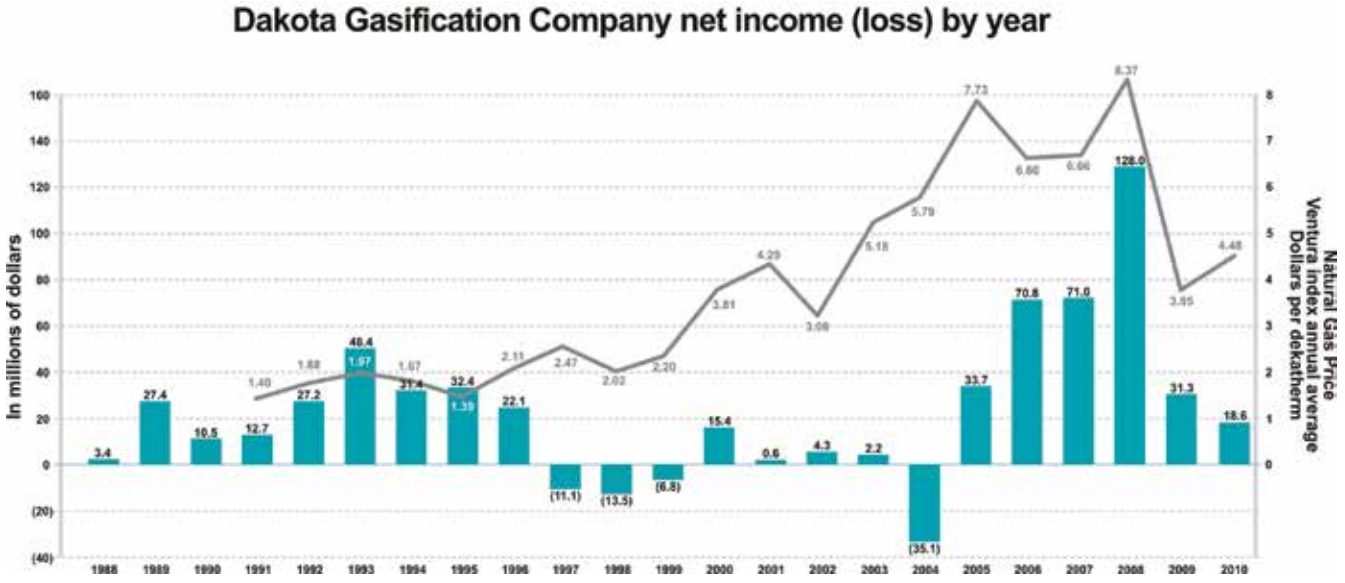
One major factor was a rebound in natural gas prices. Secondly, the company successfully cut operating costs by $20 million without impairing plant performance.

A financial transaction neared completion allowing Dakota Gas to use proceeds from the sale of production tax credits for environmental improvements and the carbon dioxide pipeline. However, this would have required that Dakota Gas sell the Synfuels Plant to a third party with an option to buy it back at the end of the transaction. The board of directors decided not to go forward with the transaction.

Dakota Gas also had begun using a financial transaction to hedge the pricing for natural gas to give the company more financial stability. Paul Sukut, Dakota Gas vice president of administration and finance, explained that hedging was used to ensure a price for a portion of its natural gas, foregoing benefits of high prices but avoiding the revenue drop from falling prices. In 1999, he said, hedging produced $3.5 million for Dakota Gas.

With this trend, Lukes said in Basin Electric's *1999 Annual Report* that he looked forward to substantial improvement by Dakota Gas in 2000.

Though the company recorded another loss in 1999, company management noted that it was down significantly from the deficit in 1998. They also pointed to the success from the $260 million invested in diversification, environmental and other projects in



The profitability of Dakota Gasification Company cannot be predicted solely on the price of natural gas. Prices received for other products, timing of investments to develop new products, investments in plant improvements, and plant maintenance, all play a role. In 2004 the entire Synfuels Plant was shut down for the first time in its operating history to inspect and maintain areas in the plant that cannot be inspected during operation.

the past 12 years. In 1989, the $4.3 million in byproducts revenue represented just 2 percent of overall revenue. Ten years later, revenue from byproducts reached $58 million, about 30 percent of total revenue.

By the end of 1999, the company had other reasons for optimism.

With its new scrubber, the plant had achieved more than 18 months of meeting requirements for removing sulfur dioxide from exhaust gases. In addition, the company had a successful run of a pilot plant confirming that a wet electrostatic precipitator could meet the required standards for removing particulate emissions and eliminating the plume. The equipment was to be operating by June 2003.

The final piece to this upturn came with the completion of the carbon dioxide pipeline by the end of 1999. Plans were moving ahead for PanCanadian to begin taking 95 million standard cubic feet of carbon dioxide by September 2000.

With carbon dioxide flowing northward, the project would add $15 million to $18 million annually in net income for Dakota Gas over the life of project.

With this major diversification, the Synfuels Plant would have more assurance of a long-term future.

Construction of the 167-mile portion of the carbon dioxide pipeline from the Great Plain Synfuels Plant to the Canadian Border started on May 12 1999, and was substantially complete by Oct. 1, 1999. Shown at left are the preparations for crossing Lake Sakakawea on the north shore. Five 2,600-foot sections of 14-inch pipe (with joints about every 60 feet) lay assembled for the crossing to begin.

Dakota Gas products

Beyond natural gas, the gasification process yields a valuable coproduct and byproducts, which Dakota Gas markets. The five-year production average (2006-2010) and end use are listed below.

Natural gas
53.0 million dekatherms

fuel

Ammonium sulfate
94,091 tons

DakSul® fertilizer

Anhydrous ammonia
152,302 tons

agricultural fertilizer

Carbon dioxide
46.0 billion standard cubic feet

enhanced oil recovery

Crude cresylic acid
27.3 million pounds

wire enamel coatings, vitamin E, antioxidants, pesticides, dyes, solvents, insecticides, semiconductor materials, electronic chips, alkylphenols, resins

Krypton/xenon gases
3.2 million liters

halogen headlights and lightbulbs, lasers, window insulation

Naphtha
8.7 million gallons

feedstock for benzene, toluene, and xylenes, gasoline additives, paint thinners, solvents

Phenol
29.1 million pounds

polycarbonate products, oral analgesics, household cleansers, automotive parts, oriented strand board, plywood, countertops, exterior siding, insulation

Bob McPhail: *Selected to lead Basin's transition*

Robert L. McPhail, the second general manager of Basin Electric, led the Cooperative's transition to an operating mode and the negotiations to purchase the Great Plains Synfuels Plant.

The man who headed one of the nation's largest electric and generation transmission cooperatives that serves the Upper Midwest traces his roots back to Mississippi.

Robert L. "Bob" McPhail, who served as the second general manager of Basin Electric Power Cooperative from 1985 to 2000, is a native of Calhoun City, MS. As a child, McPhail lived in several towns as his laborer father moved his family to follow jobs. During McPhail's early childhood, the family finally got electricity in their home, thanks to the Tennessee Valley Authority, a "New Deal" program that became the nation's largest electric supplier by the 1950s. His mother, he recalls, was particularly happy that she would get an electric washing machine and refrigerator, and each room had a single electric light bulb.

With America at war with communist forces in Korea in the early 1950s, McPhail decided to drop out of high school in his junior year and join the U.S. Air Force. After four years in the military, he returned to finish his high school education. McPhail's wife, JoAnne, grew up in the same area in Mississippi and was in the same high school graduating class.

They married and then moved so Bob could attend the University of Mississippi, eventually earning degrees in geology and geological engineering. While in school, he was recruited by the U.S. Bureau of Reclamation (the forerunner to the Western Area Power Administration) and offered a job as a civil engineer, though that wasn't his degree. "They rated me as a civil engineer, so I worked as a 'civil' for the bureau for 21 years," McPhail said in an interview in 2007.[1]

Working in several locations in his first 18 months at the bureau, McPhail decided he wanted some exposure to management training, so he volunteered to go into the agency's job corps program. That eventually led him to becoming a staff engineer in the office of the Assistant Secretary of the Interior for Water and Power in Washington, D.C.

1. Robert L. McPhail, interviewed by the author, Oct. 18, 2007.

After several years, McPhail was transferred to Billings, MT, becoming one of the youngest regional directors for the bureau. That move also gave him his first exposure to Basin Electric Power Cooperative in 1973, as he oversaw the marketing of power from federal dams in the upper Missouri region, with much of the electricity sold to member cooperatives of Basin Electric.

Under the administration of President Jimmy Carter, Congress created the federal Department of Energy in 1977. For about 75 years, the federal government had been marketing power in the western United States. Now McPhail was charged with transferring the bureau's power marketing functions to the new Energy Department and creating a new agency, the Western Area Power Administration. Western would become the largest of four federal power marketing agencies in the country.

In 1978, McPhail was offered and accepted the position as the first administrator of Western, which operated 15,000 miles of transmission lines and marketed about 8,000 megawatts of electricity to more than 500 wholesale customers in 15 states.

It was a big responsibility, and McPhail admittedly enjoyed taking over something he helped create.

Shortly after the birth of Western, McPhail wrote about the agency, comparing his working with many

Kent Janssen, chief operating officer of Dakota Gasification Company, and Robert McPhail confer on the operations of the Great Plains Synfuels Plant.

different customers to following a recipe in a cookbook. "Defying an old cliché, McPhail believed that many cooks could work together to produce a well-balanced federal-customer menu: 'The real recipe calls for many things. The basic ingredient for Western's success is best exemplified by the close working relationship between preference customers and (Western).'"[2]

Not everyone was convinced the agency would survive, and, in fact, there were challenges to its authority, including from Tri-State Generation and Transmission Association of Denver. Western's management consciously worked to allay those fears and improve relations with Basin Electric's Class A member, Tri-State, eventually leading to joint projects and agreements.

2. *Serving the West: Western Area Power Administration's First 25 Years as a Power Marketing Agency*, (Western Area Power Administration, 2002), 77.

McPhail's role in successfully launching Western earned recognition. At a White House ceremony on Dec. 19, 1983, President Ronald Reagan awarded McPhail the rank of distinguished executive in the Senior Executive Service. The award went to selected career professionals for sustained extraordinary accomplishments in management of government programs.

After more than six years heading Western, McPhail admitted years later to some boredom in the job. "We had it all set up and it was running smoothly," he said. "I was looking for something new and different."[3]

He applied for a position with Cajun Electric Power Cooperative in Louisiana, but, after hearing of the announced retirement of Basin Electric General Manager James Grahl, he also decided to interview for the job in Bismarck.

3. McPhail, interview, Oct. 18, 2007.

McPhail said, in 2007, he didn't think he had a chance to replace Grahl at Basin Electric and went on for the interview at Cajun in Baton Rouge. However, McPhail recalled that then-Basin Electric President Clarence Welander called him while at the interview in Louisiana and offered the job at Basin Electric.

It was an offer that pleased both McPhail and his wife, JoAnne. "I had worked with Basin Electric in various capacities since 1973," he said, in his retirement story. "Basin was one of the big players in the Missouri Basin."[4]

It was. Basin Electric had grown to become one of the largest generation and transmission cooperatives in the country. The cooperative had been building and expanding to meet member power needs, but, with a sluggish economy in the early 1980s, the economy turned things around. Basin Electric now had about 1,000 megawatts of power surplus to its member needs, wholesale electric rates had grown to record highs, and the workforce appeared too large, given that the Cooperative's growth had subsided.

In the transition to a new general manager, Basin Electric was looking to chart a new direction, moving from the construction and expansion phase to an operations and maintenance mode.

4 Daryl Hill, "McPhail calls it a career after 15 years at Basin Electric," *Basin Today,* January-February 2000, 7-8.

At a White House ceremony in 1983, Robert McPhail accepts the rank of distinguished executive in the Senior Executive Service from President Ronald Reagan.

Early in 1985, McPhail and his management team put together a plan to control costs and stop rate increases. Part of that plan included a major layoff of about 200 employees that year at the Cooperative. "That was the most difficult thing I've ever had to do," McPhail said. "They were all competent, good people, but we didn't have enough work for them."[5]

Other generation and transmission cooperatives had overbuilt as well, facing similar problems with a handful even going into bankruptcy.

Marketing became a vital focus for Basin Electric, including selling power to investor-owned utilities at prices lower than member cooperatives had to pay. That wasn't popular with some members, and McPhail admitted that was a "hard sell" to convince members of the need for that strategy.

But it was absolutely necessary, in the view of McPhail and other managers. In his 2007 interview, McPhail noted, "It was pretty obvious to me that if we hadn't done those things, Basin would have had to reorganize or do something different, and it probably wouldn't be the organization it is today."

Another key decision came in the late 1980s as the federal government abandoned the nation's only commercial gasification plant that had been built alongside Basin Electric's new Antelope Valley Station. That put pressure on the cooperative, which had counted on power sales to the gasification facility as well as other synergies with its new electric station.

McPhail headed the effort that led to Basin Electric purchasing what would be called the Great Plains Synfuels Plant through a subsidiary, Dakota Gasification Company, created for that purpose. With the plant's subsequent up-and-down economic fortunes, some suggested at various times that this "white elephant" should be sold.

McPhail and others doggedly resisted that idea. Instead, through the innovative suggestions of Kent Janssen, Dakota Gas vice president and chief operating officer, the

5. Hill, *Basin Today.*

company succeeded through a series of strategies. Key among them was developing an international carbon dioxide business and building a pipeline to Canada to sell the carbon dioxide for recovering oil there.

With that and other moves, the Synfuels Plant has proven to be profitable in the long run. Combining diversification and a list of cost-containment efforts, Basin Electric put a halt to an unenviable record of 15 straight years of wholesale rate increases. The cooperative reduced its member rates from about 56 mills to about 35 mills per kilowatt-hour in the McPhail era.

By 2000, McPhail decided it was time to retire, spend more time with his family and, as he said then, "smell the roses."

He said he was honored to be part of the success achieved during his time at the helm of the Cooperative. "My philosophy has always been to hire people who are smarter than I am and then to delegate to them and trust them and follow up to see if they are really doing what I wanted them to do," McPhail said in 2007.[6]

At his retirement in 2000, McPhail reflected on history. "It's just amazing when you look at what Basin Electric was when it started and where we are today … it's a small miracle. No one thought a group of farmers and ranchers could put together a great organization like Basin Electric."[7]

Basin Electric President Wayne Child and Robert McPhail in the board room, where all the big decisions of the Cooperative are made. The photo was taken for the *1996 Annual Report.*

6. McPhail, interview, Oct. 18. 2007.
7. Hill, *Basin Today.*

Chapter 7

Basin Electric achieves a turnaround in the 1990s

As the 1980s ended, Basin Electric had found itself in an improved position for a new decade. Reduced interest rates, low water levels in the Missouri River system and the benefits of the Antelope Valley Station leveraged lease also helped immensely.

Management and the board of directors had focused on strategies that would stem the course of steadily increasing wholesale power rates in the 1980s, peaking at an all-time high of more than 5.6 cents per kilowatt-hour in 1987. (See Appendix A.) Facing similar economic and overbuilding issues, other generation and transmission cooperatives across the country also had boosted rates. Some merged, and others failed.

Howard Easton

"Basin Electric's rates were quite high at that time, and the effort was to stop construction as fast as we could, sell as much power as we could on the surplus market and hang on until things got better," recalled Howard Easton, retired assistant general manager for Marketing and Member Services, in an interview in 2007. "It was very difficult, from about 1984 to 1989 or 1990. A lot of angry individuals, people talking to us all the time about selling off resources. … We were able to toe the mark very well."[1]

In particular, Basin Electric had about 900 megawatts of power more than its members could use.

The Cooperative focused its efforts on reducing costs, increasing operating efficiencies and aggressive marketing of that surplus electricity. In November 1989 General Manager Robert McPhail declared that the Cooperative had reached a turnaround. Basin Electric's wholesale electric rate was beginning to drop, and the outlook for avoiding rate increases looked better.

"Our goal over the past few years has been to try to achieve rate stability," McPhail said at the 1989 annual meeting. "A few years ago, that seemed impossible. Today we've been able to hold the wholesale power rate level again for another year."

The latest 10-year financial forecast indicated that rate stability could continue throughout the 1990s. As usual the prediction included a caveat that member systems would meet their growth projections, which was estimated at 2.5 percent annually.[2]

Part of this turnaround resulted from a bittersweet circumstance. Drought had been plaguing farms and ranches in the upper Missouri River Basin since the mid-1980s. With the extended drought, there was less water in the river systems, and the Western Area Power Administration was buying power to make up for low

1. Howard Easton, interviewed by Andrea Blowers, May 23, 2007.
2. *1989 Annual Report*, Basin Electric Power Cooperative, 2.

hydroelectric production. As a result, Basin Electric was able to sell more surplus power to Western so it could meet its commitments to the region's preference customers, such as municipal systems and rural electric cooperatives.

Besides those sales, Basin Electric also made several long-term surplus sales, including to Public Service Company of Colorado, Montana Power Company, Montana-Dakota Utilities Co., Midwest Power and Municipal Energy Agency of Nebraska. Those were in addition to the ongoing 90-megawatt sale to Basin Electric's subsidiary, Dakota Gasification Company (Dakota Gas), for the Great Plains Synfuels Plant.

Basin Electric emphasized continued efficient operation of both its transmission and generation facilities.

During this period, power plants operated by Basin Electric remained consistently among the top 20 in the nation for low-cost production. In 1988, the Utility Data Institute ranked the Antelope Valley Station near Beulah, ND, as No. 1 in low-cost electric production among more than 400 coal-based power plants in America. The Laramie River Station near Wheatland, WY, ranked No. 3 while the Leland Olds Station at Stanton, ND, ranked 19th. Throughout the decade of the 1990s, these plants were among the lowest-cost electricity producers in the country and a source of pride for Basin Electric and its members.

Low-cost fuel served as the primary, underlying factor for those efficiency rankings. In addition, the Cooperative had found new ways to ensure a long-term, stable fuel supply for its electric generating at reasonable cost.

A key in that strategy came with acquisition of the Great Plains Synfuels Plant and the accompanying lignite reserves at the Freedom Mine. The mine's thick seams make the lignite more economical to recover while the heating content was higher than elsewhere in the state, according to Kent Janssen, vice president and chief operating officer for Dakota Gas.

Since the idea of acquiring the Synfuels Plant first surfaced, Janssen had emphasized how the purchase brought with it a vital asset in those lignite reserves.

Two Freedom Mine draglines generally operate 24-hours a day, seven days a week to remove overburden from coal seams. They each weigh 13 million pounds and move 150 tons of earth per minute. The buckets hold 124 cubic yards of earth, which is equivalent to 2,770 bushels of wheat or a half million golf balls.

More control of the Freedom Mine had more significance as Basin Electric expected to close Glenharold Mine, which supplied Leland Olds Station, by the mid-1990s. Having access to the Freedom Mine would allow the Cooperative to consolidate fuel supply for its North Dakota plants and thereby reduce costs for lignite.

Another major factor in assuring low-cost fuel came in Wyoming. Laramie River Station was served by coal purchased from local coal companies and on the open market by Western Fuels Association, a cooperative fuel supplier for consumer-owned utilities. Renegotiated coal contracts meant lower-cost fuel for Laramie River Station, strengthening the effort for rate stability for Basin Electric.

However, the fuel-supply situation was further improved with the announcement that a new mine, Dry Fork, was being developed in 1989 by subsidiaries of Western Fuels and Phillips Coal Company. The 7,000-acre mine, with reserves estimated at 270 million tons, was expected to supply Laramie River Station with about 3 million tons of low-cost, low-sulfur coal per year beginning in late 1990.

With that mine, "we're ensured a dependable, long-term, low-cost supply of sub-bituminous coal" for Laramie River Station, noted Basin Electric President George Hargens and McPhail, in the Cooperative's *1989 Annual Report*.

That fuel source helped the Cooperative in other ways as well.

New or revised environmental laws were being proposed nationally that greatly concerned utilities operating coal-based plants. By the mid-1990s, proposals gained traction nationally to restructure the nation's utility industry, which would emphasize a competitive need for low power costs.

The decade began with Americans focused on the Middle East as the United States unleashed its "thunder and lightning" attack against Iraqi forces that had invaded its neighbor, Kuwait. The short war, Operation Desert Storm, again had America thinking about its continuing dependence on foreign oil.

Clean Air, global climate change and dropping rates

By early 1990, amendments to the 1970 Clean Air Act were being proposed. Basin Electric's management warned about the path being taken by Congress, saying that proposed changes not only could be costly to consumers but also severely restrict the future of the Cooperative and its members.

These legislative proposals were intended to restrict the emissions of sulfur dioxide and nitrogen oxides from coal-based power plants. Basin Electric maintained that those utilities across the country that had invested in pollution control equipment should be given credit for those actions. The Cooperative already had invested more than $400 million for such equipment at its three baseload, coal-based generating plants.

Basin Electric CEO Bob McPhail (standing) met with U.S. Sen. Quentin Burdick of North Dakota on various power supply issues. Burdick was chairman of the Senate Environment and Public Works Committee when amendments to the Clear Air Act were signed into law by President George H. W. Bush on Nov. 15, 1990.

It was clear that the changes would cause more problems for older coal-based power plants, such as Leland Olds Station, that lacked scrubbers for removing sulfur dioxide from plant emissions. That environmental control technology had been installed on Basin Electric's newer plants in addition to technology that produced lower emissions of nitrogen oxides.

Through the efforts of North Dakota Sen. Quentin Burdick and other Congressional delegates from member service areas, that initial legislation was amended making it more acceptable for Basin Electric and other coal-based utilities. However, the legislation would restrict the operation of Leland Olds Station, unless expensive scrubbers were added, along with equipment to lower emissions of nitrogen oxides.

As amendments to the Clean Air Act were considered, the issue of global climate change had begun to gain attention around the country and the world. It was a topic that led to open skepticism among some scientists, and challenges by U.S. business interests and those in the coal-based power industry, including Basin Electric.

At the Cooperative's annual meeting in November 1990, a computer expert from Los Alamos National Laboratory in New Mexico spoke about the uncertainty of relying on computer-based climate models to develop policies on global climate change. Michael Berger said international pressures were building on America to begin developing policy regarding the greenhouse effect. "It's a very complex problem and the computer models now being used are very simple," he said. "I don't think we should go rushing off to make decisions based on incomplete knowledge using computer models that need a great deal of work."[3]

Along with others in the country, Basin Electric wasn't convinced about the reported impact from a greenhouse effect. A resolution adopted at that annual meeting "recognizes it is not scientifically clear that global climate change is being induced by mankind's activities or to what extent." More knowledge is needed to better understand the issue, the resolution stated.

Operationally, Basin Electric's management had good news for members, namely that average wholesale rates would drop to about 4.9 cents per kilowatt-hour in 1991. "A key to maintaining Basin Electric's financial position is to maintain our financial flexibility," Hargens and McPhail said in a joint message in the Cooperative's *1990 Annual Report.* "We will try to keep as many financing options available as possible because attempts will continue to dismantle the traditional rural electric lending system."

The outlook for Basin Electric looked promising for the foreseeable future. "We anticipate that the overall energy markets in Basin Electric's service area will tighten within the next five to 10 years because utilities are not building baseload generation," said Hargens and McPhail. That means higher prices for available surplus power, and this should put Basin Electric into an excellent position to face the future with existing generation for member growth and for the surplus market, they said.

The Cooperative will not need to build power generation for the foreseeable future, McPhail said in that report, but investments will be needed for fuel supply and for continuing operations, in addition to Dakota Gas requiring funds for developing byproducts and controlling emissions at the Synfuels Plant.

Lime processing and "no-regrets" policy

With changes in the Clean Air Act, the Environmental Protection Agency (EPA) readied implementing regulations in 1991. Among the requirements was a standard to continuously measure stack emissions at coal-based power plants.

Basin Electric responded by testing a continuous emission monitoring (CEM) system at Laramie River Station. All coal-based units needed to have this equipment by 1994, with power plants mandated to establish baseline data on emissions of sulfur dioxide, nitrogen oxides and carbon dioxide.

The Clean Air Act amendments established a phased approach, initially focusing on power plants emitting the largest amounts of sulfur dioxide. For Basin Electric, its power plants fell into Phase II, allowing time until the year 2000 for meeting the lower emissions standards. The act allowed power plants that operated below the

3. Basin Electric *Report,* December 1990, 10.

To help control costs of the Clean Air Act amendments, Basin Electric subsidiary, Dakota Coal, built a lime kiln. Lime is used for water treatment and in power plant scrubbers to remove sulfur dioxide emissions. The kiln is 1.5 miles north of Frannie, WY.

emission standards to earn credits or allowances that then could be sold.

These credits would become valuable, either for a utility wanting to build new plants or to keep older facilities open that couldn't meet the standards without expensive fixes.

Operationally, significant changes were under way in 1991.

Dakota Coal Company moved ahead with plans to develop a lime-processing plant near Frannie, WY, that would be operational by 1993. Lime is used for water treatment as well as in the environmental equipment to remove sulfur dioxide from power plant emissions. Previously, lime had been purchased from suppliers. Now Dakota Coal wanted to develop a second source to produce 400 tons per day from a quarry near Warren, MT. It would ensure a lime supply for the Cooperative's power plants, while also helping to control the costs of meeting the Clean Air Act amendments. It also could provide lime for the Synfuels Plant and sell to other customers.[4]

Meanwhile, design proceeded on a rail unloading facility at Leland Olds Station as the phase out of Glenharold Mine continued. The rail-unloading site would accommodate transporting lignite from the Freedom Mine when mining at Glenharold ended in 1993. In addition, a rail spur and load-out facility had been constructed at Antelope Valley Station for moving the coal about 35 miles to Leland Olds Station.

As part of that plan, Basin Cooperative Services (BCS), a Cooperative subsidiary, had sold part of the Dakota Star Reserves in late 1990 to The Coteau Properties Company. Mining those reserves could be done better by Coteau as part of the Freedom Mine, BCS determined.

Meanwhile, global warming gained more headlines worldwide, and more attention by the Cooperative. Early in 1991, the board of directors approved an environmental action plan. The plan included supporting legislation and programs on conservation, expanding efforts on recycling and tree plantings, and supporting research.

At the annual meeting in November, the agenda focused on global warming.

Delegates to Basin Electric's annual meeting endorsed President George H. W. Bush's "no-regrets" policy regarding global warming. In summary, the policy outlined a precautionary approach to the issue,

4. New site picked for lime processing unit, *Report,* Basin Electric Power Cooperative, September/October 1991, 10.

promoting actions that would be considered prudent, regardless of the potential for global warming changes.

The National Rural Electric Cooperative Association and other utilities had already endorsed the policy.

As a final game changing event, Congress passed the Energy Policy Act of 1992 in October including "open access" for wholesale transmission services as well as enlarging transmission capacity. This act set in motion significant changes for Basin Electric and its members as deregulation of the electric utility industry began.

Btu tax, deregulation and surplus power

A new energy tax appeared in early 1993. Aimed at reducing the federal deficit by incoming President Bill Clinton, the proposal would tax energy based on its energy content or British thermal unit (Btu) value. That meant the highest rates would be levied against oil followed by coal and natural gas.

"The higher rate on oil is intended to promote energy security and the use of cleaner burning fuels," Clinton said, in his economic message to Congress. "Energy taxes will encourage conservation by making energy more expensive, reducing pollution and decreasing the country's dependence on foreign energy suppliers."[5]

Basin Electric determined the plan would mean an increased annual cost of $47 million for the Cooperative and a wholesale rate increase of up to 12 percent for members, according to a March-April 1993 Report story.

For Dakota Gas, the tax was estimated up to $37 million, possibly resulting in closing the Synfuels Plant.

Congress rejected the Btu tax thanks partly to a united effort by rural electric cooperatives, including Basin Electric and its members.

With the Btu tax gone, Basin Electric actively supported President Clinton's budget program, which also contained provisions allowing for prepayment or refinancing Federal Financing Bank (FFB) debt. Thanks to that provision, Basin Electric refinanced about $493 million in FFB debt in early 1994, realizing a

5. "What we must now do: President Clinton," *Report,* Basin Electric Power Cooperative, March/April 1993, 6.

A train leaves the Antelope Valley Station live-coal storage building, making the 30-mile run to Leland Olds Station loaded with coal from the Freedom Mine.

significant savings in operating costs that year and in the future. Repricing this debt was projected to produce future savings of more than $111 million.

A milestone was reached in June 1993 when the last shipment of coal left the Glenharold Mine for Leland Olds Station. The mine, which had its first lignite shipment in 1965, now ceased mining operations because the remaining reserves were no longer economically recoverable. Fuel for Leland Olds Station would be transported by rail from the Freedom Mine.

"We saw significant changes this year with the end of production at the Glenharold Mine and the opening of the Wyoming lime plant," said Rich Fockler, Basin Electric's operations manager, in *Report* magazine. "Both events represent our plans to control costs and help position us positively, in regards to our resources, for the future."

By the end of 1993, the economics for Basin Electric members appeared even more positive. The average

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Glenharold Mine: *a legacy of coal*

This article is reprinted, in part, from the July 1993 Report magazine.

The first shipment of coal from the Glenharold Mine near Stanton, ND, was delivered across the road to the Leland Olds Station Sept. 13, 1965. The last shipment was delivered on June 9, 1993.

In 28 years Glenharold Mine created a legacy: some 55 million tons of coal were produced; ownership of the mine changed hands three times; there was a strike; production records were set; a legacy of mined-land reclamation was established; the booms of both draglines collapsed, and employees gained national recognition for working safely.

The mine expanded to meet the demands for coal, reaching peak production of more than 3.8 million tons a year in the late 1970s and 1980. Employment during that time reached almost 200 people.

Basin Cooperative Services (BCS), a subsidiary of Basin Electric, owned the Glenharold Mine from 1982 and operated until closure in 1993.

Early history

Glenharold Mine was developed by the Truax-Traer Coal Company, and its name is a combination of the names of Harold Truax and Glenn Traer. Even though Truax developed the mine and signed the fuel-supply agreements, Consolidation Coal Company (CONSOL) operated it. CONSOL purchased the Truax-Traer Coal Company in 1965.

One of the early distinctive operational features was a German-made Lauchenhammer wheel excavator to uncover the coal seam. The wheel excavator was only used about two years because the soil contained rocks that were too big for the machine to move.

The mining wheel was dismantled and relocated to a mine in Illinois that had fewer rocks. Following that, draglines were used at Glenharold to uncover the coal seams.

Under Basin Electric's coal supply agreement with CONSOL, the Cooperative paid for reclamation costs separately, although they were included in the price of coal. This arrangement provided direct control over reclamation practices.

BCS ownership

On Oct. 15, 1981, Basin Cooperative Services (BCS) was incorporated as a wholly owned subsidiary of Basin Electric. In January 1982, the mine and other coal reserves were purchased by BCS for $26 million. As part of the purchase agreement, CONSOL operated the mine until January 1986 to help BCS make the transition to owner-operator.

The mine was purchased to control fuel costs and mining activities. This was new territory because it was the first time a cooperative had formed a wholly owned subsidiary. BCS not only became the operator of the mine, but managed several other "non-utility" functions.

A distinctive feature in the early years at Glenharold Mine was the German-made Lauchenhammer wheel excavator, used only two years because the soil contained rocks too big for the machine to move.

Many of the original CONSOL employees decided to continue employment with BCS rather than relocate within the CONSOL system outside of North Dakota.

Lignite from the Glenharold Mine was also sold to area residents for home heating. In early 1984, BCS considered eliminating the "commercial sales" tipple. However, a petition drive by area customers and residents persuaded BCS to retain it.

Vern Laning

In January 1982, Vern Laning was named the first mine manager under BCS ownership. He had been the plant manager at Leland Olds Station. It was a new experience moving from a power plant atmosphere to a mine. "When I was at the power plant I sometimes criticized the mining operation," Laning said. "Now I had a chance to do something about it. It was interesting trying to improve the efficiency at the mine. This was our opportunity to make changes."

Laning was mine manager until March 1991, when he was named manager of the Antelope Valley Station, Beulah, ND. Don Syverson, general maintenance superintendent at the mine, replaced Laning as mine manager in July 1991. Syverson was formerly plant manager of the William J. Neal Station, Velva, ND. He started working at the mine when the Neal Station was mothballed in 1985 because economic conditions no longer warranted its operation.

Don Syverson

Both Laning and Syverson said BCS brought a new operating philosophy to the mine. "BCS bought out a year of CONSOL's management contract for about a million dollars, but it was definitely a good move," Laning said. "We more than paid it back the first year through various cost-saving efforts."

Syverson said, "When BCS took over the mine operation, dragline availability was somewhere in the 60-percent range. The scraper fleet had an availability of about 70 percent. The dragline finished with an availability around 90 percent and the scraper fleet was running around 97 percent."

In 1990, the dragline crew for the 69-cubic-yard capacity dragline set monthly and average daily production records for moving overburden (the material between the subsoil and the coal seam). The dragline removed a record 1.6 million cubic yards of overburden in October 1990. The average daily record of 75,200 cubic yards was set in November 1990. The dragline established the production records because a new, lighter bucket had been installed a year earlier.

Leland Olds Station fuel supply

In the mid-1980s, only one unit at Leland Olds Station operated because of low demand for electricity. The coal stockpile swelled. In 1982, a three-day work week was initiated at the mine to reduce deliveries. This, in turn, affected production levels at the mine, and was one of the primary reasons for reductions in force in 1985 and 1986.

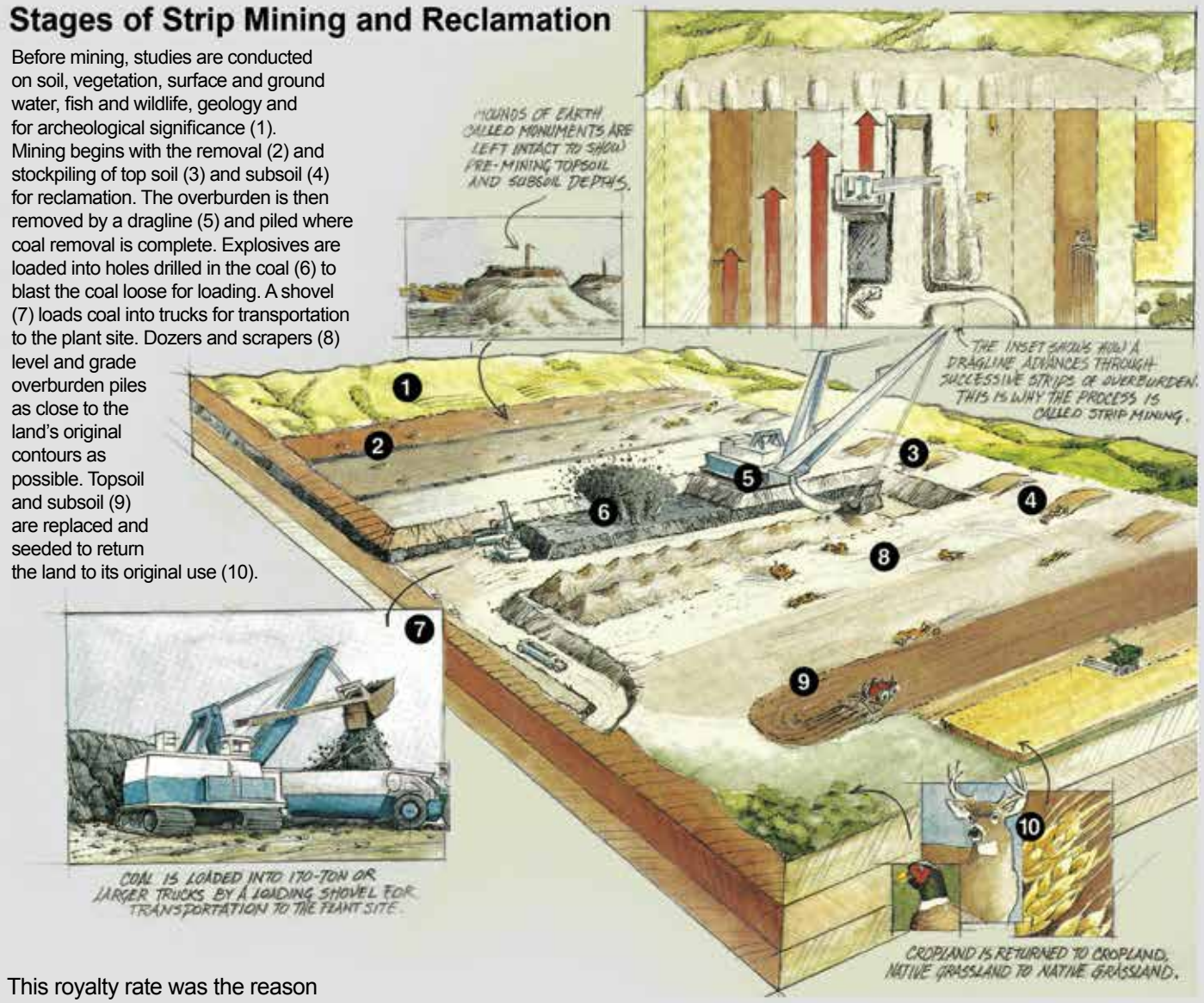
As loads began to increase, coal production from the mine was supplemented during the winter of 1989 and 1990. Coal was loaded on to trucks and hauled from Antelope Valley Station to Leland Olds Station, a distance of about 30 miles.

Wayne Otterness

Many areas of the Glenharold Mine contained coal owned by the U.S. government. These areas were controlled by several agencies of the U.S. Department of the Interior. A royalty rate of 12½ percent of the gross selling price of coal was paid to the federal government when federally owned areas were mined.

Stages of Strip Mining and Reclamation

Before mining, studies are conducted on soil, vegetation, surface and ground water, fish and wildlife, geology and for archeological significance (1). Mining begins with the removal (2) and stockpiling of top soil (3) and subsoil (4) for reclamation. The overburden is then removed by a dragline (5) and piled where coal removal is complete. Explosives are loaded into holes drilled in the coal (6) to blast the coal loose for loading. A shovel (7) loads coal into trucks for transportation to the plant site. Dozers and scrapers (8) level and grade overburden piles as close to the land's original contours as possible. Topsoil and subsoil (9) are replaced and seeded to return the land to its original use (10).



This royalty rate was the reason for bypassing some areas of the mine. "It's very expensive to bypass an area," said Wayne Otterness, manager of fuel supply for Basin Electric. "You literally have to stop mining, pull up stakes, go around the area and start again. However, these areas had lower-quality coal and the higher royalty rate made it uneconomical to mine. After repeated attempts to reduce the royalty rate at the federal level, we decided to bypass these areas to keep fuel costs competitive."

Reclamation

At one time the Glenharold Mine was one of the largest coal mines in North Dakota. "It also carries with it a proud, pioneering tradition in the area of reclamation and reclamation research," Syverson said. "Many of the standards that are used in reclamation today were developed at Glenharold Mine."

A large research area is used by the Agricultural Research Station in Mandan, which is part of the USDA. "At the research site, studies were conducted to establish the minimum amount of topsoil and subsoil that needs to be re-spread on reclaimed land to achieve maximum plant development," Syverson said. "The knowledge gained from these experiments showed the optimum

topsoil depth at which maximum plant development was the greatest and was the basis for information used to change reclamation requirements by the North Dakota Public Service Commission."

The cost of reclamation was a substantial portion of the cost of coal. For example, in 1978, the costs of reclaiming 262 acres of mined land was $7,840 per acre. This accounted for 57.4 cents of each ton of coal. As reclamation laws became stricter, costs increased. In 1979, the total to reclaim 290 acres of mined land was nearly $3.3 million—about $11,325 per acre, adding $1.25 to the cost per ton of coal.

The results of reclamation were shown in 1979 when a yield of 33 bushels of wheat per acre was harvested from 16.4 acres of reclaimed land at Glenharold. As the years passed and more land was reclaimed, yields continued to be as good or better than county averages. In 1983, reclaimed land yielded 27 bushels of wheat per acre. The county average was 22.7 bushels per acre.

In 1990, reclamation efforts at the mine were recognized when the federal Office of Surface Mining awarded its Excellence in Surface Mining Award to Glenharold Mine employees.

When the last shipment of coal went to Leland Olds Station, more than $58.8 million had been spent to reclaim 4,050 acres. The price per ton of coal was $13.39.

Strike!

When BCS purchased Glenharold, United Mine Workers of America (UMWA) representation continued. Ownership of the mine changed hands in the middle of a work contract expiring in March 1984. Even though negotiating sessions were held, no agreement was reached and a strike was called for March 22, 1984. At that time, the UMWA represented 137 miners at Glenharold.

The strike was settled Aug. 6, ending the 133-day work stoppage when a new four-year contract was signed. Although there had been strikes at Glenharold before BCS assumed ownership, this was the first and only work stoppage experienced by BCS or any of Basin Electric's facilities.

In August 1988, a five-year labor agreement was signed between the UMWA and BCS after only a few negotiating sessions.

Legacy established

Rich Fockler, manager of Operations and Engineering, said the legacy of Glenharold Mine is that it was one of the first large mine-mouth operations in the state. "There were certainly larger mines in North Dakota at the time, but this was one of the first applications of developing a coal mine for a specific power plant."

Fockler said one of the very reasons for choosing the Glenharold Mine site turned out to be a very expensive one. "The mine was chosen primarily because it wasn't good for farming. It wasn't quality pasture and had a lot of wooded draws. But subsequent reclamation laws contributed to higher fuel prices when it came time to reclaim those areas."

Closing up

Closing a mine involves more than shutting off the lights and locking the door. Basin Electric committed $35.8 million to cover mine closing and reclamation costs until 2006.

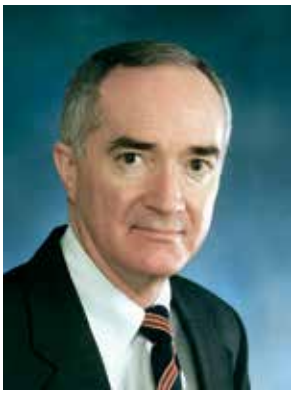
Unlike other facilities that stop producing, activities at the Glenharold Mine continued for several years after coal production ended. Active reclamation continued for three years, and BCS was bound by law to maintain reclamation areas for not less than 10 years until productivity was re-established.

With Glenharold Mine closing, all of the fuel for Leland Olds Station began to be delivered by rail from the Freedom Mine with the building of a rail spur and unloading facilities at the station.

wholesale power rates for Class A members was approved at 4.3 cents per kilowatt-hour for 1994, 9 percent lower than in 1993.

Sales of electricity reached an all-time high at 13.9 million megawatt-hours, up 2.4 percent from 1992. And the Cooperative's surplus power pool, once about 900 megawatts, had been entirely sold out by 1993.

To Basin Electric's benefit, surplus power had gone from being a liability to an asset. Standard & Poor's, a major financial rating agency, raised its ratings on all of Basin Electric's outstanding bonds for financing pollution control equipment. "Basin's control of low-cost resources and access to an extensive transmission network allow it to remain competitive in the wholesale power market, provide stable rates to members and maintain adequate finances," according to Standard & Poor's *Creditwire*.



Clifton "Buzz" Hudgins

"In the '80s, the financial marketplace viewed Basin Electric's excess capacity as a significant risk," said Clifton "Buzz" Hudgins, Basin Electric's chief financial officer, pointing out the rating change. "Not only has the Cooperative showed it can manage this risk, but the shrinking surpluses in our region indicate this liability is rapidly turning into a valuable asset."

Transmission angst and externalities

In early 1994, the Cooperative suffered a significant legal setback.

It lost a dispute with the United Mine Workers of America (UMWA) concerning the sale of the Dakota Star Reserves to Coteau in late 1991. These were reserves that were located closer to Coteau's Freedom Mine than to the Glenharold Mine, owned and operated by BCS.

A jury awarded $6.5 million in damages to the union representing the miners employed by BCS. Mine operations had ended because Basin Electric determined that the remaining reserves were not economical to recover. Miners were also involved in reclaiming the mined land at Glenharold, with most to be completed in 1995.

With the closing, miners were losing their jobs, and the UMWA filed suit in 1992 over the sale of the reserves. The jury agreed with the miners' contention that the reserves were part of the Glenharold Mine, that the two companies were effectively a single employer and that they were due damages because their contracts were violated. The award was for loss of future wages and benefits for 49 active and inactive miners.

In an editorial titled "Here's the 'rest of the story,'" McPhail said the news sometimes leads to a focus that gets "out of whack." The Cooperative still believes that the Dakota Star Reserves are separate from the Glenharold Mine, he said, "but now it's helpful to take a larger perspective: the decision to sell part of the reserves still makes excellent business sense. Our consumers will see the savings in fuel costs—translated into low-cost electricity—from the transaction for a long time."

Fockler said the jury decision was disappointing. "We believed—and still believe —that the sale … was done for valid business reasons, certainly not to get out of the labor contract. Despite the verdict on the legal question, we feel that our negotiations have always been conducted fairly and honestly."[6] The subsidiary appealed, but unsuccessfully.

Then, more bad news came from the state of Minnesota.

In the spring of 1994, the Minnesota Public Utilities Commission imposed what amounted to a penalty on carbon dioxide emissions from electric utilities. The commission acted to place an interim environmental externality value on those emissions, which would have the effect of increasing the cost of electricity.

Environmental externalities are considered secondary consequences on the environment from human activities on resources like air and water that are not reflected

6. "Jury makes award to UMWA over Dakota Star,." *Report*. Basin Electric Power Cooperative, March 1994, 11.

in the market price of goods. However, rather than reflecting the "hidden" costs of producing electricity as proponents maintained, Basin Electric considered these as arbitrary penalties that would increase the cost of electricity.

The Minnesota regulatory body took action, even though carbon dioxide was not considered at the time to be causing global warming, basing it instead on the idea that carbon dioxide would be regulated in the future.

Heidi Heitkamp

In June 1994, the state of North Dakota intervened, attempting to convince the Minnesota regulators that these interim values should not be made permanent. According to North Dakota Attorney General Heidi Heitkamp, in an editorial in the April/May 1995 issue of *Report*, if not reversed, the Minnesota commission's action would work to increase electric rates, reduce reliability of service, phase out North Dakota lignite generation facilities and dry up all resources for research and development of clean coal technologies, which allow North Dakotans to develop our lignite resources in an environmentally safe manner.

The issue remained unresolved temporarily.

Meanwhile, proposed changes in the electric utility industry gained attention of many across the country.

Basin Electric and others were cautious about the possible changes expected in the form of new rules from FERC as the Energy Policy Act of 1992 became law. The act put the FERC in the position to require utilities to provide transmission services to any entity requesting it, including adding transmission.

"You can't say no," said Easton, then manager of Marketing and Member Services, in the Cooperative's *1994 Annual Report.* "If you don't have the transmission capacity, you have to build it. However, it's not clear yet who's going to pay for it. You also can't charge anyone more than you charge yourself."

He said the prime concerns were with FERC-mandated wheeling over the Joint Transmission System, which was the federal system that included Basin Electric and others in the region. For instance, Easton said it was unclear who would construct additional facilities if FERC required more transmission to serve third parties.

Basin Electric's wholesale power rates were not regulated by FERC; however, the Cooperative was a wholesale supplier for rural electrics, transmitting power across state lines to serve them. Basin Electric also marketed surplus power to other customers in the western United States and Canada. The act gave FERC jurisdiction over all transmission, including federal and cooperatively owned facilities. Since that included the right to set terms and conditions of services and rates, FERC then had authority over transmission rates set by Basin Electric.

Basin Electric had been preparing for some time for increased competition based on possible industry changes, according to McPhail. At the Cooperative's annual meeting in November 1994, McPhail said that preparation involved the following:

- Spending about $500 million over 10 years to improve facilities;
- Researching ways to ensure that those who use the Cooperative's transmission facilities pay for the actual cost of use;
- Maintaining a strong financial position; and
- Reviewing all internal functions and business processes, and then developing benchmarks to ensure they meet the standard of best in the business.

PMAs, a new telecommunications business and deregulation

A familiar threat arose in early 1995.

President Clinton included the possible sale of the power marketing administrations (PMAs) to the private sector in his proposed 1996 budget, a plan strongly opposed by Basin Electric, its member systems and a host of other rural organizations and interests. Clinton was trying to fulfill his promise of a middle-class tax break.

PMAs are the federally owned entities that market electricity at cost from the federal dams, giving preference to consumer-owned systems such as rural electric cooperatives and municipal power systems. Most of Basin Electric members get part of their supply from hydropower through the Western Area Power Administration, one of the five PMAs in the country. Basin Electric provides the remainder.

Sale of the PMAs to private interests had surfaced before but failed.

"The sale of the PMAs would be a serious blow to our member rural electrics and their consumers," said McPhail, in Basin Electric's February 1995 *Report*. "The economy in this region and in rural America is based on having reliable, low-cost federal hydropower available."

In South Dakota, the cost of replacing federal hydropower by supplemental suppliers could be $50 million annually, according to East River Electric Power Cooperative, a Class A member located in Madison, SD. Those supporting rural electrics pointed out that Clinton's plan, like those in previous administrations, was flawed because it represented a one-time cash gain but a loss of long-term revenues.

Jeff Nelson

Jeff Nelson, East River's general manager, said PMAs were the foundation for rural electrics in the Upper Great Plains, including Basin Electric. Selling the PMAs represented "removing the foundation for all of the not-for-profit utilities in the region, so we lose access to federal power supply, we lose access to transmission, both of which are integral to not only Basin Electric but to Basin Electric's members," Nelson said in a later interview.[7] "So to remove the federal power program from this region is to remove the vital organs of the rural electric program, including Basin Electric."

7. Jeff Nelson, interview with the author, Nov. 4, 2009.

Ken Ziegler

Ken Ziegler, Basin Electric's manager of Communications and Government Relations, said the issue surfacing under Clinton in 1995 was particularly troublesome. "There is a political crossfire created by having a Democratic administration and Republican Congress apparently promoting the privatization of the PMAs." He said rural electrics would have to work harder to protect rural America on this and other issues.

Meanwhile, the Cooperative turned to telecommunications as a new business. Based on member approval at the 1994 annual meeting, Basin Electric incorporated a new subsidiary, Basin Telecommunications Inc. (BTI), in the state of North Dakota to offer long-distance and cellular telephone discounts as well as emergency dispatch services. Later, it would also become involved in providing Internet services as well as alarm monitoring and travel services, all under the BTI umbrella.

Soon after, Basin Electric and the rest of the electric utility industry heard the long-awaited proposed rule from FERC in connection with the 1992 Energy Policy Act and industry deregulation. It came in the form of a very extensive Notice of Proposed Rulemaking or "mega-NOPR."

A key feature was reciprocity that required non-regulated utilities, like cooperatives or municipalities, that want to use a private utility transmission system to, in turn, make their own transmission systems available for use by private utilities on the same terms.

Basin Electric had several concerns because the proposed rule was based on the model of investor-owned utilities. For example, Basin Electric General Counsel Mike Hinman said, terms and conditions of transmission service must be comparable, meaning a utility must charge itself the same rate it charges third parties for the same service. However, he said, for cooperatives, "customers own the system and their rates are based on

Mike Hinman

costs. The co-op members' rate of return is in the form of lower rates. If third-party users are entitled to compare lower rates, then that third-party user effectively takes the consumer/members' property. In addition, because the rate for use of a cooperative system on comparable basis would be lower than the rate of a similar IOU system, cooperative transmission will become attractive for third-party users."

Another concern was to ensure that cooperatives would have the ability to recover stranded costs, which are costs remaining when a customer leaves a system. For IOUs, other investors share that remaining cost, but, because of the co-op financing system, those costs can't be shared elsewhere and rates would increase, according to Basin Electric's analysis.

With changes likely coming in the electric industry, the Cooperative took a series of actions to further prepare itself for competition. The board of directors posed three goals for management:

- Review the performance and appropriateness of the Cooperative's assets and look at feasibility of disposing of excess assets;
- Reduce capital expenditures for next five years; and
- Assist in increasing member load growth from 1.5 percent to 2.5 percent per year.

In addition, Basin Electric sought to reduce staffing levels, but, unlike the layoffs of 10 years earlier, this time the plan involved an early retirement package. Offers went to 116 employees, with 92 eventually accepting. These were employees "whose work we determined no longer critical in this new utility world," according to the message from Basin Electric President Bill Wagner and McPhail in the *1995 Annual Report.*

By the end of 1995, the number of employees in the Basin Electric family of companies stood at 1,761, down from 1,909 a year earlier.

Bill Wagner was president from Dec. 16, 1993, to Dec. 9, 1996.

In addition, member systems were being asked to consider changes in the bylaws of Basin Electric to accommodate more competition. The most important would allow a membership district and board member for any distribution cooperative that annually purchases more than 15 percent of the total energy sold to members.

The proposal had failed at the 1994 annual meeting, but members had directed a special committee to study the idea. Kermit Pearson, bylaws committee chairman from East River, told members at the 1995 annual meeting that it would be more equitable to allow a member with significant power purchases the right to have a representative on the Cooperative board of directors. The proposal passed.

Despite the many changes on the horizon, the Cooperative's leadership was optimistic. "We can cope with all the changes in the electric industry," according to the joint message from Wagner and McPhail in the *1995 Annual Report.* "We can manage change by keeping our operations efficient and by staying flexible. It might mean using technology to communicate sooner, to share opinions, to relay recommendations and even to make decisions quicker. It might mean offering new services through our existing networks that not only make member consumers' lives better, but also add to the bottom line. By working together, we can do it."

A 'gateway to the world,' externalities, and industry restructuring

Basin Telecommunications Inc., the newest subsidiary in the Cooperative's family, now was offering Internet services through BTInet, described as, "Your gateway to the world."

This became effective in February 1996, following the introduction of a home web page for Basin Electric. Dewey Heggen, manager of member and public communications, said the Cooperative's presence on the

Internet serves as a communication and public relations tool not only for members, but also for educating the public about energy-related issues. "The Internet allows us to put in one convenient place the realm of information about our industry as well as research and laws to support our stance on issues" such as global climate change, externality costs and the sale of the PMAs, he said in a February 1996 *Report* story.

Meanwhile, Minnesota's plan to impose environmental externalities moved forward when a Minnesota Public Utilities Commission administrative law judge in March released a preliminary ruling to implement externalities.

A March 1996 *Report* magazine article reported the state of North Dakota and the Lignite Energy Council intervened in the Minnesota proceeding "to protest the artificial costs that would double or triple the price of lignite-fired electricity, making it noncompetitive and unnecessarily increasing the cost of electricity for consumers without any environmental benefits, according to the North Dakota Industrial Commission."

In fact, the North Dakota Legislature passed a law in 1995 prohibiting the consideration of externalities in the state.

The law judge in Minnesota used ranges of environmental costs for carbon dioxide based on claims that the substance contributes to "catastrophic global warming."

In response, Heidi Heitkamp, then North Dakota attorney general, said the law judge ignored constitutional violations by Minnesota on interstate commerce as well as infringing on the sovereignty of North Dakota. "In effect, Minnesota is trying to regulate the economy and environment of North Dakota. It's ironic that Minnesota has a serious nuclear waste disposal problem and yet chooses to focus on artificial cost penalties for clean electricity from low-cost lignite coal," she said. "It's also apparent the (law judge) ignored the scientific evidence presented on CO_2 (carbon dioxide) and instead engaged in a speculative attempt to predict damages from CO_2 over the next century."

More efforts would be made to block externalities, she said.

At the same time, the electric utility industry faced more changes with FERC announcing new orders (888 and 889) in April 1996 regarding open transmission access for wholesale power transactions.

Ted Humann

"Although FERC's orders do not directly apply to cooperatives, we are pulled in under them if we want to use any private utility's transmission system," said Ted Humann, manager of Transmission. "Order 888 says that any non-regulated utility (co-op or municipality) that wants to use a private utility's transmission system must make its own transmission available for the private utility on the same terms."

Called reciprocity, this provision caused Basin Electric to make changes, specifically to separate transmission system planning section from its power sales function. Humann said that was done to prevent sharing any inside information between the transmission and marketing sections. Now, he said, in the *1996 Annual Report*, the only way they can communicate is through an electronic bulletin board called OASIS (open access same-time information system) that shows each utility's available transmission capacity and the tariff charged to use it.

Humann said the Cooperative wouldn't be required to file rate and interconnection tariffs with FERC, but will develop them to join the OASIS.

Congress expected to take up the retail wheeling issue, that is, a system allowing a customer to choose a power supplier without regard to transmission, though FERC said it should be decided at the state level. There was growing concern at Basin Electric that retail competition would make large commercial and industrial loads the big winners receiving rate reductions, while residential and rural consumers would pay for those reductions.

Public utility commissions were studying the issue of retail wheeling, but except for Montana, it wasn't a high priority in the region because electricity rates were relatively low.

At Basin Electric's annual meeting in November 1996, members approved a new director district: Powder River Energy Corporation based on a request by Tri-County Electric Association of Sundance, WY. Tri-County, which had power purchases totaling 19 percent of Basin Electric sales to members in 1996, would merge with Sheridan-Johnson Rural Electric Association on Jan. 1, 1997, to form Powder River Energy Corporation.

Senate cool to Kyoto; indenture moves forward

In early 1997, Basin Electric and the state of North Dakota gained a significant victory regarding the future of the lignite industry.

In its final order, the Minnesota Public Utilities Commission decided not to apply environmental externalities on carbon dioxide and certain pollutants from power plants that were more than 200 miles from Minnesota's borders. All eight power plants using lignite to supply electricity in this region—including Basin Electric's—are outside the 200-mile limit.

"One of the major arguments against applying artificial environmental costs for carbon dioxide was that lignite power plants only emit a fraction—eight one-thousandths of one percent (an undetectable amount)—of worldwide carbon dioxide emissions, and that unilateral action on Minnesota's part will not slow global warming, even if it is occurring," said Lignite Energy Council President John Dwyer in the March 1997 issue of *Report.* He suggested a better approach would be to encourage transfer of clean coal technologies to Third World countries that are the big coal growth areas of the future.

With that challenge to the electric business gone, another was looming in the form of an international climate change treaty.

The Clinton administration appeared to be sympathetic toward a global climate change treaty coming up for consideration in December in Kyoto, Japan.

The proposed treaty called for the United States to reduce carbon dioxide emissions by 7 percent from 1990 levels by 2012. To meet those goals, Basin Electric estimated it would have to lower its coal consumption and sales level by 17 percent.

Members of the Global Climate Coalition, backed by oil, coal and other industries, supported a Senate resolution urging the president not to sign any such treaty that excludes developing countries or that would seriously harm the U.S. economy. Cutting energy use as proposed would be "brutally expensive" in terms of income, jobs and competitiveness, a coalition representative told the Senate Foreign Relations Committee. After hearing that and other testimony, the Senate overwhelmingly acted not to endorse the treaty.[8]

For Basin Electric, however, a more immediate concern came with a proposed rule dealing with visibility. The EPA developed proposed rules on regional haze, intending to eliminate haze over certain protected areas, such as the Theodore Roosevelt National Park in western North Dakota.

The rules required new technology to remove more sulfur dioxide and minute particles from plant emissions, which EPA contended contributed to regional haze.

The ironic thing, Fockler said, is that haze is not a problem in North Dakota. However, as drafted, the rules affected older power plants like Leland Olds Station. If adopted, he said, the rules would mean the station would have three options: switch to natural gas, install a sulfur dioxide scrubber and equipment to remove the small particles, or shut down.[9]

Switching to natural gas would increase the plant's production costs four-fold while installing the environmental equipment would cost $250 million, more than doubling the plant's production cost, Fockler said, in a January 1998 *Basin Today* story.[10]

8. "Climate change wake-up call," *Report*, Basin Electric Power Cooperative, July/August 1997, 7.
9. "Regional haze: Is it an issue?" *Report*, Basin Electric Power Cooperative, January 1998, 3.
10. Basin Electric is scheduled to complete construction and install scrubbers on the Leland Olds Station units in 2012 or 2013 for an estimated cost of $410 million.—Ed.

Meanwhile, rural consumers continued to face electric industry restructuring.

Basin Electric and others in the industry remained convinced that rural consumers would be at risk under deregulation. However, to provide better services and prepare for competition, Basin Electric worked with several Class A members to form regional marketing alliances.

In light of this competition, Basin Electric concluded a two-year negotiation with the Rural Utilities Service (RUS, formerly the REA) to replace its mortgage agreement with a more flexible financial document called an indenture that would become effective on Jan. 1, 1998.

Replacing the Cooperative's standard consolidated mortgage, the indenture placed more responsibility on the board and management. "The indenture enables Basin Electric to respond more quickly in today's increasingly competitive electric industry, according to Hudgins, Basin Electric's chief financial officer. "We didn't buy out of the RUS. We simply migrated our secured debt to this new indenture," he said, in the *1997 Annual Report.*

Wally Beyer

Wally Beyer, then RUS administrator, met with the Basin Electric board of directors, adding his endorsement. He said he realized that co-ops need more flexibility to operate successfully as the electric industry is restructured. "We're not going to accommodate all of our borrowers with the indenture process because some of them are not strong enough," he said. "Basin's one of the strongest borrowers in our loan portfolio."

The issue of restructuring was reviewed at Basin Electric's annual meeting as well. A panel representing members agreed that the best answer to restructuring for co-ops is to stay together. Nelson, East River's general manager, said Basin Electric and its members have recognized that to succeed they will have to collectively make tough choices. "We've worked together to position ourselves to offer market-based rates and special rates for different classes of customers," he said in the December 1997 issue of *Report.* "This will help us retain loads and be competitive. With our ability to work through difficult issues, the connection with our customers and the magnificent resources we have at Basin Electric, we can compete."

Financially, 1997 proved to be a mixed bag for Basin Electric and its members.

On the one hand, average wholesale power rates were maintained at about 3.8 cents per kilowatt-hour, about 31 percent lower than the record high in 1987. And, the Cooperative achieved another sales record, 14.6 million megawatt-hours (MWh) in 1997, the second record year in a row.

However, despite good electric operations, problems at Dakota Gas led Basin Electric to show for the first time a net loss of $2.7 million in its consolidated net margin.

"In retrospect, Dakota Gas may have tried to do too much in 1996 and 1997," McPhail said, in the *1997 Annual Report*. The subsidiary needed to solve environmental problems by a March 1997 deadline, while also trying to accomplish that cost effectively. With a new scrubber technology that uses anhydrous ammonia as reagent to produce a valuable, high-grade fertilizer, the company adopted an accelerated construction program to build an anhydrous plant to supply the scrubber and take advantage of a strong fertilizer market. However, McPhail said, the amount of engineering and construction was more than estimated and a severe winter hampered construction and the startup of the ammonia plant.

Even with these setbacks, McPhail said, the Synfuels Plant and associated coal reserves purchased from the federal government in 1988 had proven to be good investments. By keeping the plant operating, he said, about $37 million in benefits have flowed to Basin Electric members each year for a nine-year total of $333 million. This was in addition to retained earnings

of more than $189 million, which had been reinvested in byproduct development, environmental compliance and other plant improvements.

Granite Peak, Touchstone Energy and Kyoto Treaty

In early 1998, Basin Electric opened a marketing subsidiary called Granite Peak Energy to sell retail electricity in the state of Montana. Montana became the only state in Basin Electric's service territory to pass electric restructuring and customer choice legislation.

Under that law, investor-owned utility commercial and industrial customers with loads of at least one megawatt could choose their power supplier as of July 1, 1998. By July 2002, all investor-owned utility customers could opt for a power supplier.

The law primarily applied to customers of Montana Power Company, the state's largest utility. Other utilities and electric cooperatives could opt out of competition.

With Granite Peak, Basin Electric would now look at selling the remainder of its 300 megawatts of surplus power to retail customers.

Interestingly, Montana Power had been the main push behind electric restructuring in Montana, but the company soon announced it no longer would produce power to sell at retail. Instead, the company sold its generation facilities to a Pennsylvania company to become a telecommunications company, which soon failed.

Elsewhere, there were signs that the push for restructuring the electric industry was losing momentum. Other states in the region had been studying customer choice, but were taking a go-slow approach. Many were concerned that residential consumers would not benefit because electric rates in the region tended to be lower than the rest of the nation.

Basin Electric and other rural electrics questioned customer-choice legislation, saying rural residential electric rates could rise because investor-owned utilities would not want to serve sparsely populated areas, but would "cherry pick" large electrical loads in those areas.

Touchstone Energy®

To help promote rural electric power across America, a national brand called Touchstone Energy® was formally launched in April 1998. The actual premiere was at a NASCAR race—the Touchstone Energy 300—at the Talladega Speedway in Alabama. Basin Electric and 85 of its member cooperatives had already joined as partners in Touchstone Energy. Within a month, more than 400 electric cooperatives and affiliated organizations had signed on as partners.

The brand's advertising promoted the reliability and low-cost power available through rural electric cooperatives, as well as customer-focused service and state-of-the-art technology. Clayton Hoffman, manager of Oliver-Mercer Electric Cooperative in Hazen, ND, told *Report:* "I believe that Touchstone Energy will give us one of the tools we need to establish ourselves as the energy provider of choice. It gives us a way of appealing to new customers, as well as a way of reminding current customers that we care about serving them, not maximizing returns for our stockholders."

A tough legal decision, RTOs, record sales

For Basin Electric, 1999 did not begin well as a legal decision faulted the Cooperative regarding a power contract with the Western Area Power Administration.

In a March ruling, the U.S. District Court in Bismarck held that the Cooperative had breached a contract with Western by overcharging the federal power marketing agency in two areas. A judgment of more than $47 million was entered against the Cooperative.

The complicated case stemmed from a sale of 185 megawatts in surplus power from Antelope Valley Station Unit 2 in 1986-90. The 1983 contract was based

on "cost of production" as determined by the RUS accounting system, not a set mill rate per unit of power sold. According to Basin Electric, the contract was negotiated that way because the generating unit had not yet been constructed and the final cost wasn't known. "Western benefited from a low rate," an article in *Basin Today* explained. "Basin Electric benefited because the agreement returned to it the costs involved in the extra capacity, avoiding passing the costs of the excess capacity to its member cooperative customers."

A former Cooperative employee initiated the case in 1995.

As a result, the Cooperative faced being barred from entering into any new federal contracts, based on a subsequent debarment notice issued by the DOE.

Basin Electric responded to the notice as well as appealing the court's decision to the 8th Circuit Court of Appeals. "It is very important that the DOE have full confidence in the responsibility of the companies with which it contracts," said Claire Olson, Basin Electric's assistant general counsel, in the August 1999 *Basin Today.* "It is understandable that DOE would make an inquiry of Basin Electric in circumstances such as this." He said the Cooperative had contacted the DOE with additional information with hopes that the debarment would be lifted.

As a result, DOE lifted its debarment of Basin Electric. The DOE letter noted, in part, "it does not appear that there are sufficient concerns at this time with respect to Basin's present responsibility to pursue debarment."

On April 30, 2001, the Court of Appeals for the 8th Circuit reversed the decisions of the District Court and held that Basin Electric had not breached its contract with the Western Area Power Administration. It held that Basin Electric did not overcharge Western for power sales and has used proper accounting procedures in the transactions.

Meanwhile, FERC issued rules in May 1999 for setting up Regional Transmission Organizations (RTOs) to direct control of all transmission systems.

Though Basin Electric is not a FERC-regulated utility, the Cooperative expected it would have to commit its transmission facilities to a RTO. "This leaves organizations like Basin Electric that own transmission uncertain how usage will be determined and how it will be compensated for use of its transmission," according to Ted Humann. Basin Electric favored formation of a RTO through the Mid-Continent Area Power Pool (MAPP), but it failed based on a vote by MAPP members later in 1999.

By year's end, FERC approved a final rule that required FERC-regulated utilities that own, operate or control electric transmission facilities to join in forming a RTO. FERC expected cooperatives with transmission facilities to participate in forming RTOs. Basin Electric was considering various options regarding joining or forming a RTO.

To prepare for deregulation and competition in late 1999, the Cooperative's board approved three regulatory actions including early amortization of previously deferred power plant costs, a plan that called for annual margins over $10 million in 1999-2002 be used for accelerated depreciation on generating units, and a revenue deferral plan for an unanticipated property tax settlement. These actions helped to stabilize future rates and provided a one-mill rate reduction for Jan. 1, 2000.

For 2000, the average net cost of power was now estimated to be 3.3 cents per kilowatt-hour. That means rates had dropped 37 percent since the all-time high of 56.6 mills or 5.7 cents per kWh in 1987. As McPhail noted, this equates to members paying Basin Electric $146 million less than they would have if rates were still at the 1987 level.

The sales numbers soared near a record for 1999, too. Total sales were 15.6 million MWh, just under the 1998 record of 15.9 million MWh. Even with lower sales, higher market prices pushed revenue from surplus power sales to more than $459 million, compared to $458 million in 1998.

Market prices became totally disconnected from the cost of production during a period of hot weather in July, said Wayne Backman, vice president of Power Marketing and Transmission, in the *1999 Annual Report*. Through a joint marketing program with Western, Basin Electric was able to take advantage with some power selling at

Wayne Backman

the unheard of wholesale price of 3,700 mills or $3.70 per kWh. "To put these prices in perspective, at 4,000 mills per kWh, it would cost $10 to run your home's air conditioner for one hour," Backman said. "If a utility had to replace the power from a 450-megawatt unit … the cost would be nearly $2 million per hour."

Dave Raatz, Basin Electric's manager of marketing and supply planning, said high market volatility contributed to the high prices for surplus power during the past two summers. "We believe that high market volatility will exist as long as we experience hot weather for the next several years," he said. "As new generation is built, some of that volatility will disappear. No one's built any generation recently. It's supply and demand. Basin Electric's surpluses have the potential to be very valuable to the membership."

Dave Raatz

Raatz added, "Basin Electric is in a better position than most utilities in the region because of our surplus power and the way we've marketed it. Most of our surplus sales contracts can be interrupted if we lose a unit. The members should have a fairly stable power supply cost going into this period of high price volatility."

He also said new generating units coming on line that should curb some of the price extremes are gas fired, which is good for Basin Electric in two ways. First the Cooperative should be able to get more for surplus sales. Second, the increasing demand for gas to fuel new electric generation should increase the market price of gas, which is beneficial for Dakota Gas.

In December 1999, Robert McPhail announced his retirement as the Cooperative's general manager. He agreed to stay until a replacement was named.

"Thank you for 15 tremendous years," McPhail said, in the *1999 Annual Report*. "It will always make me proud that I've been a part of this great organization. The support I received made tough times easier and the successful times sweeter. We've faced plenty of challenges over the years, but with your unwavering commitment to Basin Electric, the future is brighter than ever. People move on, but Basin Electric can always be here to help rural Americans attain services to keep step with and possibly stay ahead of the rest of the world."

Wayne Child was Basin Electric president from Dec. 9, 1996, to Dec. 15, 2009.

Wayne Child, Basin Electric president, praised McPhail for his strong and steady leadership. "Bob reduced staff, cut operating expenses, refinanced debt and for the first time in many years, wholesale rates started to drop," Child said, in the *1999 Annual Report.* "These were difficult times for Basin Electric and many of the measures Bob initiated were not popular or pleasant." Through it all, he "never lost sight of who he was really working for—the little guy at the end of the line that ultimately has to pay the bills."

Child said achievements under McPhail included competitive electric rates, world-class generating facilities, acquiring the nation's only commercial-scale gasification plant, investments in technology, and a sound financial foundation.

This, Child said, is McPhail's legacy to future generations of this region.

By March 2000, the board of directors had announced a successor to McPhail.

To continue the vision for the Cooperative, directors turned for the first time to a manager from a member system, Ron Harper, general manager of Powder River Energy Corporation of Sundance, WY.

Chapter 8

A smooth transition into the new millennium

The world nervously watched as time clicked toward the year 2000, wondering if computer failures would wreak havoc throughout modern countries.

Early computer programming hadn't anticipated the change to a new millennium. Would computers throughout the world adapt to the year 2000?

Uneasiness over that question spread to all areas of the U.S. economy, including Basin Electric. Businesses prepared for the worst while hoping for the best.

As the calendar rolled over from 1999 to Jan. 1, 2000, computers kept working, and business leaders collectively sighed in relief. Computer experts were surprised by the smooth transition.

For Basin Electric, the process was flawless, proving to be a non-event for its power plants and computer systems.

The new millennium also brought a change in leadership at Basin Electric, an event that proved to be a smooth transition as well. On April 23, 2000, Ron Harper succeeded Robert McPhail as Basin Electric's chief executive officer and general manager.

The 50-year-old Harper, who had been chosen over more than 100 applicants, was new to Basin Electric but not to the cooperative industry. His resume included nearly 30 years of experience with electric distribution cooperatives, including 12 years with Powder River Energy Corporation (PRECorp) and four years as general manager of Carbon Power and Light, both in Wyoming.

Among his accomplishments: leading the successful merger of two cooperatives to form PRECorp, the largest cooperative in Wyoming. Subsequently, it became one of Basin Electric's largest members.

A native of Oklahoma, Harper earned honors in 1997 from the National Rural Electric Cooperative Association for outstanding service to rural electric cooperatives. His financial acumen led him to serve on the board of the National Rural Utilities Cooperative Finance Corporation, chairing its finance committee.

Ron Harper

Harper was described, in a news story, as a "very visionary leader … a very good people person."[1]

As he moved into the job in Bismarck, ND, Harper listed improving communications, in general and with the membership in particular, high on his management to-do list. His goal: closer relationships with member cooperatives across the nine-state region served by Basin Electric and its membership.

1. "Basin is hiring new manager," *Bismarck Tribune,* March 16, 2000.

"They (the Basin Electric board of directors) agree with me that communications is one of the keys to our success in this changing environment," Harper said, in his first interview as Basin Electric's new CEO and general manager. "They want to revisit our strategic plan and with the help of the membership and our people, develop a clear vision of where we are headed and solid steps on how to achieve our mission (and) then communicate that vision."[2]

To meet the new competitive environment, Harper said, Basin Electric must continue efforts toward operational efficiency and rate competitiveness. And one avenue to achieve that was to "develop a closer relationship among all Basin members," working together as "one unified cooperative," he said. That doesn't mean vertical integration or circumventing the Class A G&T members, but rather, the relationships with and among members need to be elevated to a "new level of unified alignment," according to Harper.

To prepare for the future, he concluded, "We must create an open and honest environment for communicating and working together."

A noteworthy start to a new era

Working together would be needed for the tests facing the energy industry and Basin Electric in the new millennium.

It had been some time since future power supply had been a topic for serious discussion at Basin Electric, which had been dealing with electricity surplus to its members' needs since the mid-1980s.

Now there was a growing need for power, not only by member cooperatives and their consumers but nationwide as well, particularly in the Northeast and in California.

Consumers in those other parts of the nation found their electricity bills doubling or more. With a lack of power and transmission bottlenecks, brownouts, blackouts and cascading outages made the news frequently.

Some of the topsy-turvy power market swings in the summer of 2000 could be tied to how some states and utilities reacted to legislation in 1992 that mandated open transmission access for wholesale power and, in some states, allowing retail competition.

California decided to move ahead with deregulation on its own but lacked adequate rules to oversee the process, according to Ted Humann, in a 2010 interview. Humann retired in 2004 as senior vice president of Transmission at Basin Electric.[3] "So what would happen is that entities would purchase the power and then wouldn't resell it until the price went up," Humann said. In addition, sometimes the entity purchasing large amounts of power couldn't deliver it, either, he said.

With its burgeoning population, California couldn't keep up with the demand for power, leading to power shortages and extremely high wholesale electricity prices. In addition to the problems created by the deregulation experiment, California's power shortages also stemmed from heavy dependence on out-of-state electricity providers, drought conditions that reduced hydroelectric power, and natural gas supply problems. Eventually, utilities there had to cut off electric power to certain "interruptible" customers.

This skyrocketing demand for power benefited utilities with power to sell, including Basin Electric. As a result, Basin Electric saw pleasingly lofty revenues from high-priced sales on the open market.

Within its membership, Basin Electric felt the increasing demand for power as well.

Class A member Tri-State G&T Association, headquartered in Colorado, needed assistance in meeting the burgeoning growth around Denver as well as natural gas development in central Wyoming. PRECorp was asking for more power for the coal-bed methane wells in northeast Wyoming. More than 5,000 wells were already producing, and there was potential for 120,000 wells, creating a possible additional load of 500 megawatts. Another Class A member, Central Montana Electric Power Cooperative of Great Falls, was seeking to replace purchases from another supplier.

2. Kathi Risch, "An interview with Ron Harper," *Basin Today,* Basin Electric Power Cooperative, May 2000, 3-4.

3. Ted Humann, interviewed by the author, June 10, 2010.

It would have been comfortable for Basin Electric to stay put with a better balance between supply and demand, but the demands by members and the growing use of electricity-driven technologies "won't let us stand still," according to Harper and Wayne Child.[4]

However, Basin Electric no longer could routinely plan to add large baseload, coal-fired generation, a process that planners said now could stretch up to 10 years for permits, site selection and construction.

Environmental-regulation challenges continued for utilities with electric generation fueled by coal. For Basin Electric, its Leland Olds Station, like other older coal-based plants, faced tougher air quality measures, prompting the Environmental Protection Agency (EPA) to seek information from utilities, an apparent effort to close such generating units. EPA maintained that sulfur-dioxide emission limits already had been exceeded in North Dakota, and, thus, no new coal-based plants could be built without somehow offsetting those emissions at existing power plants. Utilities could accomplish that through switching to fuels with fewer emissions, retrofitting or installing scrubbers to control emissions, or closing coal-based generating units.

Mercury was another environmental concern. The federal government announced that because mercury emissions from coal-based plants are considered "dangerous," more regulation would be warranted.

Another environmental issue: protecting from haze certain pristine areas, such as the Theodore Roosevelt National Park in western North Dakota. At this point, EPA's draft "regional haze" rules were to be finalized by or before 2008.

Yet another unknown remained in the area of electric utility restructuring, specifically the federal government's efforts to create competition in the wholesale power market.

The Federal Energy Regulatory Commission (FERC) sought to achieve this by regulating access to and pricing for transmission service for all utilities and others who bought and sold on the wholesale market. Basin Electric took the position that consumer-owned utilities, federal power marketing agencies and rural electric cooperatives should be outside of FERC's jurisdiction.

Still, because of reciprocity, Basin Electric and other cooperatives with transmission facilities were expected to participate in the process. For Basin Electric, reciprocity meant that if it wanted to use the transmission line of a private, FERC-regulated utility, it had to offer transmission usage to others under the same conditions, according to Humann. [5] And that meant becoming involved in FERC-initiated regional transmission organizations (RTOs) or independent system operators that would direct the control of all transmission systems in that region.

For years, Basin Electric had been part of a jointly operated transmission system including the Western Area Power Administration and Heartland Consumers Power District of Madison, SD. Known as the Joint Transmission System before 1998, it had produced major savings for consumers because of increased transmission reliability while avoiding costly duplication of services. The system morphed into what became the Integrated System (IS) so rate making could follow FERC's open-access transmission orders.

For Basin Electric and others, a major hang-up was how they would be compensated for use of the transmission facilities they owned. Basin Electric promoted the concept of postage-stamp rate making, in that all consumers using the transmission service in that region should pay the same rate (or tariff). This approach supported needed transmission improvements because maintenance and upgrades were included in the tariff.

According to Basin Electric, RTOs also should, among other provisions, grandfather pre-existing transmission and power supply agreements, accept standard depreciation for transmission facilities, and allow a market rate of return for transmission investments. Because it is not-for-profit, Basin Electric had a margin for transmission investments at a lower percentage than a typical rate of return for investor-owned utilities.

4. "Report to the membership," *2000 Annual Report*, Basin Electric Power Cooperative, 4.

5. Interview, Humann, June 10, 2010.

With these environmental and restructuring unknowns, Basin Electric faced a formidable and complicated task in considering future power. The Cooperative began studying several options, in addition to building large, central-station power plants.

Distributed generation and power from the wind

One option was smaller distributed generation, in which the electric-generating source is placed where the power will be used. These units have a variety of uses, from being a primary source of power, a standby source or providing power for a remote area.

Negotiations were under way with an Iowa member, Corn Belt Power Cooperative, for Basin Electric to have a 40-megawatt share in an 80-megawatt turbine fired by natural gas that was to be installed near Spencer, IA.

This represented a significant change for Basin Electric. The proposal would, for the first time, add natural gas to the Cooperative's mix of fuel sources for its generation that was overwhelmingly coal-based. At this time, Basin Electric had nearly 500 megawatts in peaking resources that didn't use coal, from its own oil-fired Spirit Mound Station and contracts for hydropower through the Western Area Power Administration. Besides adding this fuel diversity, the natural gas turbine would be located closer to growing electric loads in Iowa. The proposed turbine also would enhance Basin Electric's risk management by providing a backup in case it temporarily lost one of its large, coal-based plants.

Basin Electric looked at many options for future power supply at this time. For example, it agreed to participate in the Lignite Vision 21 study, focused on building a new coal-fired plant in North Dakota by 2010.

But another possibility was appearing in the wind … literally.

Basin Electric's first venture into wind resources started in 2001 with Class A member East River at Chamberlain, SD, with just two 1.3-megawatt turbines. During 2011 and beyond, Basin Electric expects to increase its total wind generation to more than 730 megawatts. Basin Electric has a purchase power agreement with NextEra Energy for the Wilton (ND) Wind Project at right.

Two members—Tri-State and East River Electric Power Cooperative in South Dakota—had already ventured into renewable energy, particularly wind turbines to produce electricity.

This type of energy costs more, but surveys by Basin Electric's member cooperatives produced a surprising response from consumers in the region. They said they would be willing to pay more for electricity generated by wind.

Tri-State had contracted with two vendors to supply wind power, amounting to about 470 MWh monthly. About 3,100 consumers had signed up for this higher-cost power.

East River, meanwhile, was in the process of launching its PrairieWinds Program, with plans to enlist consumer subscriptions for up to 1.3 megawatts from wind turbines.

"By investing in wind energy, another clean source of power, we are investing in our future," said Jeff Nelson, East River's general manager. "More importantly, East River is taking a leadership role in supporting renewable energy and contributing to a healthier environment for this generation and the next."[6]

East River received great feedback from its wind-energy program, including a feature story in a U.S. Department of Energy (DOE) newsletter on energy efficiency and renewable energy.

The federal government also had promoted renewable energy. In an executive order in June 1999, President Bill Clinton recommended that renewable energy be used to reduce government greenhouse gas emissions by 30 percent by 2010. DOE launched the National Wind Energy Initiative, including feasibility studies, transmission studies and wind resource maps.

Against this backdrop, the Basin Electric board of directors in May 2000 voted to authorize a renewable energy program. "When our members talk, we listen," said Wayne Backman, in a story in the June-July 2000 *Basin Today* story.

6. Julie Slag, "Co-ops answer consumers' call for renewable energy," *Basin Today*, Basin Electric Power Cooperative (June-July 2000), 7.

Under the new program, there were options so members wouldn't violate their contracts to purchase all supplemental power from Basin Electric. One option allowed for a member to construct a renewable source, with ownership passing to Basin Electric. A second option would be for a member to contract with a renewable developer, who would then sell the power to Basin Electric. The program allowed Basin Electric to purchase renewable energy from member projects when production exceeded member needs. That surplus renewable power then would be offered to other members or would be integrated into the Cooperative's total energy mix.

"We have always been advocates of sound environmental stewardship and progressive energy research," Harper said. "Development of wind energy is in keeping with that heritage."

A remarkable year: Electricity, natural gas and an international project

Even with the unknowns and changes, Basin Electric recorded a banner financial year in 2000.

A growing nationwide demand for electricity, low hydro conditions in the West, a lack of future power supply planning by the industry and a transmission system ill-designed for competition provided for extraordinary sales, according to Child and Harper, in their report to the membership in the *2000 Annual Report.* Despite aging power plants, employees maintained their operation at high levels as well.

Record electricity sales led the remarkable financial success. Basin Electric sold 16.8 million MWh of power, the highest ever, surpassing the previous record of 15.9 MWh in 1998. That included record sales both to member cooperatives as well as surplus power.

"2000 has been a terrific year for Basin Electric," Backman reported at the annual meeting in Bismarck. "The combination of record generation and high market prices has us on track to realize a substantial margin. Basin Electric's generation capability, including our surplus capacity, has become a tremendous asset. This occurs at a time when the nation is again struggling with its dependence on foreign oil."

In fact, the Cooperative's net margin jumped to $42.6 million, a remarkable turnaround after a three-year run of negative net margins.

Subsidiaries contribute to good year

A big part of that exceptional year came with the performance by its two major for-profit subsidiaries, Dakota Gas and Dakota Coal.

Dakota Gas was benefiting from a lack of stored natural gas nationwide. With stored volumes running more than 20 percent less than the year before, natural gas prices soared to dizzying levels.

Natural gas pricing had been about $3.81 per dekatherm in 1999; by December 2000, the cash price hit $13.75 per dekatherm, with Dakota Gas selling its natural gas on the spot market for an average of $8.74 per dekatherm, the highest average ever.

"Right now the plant is doing very well because of gas prices, but it's like any industry that's in the commodities business," said Floyd Robb, Basin Electric's vice president of communications to the Associated Press.[7] "There are highs and there are lows. Right now, we're in a high cycle. How long that will last, whether it will be sustained, is anybody's guess."

Joining in the carbon dioxide pipeline valve-opening ceremony on Oct. 19, 2000, for Dakota Gas, were (from left) Don Applegate, chairman; Ron Harper, CEO; Bob McPhail, retired CEO; Gerry Protti, PanCanadian senior vice president; Fred Stern, Synfuels Plant manager; and Al Lukes, chief operating officer.

As a result, Dakota Gas recorded a positive financial year. Natural gas revenue rose more than 26 percent in 2000, hitting nearly $176 million.

Then, an international project added momentum. On Sept. 14, 2000, carbon dioxide began flowing from the Synfuels Plant into a new pipeline that stretched 205 miles northward into Canada. The pipeline included a section of more than two miles lying beneath North Dakota's Lake Sakakawea, the third largest man-made lake in the United States.

Carbon dioxide had always been vented into the atmosphere through the plant's boilers. Now it would help force out crude oil from an oil field owned by PanCanadian Resources near Weyburn, Saskatchewan. This also meant the carbon dioxide would be stored or sequestered underground.

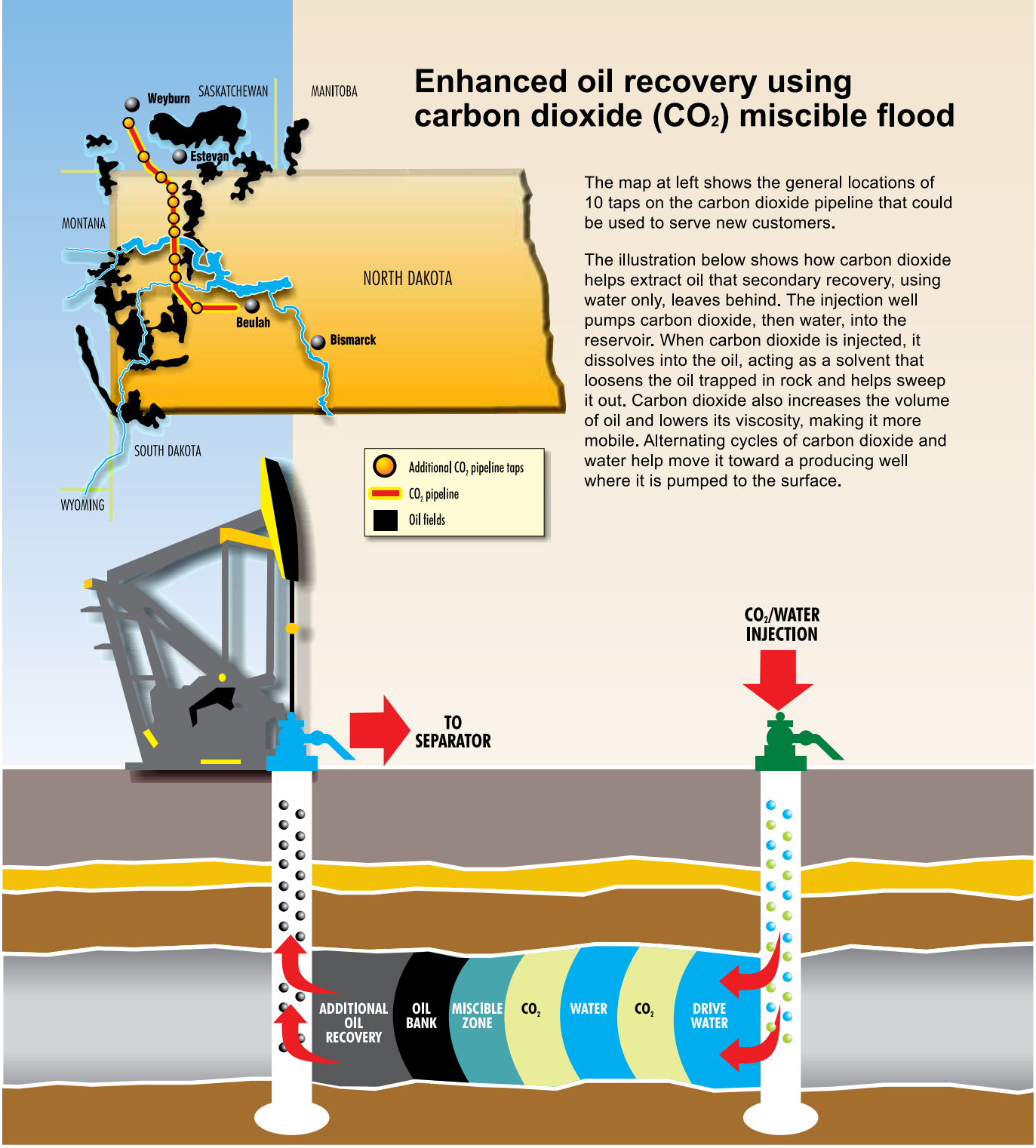
The ceremony around the opening of the pipeline capped a prolonged process that had begun with negotiations in 1995. A contract was signed in July 1997 followed by two years of engineering and design with groundbreaking on May 12, 1999. The 15-year contract called for PanCanadian to purchase up to 95 million cubic feet of carbon dioxide daily, about 40 percent of the Synfuels Plant's production.

By the time the project was dedicated on Oct. 19, 2000, Dakota Gas had invested $100 million while PanCanadian had put more than $1 billion into the venture to increase oil field production.

Big investments, but the anticipated returns were expected to be large, too.

Dakota Gas projected it would bring in $30 million in gross revenue annually over the next 15 years. PanCanadian's use of carbon dioxide in this "tertiary"—or miscible flooding—recovery method would result in boosting the production of its oil field by about 50 percent over the next 10 years.

7. "Natural gas prices boosting Great Plains Synfuels Plant," *Bismarck Tribune,* Aug. 20, 2000.



That meant PanCanadian would be able to recover and sell an estimated 122 million barrels of additional oil. Canadian officials also estimated that 1,400 jobs would be created. Though it represented jobs and an economic boon, American and Canadian leaders also pointed to the environmental benefit from sequestering carbon dioxide.

Heralding the event as an international energy milestone, U.S. Energy Secretary Bill Richardson said, "This project helps expand both the life of an American energy plant and Canadian oil field," he said. "When the venture is a plus for both Canada and the United States, it's something to celebrate."[8] Richardson also said the pipeline project is a step toward resolving the issue of releasing carbon dioxide into the atmosphere. "It's clean technology at its best, and it shows that this domestic resource fits into our energy future."

8. "CO_2 pipeline unites two companies, two countries." *Basin Today,* November 2000, 10.

Speaking by satellite from Ottawa, Ralph Goodale, the Canadian Natural Resources Minister, said the project represented a growing success story. "Through an international research initiative, this project will help Canada and the world advance the scientific understanding of how (carbon dioxide) behaves once it's stored in geological reservoirs," he said, in the November 2000 *Basin Today*.

Harper, who is president and CEO of Dakota Gas, recalled, "Over the years that (Dakota Gas) has owned the Synfuels Plant, an innovative strategy has been used to maintain its viability during roller coaster times of high and low natural gas prices. During that time, the people have pitched in to help reduce maintenance and operating costs … and develop products."

Dakota Gas hoped for even greater future benefit from the project. The pipeline had extra taps installed, with the prospect of selling additional carbon dioxide to nearby oil fields in North Dakota and elsewhere.

With carbon dioxide developed and selling, the Synfuels Plant now had eight byproducts on the market, along with its major revenue producer, natural gas. The plant remained out of compliance on environmental regulations, but in 2000, Dakota Gas made significant progress, finally gaining an operating permit from the North Dakota Health Department. The plant had been operating under a variance even before ownership passed to Dakota Gas in 1988.

Under the permit, the plant was required to improve removal of tiny particles from main stack emissions as well as reduce plant odors. To satisfy the particle-removal requirement, Dakota Gas had chosen to install a wet electrostatic precipitator. The company also initiated a project to control the cooling tower odors. Both projects were to have the plant in compliance by 2003.

Since 1988, Dakota Gas had adopted an overall goal of ensuring the long-term future of the Synfuels Plant, and achievements in 2000 represented a major step in that direction. Al Lukes, Dakota Gas' chief operating officer, said the company had now shifted from a survival mode to an operating mode.[9]

With the exceptional financial year for Basin Electric and its subsidiaries, Basin Electric's board passed on the benefits to member cooperatives, including a $25-million credit on wholesale electric bills, a two-mill rate reduction and a $65.1-million revenue deferral that would help lower future rates. With these adjustments, the average Class A member power rate for 2000 was 30.9 mills per kilowatt-hour, a 10-mill drop from 1999.

"Fortunately, the choices and wise investments that Basin Electric and its members have made in the past 40 years are producing benefits now," said Child, addressing delegates and guests at the Cooperative's annual meeting in November 2000.[10]

The excellent results gave Harper an auspicious start to his first year as Basin Electric's CEO and general manager. Speaking at the annual meeting, Harper reminded members that with all the changes facing cooperatives, the focus needs to remain on the "person at the end of the line."

"As we begin the 21st century, the electric power industry is in the midst of a radical shift from regulatory oversight to competitive market forces," Harper said. "Adapting to the pace of change is a strategic imperative for all of us."[11]

The new CEO said that in the past, people formed cooperatives to share their ideas, resources, time and strengths. "Today we are building on that legacy," he said. "Our legacy will be built by embracing technology, developing fast-moving and flexible strategies, by involving ourselves in effective relationships and alliances, and by working together to avoid duplication.

"Most important," he said, "is our ability to work together. Together, we can build a vision for a new era."

With growth looming on the horizon, the new millennium meant a new vision would be needed, sooner rather than later.

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9. Basin Electric Power Cooperative, "Challenges of new electric era can be solved by working together," news release, Nov. 10, 2000, 3.
10. "Challenges…" news release, Nov. 10, 2000, 2.
11. "Challenges…" news release, Nov. 10, 2000, 1.

Chapter 9

Transitioning to an era of growth, construction

As the new millennium clicked over to 2001, it was clear that Basin Electric Power Cooperative had to shift into a new mode to meet the growing demand for power in the rural areas of the upper Missouri Basin region.

Coal had long served as the basis for low-cost power for millions of rural Americans, including those served by Basin Electric and its member cooperatives. Coal-based electricity remained a bargain for rural electric consumers in the region.

At this time, 95 percent of Basin Electric's power resources were coal-based. Based on the importance of its historic focus on stewardship, the Cooperative had invested about $650 million to operate its plants in an environmentally sound manner as well as spending about $25 million annually for environmental protection equipment.

But utilities with coal-based generation felt the growing pressure to do more, based on federal environmental rules and regulations.

Basin Electric felt it had been doing more, including the launch of a renewable energy program in mid-2000. With that program in place, Basin Electric focused on adding more diversity to its energy resource base.

In January 2001, a historic announcement was made involving Basin Electric and the Rural Utilities Service (RUS). RUS had been the Rural Electric Administration when it financed cooperative efforts to bring power to rural America more than 50 years ago. Now the federal agency awarded its first-ever wind energy loan guarantee to Basin Electric for its initial wind project.

The $3.8-million loan would be used to finance construction of wind turbine generators near Chamberlain, SD, along with a short transmission line. Up to three 1.3-megawatt turbines were planned for the project as a joint effort with a Class A member, East River Electric Power Cooperative of Madison, SD. The subsequent groundbreaking in September marked an important energy initiative for Basin Electric, East River and rural consumers.

Unfortunately, that came just days before Sept. 11, 2001, the date of the largest terrorist attack in U.S. history.

"We are all painfully aware of the terrible tragedy that struck our country," Ron Harper said in a message to employees just after the attack.[1] Basin Electric joined with rural electrics across the country in helping people directly affected by the disaster.

Life in America never resumed quite like it was prior to that date, but the country still demonstrated its resilience in slowly recovering from this tragedy.

In the energy business, the attacks underscored an unresolved goal for America.

"The tragedies further renewed a national resolve for greater energy independence, which encourages coal, gas and oil development in service territories of our member systems," according to Harper and Wayne Child in Basin Electric's *2001 Annual Report*.

1. "Touchstone Energy establishes relief fund," *Basin Update*, Basin Electric Power Cooperative, Sept. 26, 2001, 1.

U.S. Sen. Byron Dorgan of North Dakota (center), chairman of the Senate Subcommittee on Water and Power, questions witnesses on transmission issues at a field hearing in Bismarck, ND, Aug. 7, 2001. Congress was in recess, so Dorgan asked U.S. Rep. Earl Pomeroy of North Dakota (right) to attend. Leon Lowery, staff member of the Senate Energy and Natural Resources Committee, looks on.

Meanwhile, a newly elected president, George W. Bush, announced his ideas for a new national energy policy in early 2001, including making the nation's electricity grid more interconnected and using fossil fuels for powering America.

Those ideas sounded good to coal-based utilities like Basin Electric. "The nation should use all the energy sources and strategies available to it, including coal, nuclear, renewable, geothermal, natural gas, fuel oil and conservation," wrote Harper and Child.[2]

Despite Bush's declaration, a new U.S. energy policy likely would take years to finally formulate, with the future of coal use in the balance.

"We fear political agendas and tunnel vision toward some arbitrary environmental goals will get in the way of the most practical solutions that could benefit both the environment and the economy," said Harper and Child in the *2001 Annual Report*. "The best solutions must consider regional differences like fuel availability and existing pollution (control) technologies rather than dictating directives to fit the entire nation's requirements in one neat box. We think that would be disastrous for the nation's economic well-being."

A new energy policy being written by the Senate Energy Committee was to address the nation's growing problem of transmission, according to U.S. Sen. Byron Dorgan of North Dakota. "Whether it is a production of wind energy or the production of additional (conventionally produced) electric energy, it is not going to be of much value to the region or the country if we are not going to be able to transmit (it)," said Dorgan, who hosted a Senate Energy Subcommittee on Water and Power hearing in August 2001.[3] Regional Transmission Organizations (RTOs) had become an important part of the extended process initiated by the Federal Energy

2. "We've got the power," *2001 Annual Report, 4*.

3. Kathi Risch, "Sen. Dorgan holds field hearing on transmission issues in North Dakota," *Basin Today* (October 2001, Basin Electric Power Cooperative, 6.

Regulatory Commission (FERC) aimed at restructuring the electric industry to promote competition in the wholesale power market. RTOs were independent system operators that would direct the control of all transmission systems in that region, intended to maintain an efficient transmission grid.

But joining RTOs concerned Basin Electric and its members.

Testifying at the subcommittee hearing in Bismarck, Ted Humann, Basin Electric senior vice president of Transmission, said Basin Electric hadn't yet joined an RTO because the proposed pricing structure would unfairly shift transmission costs to rural customers. He testified against so-called "license-plate pricing," which meant that a customer pays a transmission fee based on the cost of transmission within that transmission zone, even if that power was transmitted across several zones. "This pricing does not work because customers with loads in one zone and generation in another … bear none of the costs of the transmission facilities in the other zones, even though they may be the principal beneficiaries of those transmission facilities."

Instead, Basin Electric favored a single or "postage-stamp" rate, in which customers paid for the use of the transmission system of the entire RTO region, he said. That would eliminate the inequities of the license-plate pricing and provide appropriate funding and incentives to build transmission needed to serve the entire region. Humann also listed several other prerequisites for Basin Electric joining an RTO, including that:

- Distribution facilities are not included in the RTO;
- There is no mandatory rate-unbundling;
- The roles of the RUS or federal Power Marketing Administrations are not changed;
- Existing power marketing contracts are grandfathered; and
- Standard depreciation and typical rates-of-return are used for all new facilities constructed instead of incentive rates.

"For our country to have a viable energy policy," Humann said later, at the Basin Electric annual meeting in November 2001, "I believe the Congress and FERC must move forward decisively to do what is best for all consumers. And that is to support a national transmission grid similar to our national Interstate Highway System."[4]

An intertie and other power supply initiatives

Basin Electric couldn't wait for a final energy policy to meet the needs of its members and their consumers. It worked on completing projects begun earlier, initiated others and continued planning for future power supply.

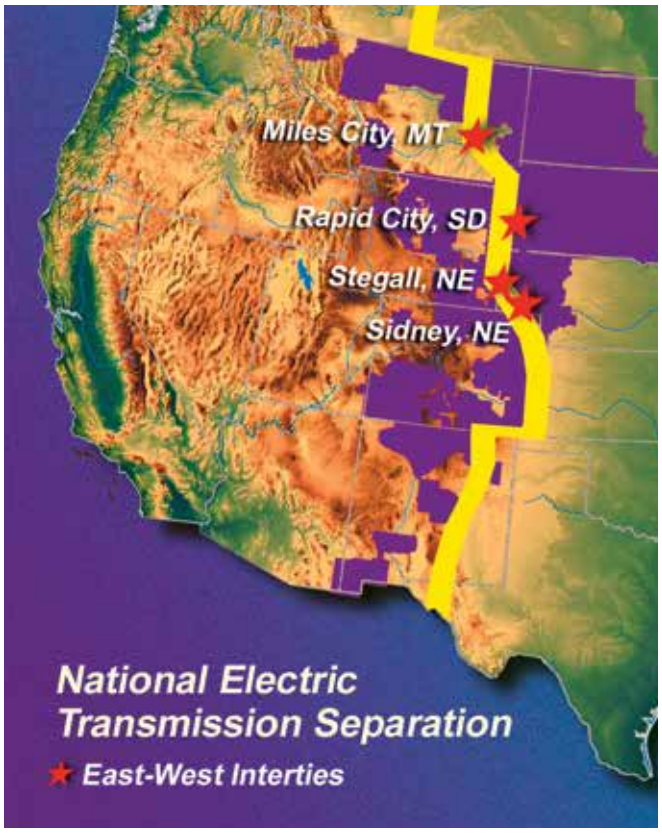
One project was a joint effort with Black Hills Power of Rapid City, SD, in developing a 200-megawatt east-west electric system intertie near Rapid City. Estimated to cost $70 million, the direct current or DC intertie would allow the transfer of electricity between the eastern and western electrical grids. This would be the fourth facility of its kind; the others located in Nebraska and Montana.

Interties became necessary because the nation's transmission systems developed from the coasts to the center of the nation. Both systems operate with alternating current of approximately 60 Hertz (cycles) per second, but the slightest upset such as an electric generating unit abruptly shutting down may change the cycle just slightly, so that the systems are not synchronized and cannot be directly connected. The intertie facilities take alternating current from one side, convert it to direct current, and then convert it back to alternating current, allowing a power transfer.

This project had been considered for some time, but it now became critical for Basin Electric, which is one of the few utilities with power plants and service territory on both sides of the national electric transmission separation. Rapid development of coal bed methane production in northeast Wyoming and growing energy needs in South Dakota made the project necessary.

"This project is a real long-term answer to many situations," said Jim R. Miller, Basin Electric project services manager and intertie project coordinator. "It has immediate benefits for load serving and system reliability and broad benefits for the future. It's good

4. "Sounding off on Basin Electric past, present, future." *Basin Today* December 2001, Basin Electric Power Cooperative, 5.



Basin Electric power resources and the membership service territories are located on both sides of the national electric transmission separation and cannot be connected directly except with a direct current (DC) tie. The tie takes alternating current (AC) from one side, converts it to DC, and then converts it back to AC.

for Basin Electric, South Dakota, Wyoming, and the member-consumers in both states."[5]

Completion of the intertie would come in the fall of 2003.

Basin Electric needed a more immediate solution for its member, PRECorp, in serving the fast-growing coal bed methane development in northeast Wyoming. The answer: nine natural-gas-fired combustion turbine generators totaling 45 megawatts at three sites.

This project was the largest distributed generation project in Basin Electric's history.

5. Mary Klecker, "Basin Electric 'ties' into new project," *Basin Today,* August-September 2001, Basin Electric Power Cooperative, 4.

No power sources or sufficient transmission was immediately available for the remote wells in rural Wyoming. The industry had developed quickly with the huge amounts of valuable coal bed methane underground. The gas is released when water is removed from coal seams to relieve pressure and it is then compressed and piped with natural gas to customers.

"This was the quickest thing we could put in," said Dave Schmitz, Basin Electric's vice president of engineering and construction. "These turbines are serving as a bridge. If development continues and proves to be long term, we will have to consider future power supply options."[6]

After 1½ years of planning and construction, the turbines went on-line in September 2002.

Basin Electric also moved ahead on another power-supply initiative, finalizing a contract in 2001 with an Iowa member, Corn Belt Power Cooperative, for a peaking power station

Under the contract, Basin Electric would own half of an 80-megawatt gas turbine near Spencer being developed by Corn Belt Power, which owned a coal-based generating station located at the site. Known as the Earl F. Wisdom[7] Generating Station 2, groundbreaking was held in April 2003 with completion the following spring.

Those developments and the Cooperative's financial successes underscored the benefits of working cooperatively. "We've been able to achieve success because we've led with a vision to meet member needs," according to a joint report by Harper and Child, in the *2001 Annual Report*. "We've accomplished goals that none of us could alone."

2001: A year of successes

Basin Electric's financial success resulted from near-record surplus power sales based on high electricity prices on the open energy market, particularly in Western states.

6. Mary Klecker, "Distributed generation churning out megawatts, "*Basin Today,* November 2002, Basin Electric Power Cooperative, 7.
7. An interesting aside, Earl F. Wisdom was the father of Basin Electric's first general counsel, William Wisdom.—Ed.

Barber Creek, 20 miles west of Gillette, WY, is one of three Basin Electric combustion turbine generator sites in northeastern Wyoming; the other two are Arvada and Hartzog. Each site consists of three generators, each with a generating capacity of five megawatts.

Several factors led to a wild national electricity market in the first half of 2001, including drought, hot weather, insufficient power supply facilities, increased power demand driven by technology and high natural gas prices.

All of this led to outstanding power sales and a healthy margin for Basin Electric, which sold 16.3 million megawatt-hours (MWh) of electricity in 2001, a total second only to the 16.8 million MWh the year before. The 2001 total included record sales of 7.8 million MWh to member cooperatives, which conversely meant less surplus electricity was available for sales on the open market.

In anticipation of unusually high margins, a special meeting of Basin Electric's membership was called in June 2001 to consider a bylaw amendment regarding revenue deferrals. Members approved the amendment increasing the deferral of revenue from electric sales from $75 million to $200 million and extended the period for using the deferrals from six to 10 years. It was just the third special membership meeting in Basin Electric's history.

Meanwhile, Dakota Gas had another roller-coaster year. The subsidiary sold its synthetic natural gas and ammonia fertilizer at great prices in the first half of the year but then prices fell. The Synfuels Plant didn't achieve its normal high availability, with several projects undertaken during the year to improve reliability. As a result, despite having record revenues of more than $270 million, at year's end, Dakota Gas posted a profit of just $579,000 after paying the federal government $13 million under the 1988 purchase agreement.

However, with an overall excellent financial year for the Cooperative, Basin Electric's board of directors took several actions to benefit members. Directors approved a $50-million rebate for members in the past year's business, in addition to allocating a pre-tax margin of nearly $39 million as patronage capital and deferring more than $80 million of 2001 revenue for use for future rate relief and rate stability.

"The board recognized early this year that the Cooperative was doing better than projected and made plans to derive the most benefit for the members," said Buzz Hudgins, senior vice president and chief financial officer, at the 2001 annual meeting. "This is the board's game plan, and we believe it is a winning one for all the players."

Basin Electric would build on that winning game plan in the next several years, a period of lower or stable average Class A member rates. In 2001-05, average Class A member rates would hover in the range of 30-31 mills (about 3 cents) per kWh. (See Appendix H.)

Wind: Part of a "green energy" blueprint

Wind energy would rise to become an important part of energy-resource development through 2005.

In January 2002, Basin Electric's newest resource—a pair of wind turbines with a total generating capacity of 2.6 megawatts and able to serve 600 homes—went on line in Chamberlain, SD. This joint effort with East River Electric Power Cooperative provided that Basin Electric would own and operate the turbines.

Ron Harper speaks at the Chamberlain, SD, wind turbines dedication Nov. 3, 2001. Also pictured on the podium (from left to right) are Wayne Wright, president, East River; John Dunlop, American Wind Energy Association; Jim Burg, chairman, South Dakota Public Utilities Commission; Chris Vandeventer, representing U.S. Sen. Tom Daschle; and Jeff Nelson, East River general manager, who emceed the event.

"It marks a new era in the history of Basin Electric," said Ron Rebenitsch, Basin Electric's member marketing manager, in a news release.[8] "With the operation of PrairieWinds, Basin Electric can now add wind-powered electricity to its generating family of power plants."

U.S. Sen. Tom Daschle of South Dakota said the wind projects "create jobs, encourage economic growth and provide our county and local governments with much-needed tax revenue. They will serve to meet our nation's growing energy needs and provide South Dakotans and other Americans with cheap, efficient and clean energy."[9] Customer support provided the impetus for this historic wind energy project.

More than 4,000 customers signed up to buy wind power in 100-kWh blocks for $3 extra per month,

8. Basin Electric Power Cooperative, "Basin Electric's Newest Power Plant on-line and operating," news release, Jan. 10, 2002, 1.

9. Daryl Hill, "PrairieWinds dedication marks new generation for Basin Electric," *Basin Today*, December 2001, Basin Electric Power Cooperative, 10.

Ron Rebenitsch

according to Rebenitsch, who became known as "Mr. Wind" by many at Basin Electric. Eventually, he was named the Cooperative's manager of Alternative Technologies, responsible for the Cooperative's green and renewable resources.

Wind now had become part of Basin Electric's generation base as well as part of the members' resources. By 2002, 50 of Basin Electric's member cooperatives were offering wind power to their customers, more than half from South Dakota.

Renewable energy news became more prevalent in the next few years.

In September 2002, Basin Electric reached agreement with FPL Energy LLC,[10] the nation's leader in wind energy development, for building a 40-megawatt wind energy project in North Dakota and another in South Dakota. Constructed and owned by FPL, the two projects' turbines would produce enough electricity to serve a total of 25,000 typical homes. Basin Electric would purchase the entire output of the projects, which would be dedicated as the North Dakota Wind Energy Center near Edgeley and Kulm and the South Dakota Wind Energy Center near Highmore.

Harper, Basin Electric's CEO, said in a news release announcing the projects, that they represented a larger team effort, requiring the close cooperation of the local cooperatives and statewide organizations to make them possible. Interest in wind development had grown as the technology advanced significantly in the past 20 years, he said, adding that electric cooperatives in the region "are again proving they are leaders in implementing new technologies to meet the demands of their consumers."

U.S. Sen. Byron Dorgan of North Dakota credited Basin Electric for making a substantial investment in wind

10. FPL Energy (renamed NextEra Energy Resources in 2008) was formed in 1998 to manage growing interests in electricity markets outside FPL's Florida service area. The subsidiary focuses on clean energy technologies and fuels.

A B-52 bomber flew over the dedication of two wind turbines south of Minot, ND, on Nov. 6, 2002. The Minot Air Force Base would purchase much of the two turbines' capacity.

energy in North Dakota. "Clean and limitless energy makes sense for North Dakota and it makes sense for America," he said.[11]

By late 2003, these projects began producing electricity.

Meanwhile, on Nov. 6, 2002, a B-52 flew over two new wind turbines south of Minot, ND, to commemorate the startup of a new wind project. The bomber came from the Minot Air Force Base, which would be purchasing much of the project's capacity of 2.6 megawatts.

"In the last two years, Basin Electric has added new generating capacity fueled not only by wind but also with natural gas," said Harper, speaking at the dedication of the joint project of Basin Electric and Central Power Electric Cooperative, a Class A member headquartered in Minot. "Electric cooperative consumers served by

11. Basin Electric Power Cooperative, "Basin Electric announces two 40-megawatt wind generation projects in the Dakotas," news release, Sept. 16, 2002.

Basin Electric's member systems can be proud of the investment that's been made in North Dakota to ensure adequate power supply now and in the future."[12]

North Dakota Gov. John Hoeven, as well as U.S. Sen. Kent Conrad and U.S. Rep. Earl Pomeroy, both of North Dakota, commended Basin Electric and Central Power for adding renewable wind power to the existing coal-based generating capacity. With the new wind projects, renewable energy now comprised 4 percent of Basin Electric's energy resource mix.

Basin Electric also earned national recognition for its commitment to wind energy. The Cooperative received the 2002 Wind Cooperative of the Year Award given by the National Rural Electric Cooperative Association and U.S. Department of Energy (DOE). Basin Electric was selected for its leadership among rural electric cooperatives in expanding opportunities for wind energy, said Jim Powell, director of DOE's Atlanta regional office. "Your wind energy program is an excellent success story in meeting both growing consumer and organizational interests in wind power," he said.[13]

Basin Electric's renewable energy portfolio would continue to grow in the next several years.

Growth requires power supply decisions

Even as Basin Electric developed green and renewable energy resources, tough decisions remained regarding a major source of electricity to serve its members' ever-growing power needs.

In 2002-05, forecasts of annual member load growth rose from 2.1 percent to 3.1 percent. That meant Basin Electric would need to add at least 1,100 megawatts of new generation by 2015 or sooner.

That projected growth seemed contradictory, as most rural areas served by Basin Electric members were losing population. But several factors contributed to the growth. Chiefly, there was coal bed methane development in Wyoming, enhanced oil recovery in western North Dakota, ethanol plant loads in South Dakota and elsewhere, and the sprawl of major cities in the region.

With this, the Cooperative was transitioning from having surplus power to a position of developing or acquiring new sources of electricity. In this growth scenario, Basin Electric also sought to diversify its generation and boost its renewable energy resources.

During this time, Basin Electric had been contacted by utilities outside of the Cooperative family about future power supply, and the Cooperative was seriously considering those options. One of those involved the possible acquisition of the utility assets of NorthWestern Corporation, which filed for bankruptcy in September 2003. NorthWestern had been the NorthWestern Public Service Company of Huron, SD, renamed in 1998.

Following deregulation in Montana, Montana Power Company also ran into financial problems, and Basin Electric considered becoming part of a plan to purchase Montana Power, said Ted Humann, in a 2010 interview. Humann said that plan never developed.[14]

Instead, NorthWestern bought Montana Power's energy distribution and transmission business, and Pennsylvania Power & Light acquired the generating assets.

With NorthWestern's bankruptcy in 2003, Basin Electric joined with East River, the Montana Associated Cooperatives and MDU Resources Group Inc. of Bismarck to form the Alliance for a Secure Energy Future for possibly purchasing NorthWestern.

MDU was interested in assets tied to larger communities in NorthWestern's service area in Montana and South Dakota as well as all of it natural gas properties. Electric cooperatives focused on the distribution facilities of the smaller communities.

However, this prospect for acquisition didn't materialize. NorthWestern failed to respond to proposals from the alliance, and so members decided in May 2004 to stop any efforts to acquire NorthWestern's assets and dissolved the alliance.

12. Daryl Hill, "'Basin blue' wind turbines salute North Dakota landscape," *Basin Today,* December 2002, Basin Electric Power Cooperative, 24.
13. Mary Klecker, "Basin Electric recognized nationally for wind efforts," *Basin Today,* May 2003, Basin Electric Power Cooperative, 17.
14. Ted Humann, interviewed by author, June 10, 2010.

Options for future power supply were narrowing for Basin Electric, but the decision on future generation resources remained complicated. Evolving environmental regulations and FERC's rule making regarding the wholesale power market and transmission were among those factors.

And another major question remained unanswered: Should Basin Electric build coal- or gas-fired generation? With its generating capacity largely coal, the Cooperative was trying to remain flexible. Environmental and regulatory unknowns could make new, large coal-based generation overly expensive. "While gas generation is easier to site and maintain, we are concerned about dramatic swings in natural gas prices and their ultimate impact on electric rates," Harper and Child said in the *2002 Annual Report*.

Interestingly, the Great Plains Synfuels Plant owned by subsidiary Dakota Gasification Company emerged as a new strategic option. Through its plant, Dakota Gas "essentially owns a gas field," with enough fuel to run a power plant up to 700 megawatts, according to Harper and Child. "The Synfuels Plant presents options for the direct use of the gas to make electricity or as a financial hedge to gas prices for gas generation located elsewhere," they said in the 2002 report. But, indirectly, employees at Basin Electric-operated baseload power plants—the Laramie River, Antelope Valley and Leland Olds stations—made the case daily for relying on coal generation in the future. Management and employees kept these facilities running efficiently and safely, producing record amounts of electricity and keeping them available for generation at higher rates compared with plants nationwide.

For instance, the combined running capacity for the plants averaged above 96 percent in 2002, compared with a national average of 81 percent. The plants were available for making electricity more than 90 percent of the time, with the national average at about 85 percent.

In 2003, the three baseload plants combined for a record generation total of nearly 24,248,069 net megawatt-hours (MWh), surpassed by just 30,061 MWh two years later. Vern Laning, Basin Electric's vice president of plant operations, said the plants "stand out as benchmarks for reliability and power production," adding, "Not only have we produced record amounts of electricity, we accomplished it in full environmental compliance."[15]

After reviewing management studies, Basin Electric's directors in 2003 decided that future baseload generation would be coal, not natural gas. "Today, we see how growth in gas-fired generation has reshaped the demand for natural gas, which contributes to the imbalance in the supply and demand," said Harper. "This imbalance is causing supply shortages and tremendous price volatility. We've determined that using natural gas for baseload generation is not an option."[16]

Environmental and transmission challenges

Environmental regulations and electric utility deregulation and associated transmission issues continued to cause uncertainty in the industry.

The need for nationwide transmission planning elevated in August 2003 when a huge electric power blackout hit large parts of the northeastern United States, the Midwest, and southern Canada. Major cities like New York, Detroit and Cleveland were without power for hours.

Humann, Basin Electric's senior vice president for Transmission, offered a perspective on the blackout and the need for fixing the country's disjointed transmission system: "The big blackout affected about 50 million people in eight states. … The total economic impact of this outage is estimated to be from $7 billion to $10 billion." Investing $10 billion could build 12 high-voltage transmission lines between Bismarck and Phoenix, he said, during Basin Electric's annual meeting in 2003.

15. Basin Electric Power Cooperative,"Basin Electric power plants set several new records in 2003," news release, Jan. 30, 2004.
16. "The state of the Cooperative," *Basin Today,* December 2003, Basin Electric Power Cooperative, 7.

FERC was offering various rules and proposals in its long-standing effort to deregulate the electric industry, particularly by opening the wholesale transmission system. That effort included a mandate to create RTOs.

Humann said any proposals needed to recognize that electricity uses the entire transmission grid in its path to the end user. "Only a pricing mechanism that recognizes the physics of electricity and the common good provided by the high-voltage transmission grid will solve this problem," he said.[17] A system-wide average rate will work because investors know they will recover their investment, he said. "Everyone wins because adequate transmission will be built, allowing the movement of electric power and minimizing this country's dependence on foreign energy."

FERC continued working on the transmission issue in the next few years.

Basin Electric, meanwhile, had been cautious, not joining an RTO because of the license-plate pricing issue and concern over loss of consumer control. However, in September 2005, the Cooperative decided to participate in the Midwest Independent System Operator. It joined as a non-transmission owning member to ensure it could effectively participate in the decisions of the RTO.

Environmentally, Basin Electric promoted the broad concept of a balanced U.S. energy policy using a variety of resources, including coal. In doing so, it pointed out that 70 percent of electric cooperatives' generation nationwide was coal-based, and that coal-fueled power plants provide 52 percent of the nation's electricity.

For Basin Electric, coal would remain at its core. "Coal is our foundation, and although we have diversified and grown our resource base, coal is what holds us up and it will be at the core of our generation for the foreseeable future," Harper said, in a 2004 *Basin Today* story. "The rules are changing and so are the challenges, but we've always been leaders in rural America, and that won't change."

The Cooperative and its members had made big investments in environmental improvements. By 2005, it had spent $756 million for environmental-control equipment, including at the Great Plains Synfuels Plant. Annual operating costs for environmental equipment at all facilities stood at $72 million. With those investments and improvements, Basin Electric had achieved 100 percent compliance with all clean air regulations, according to Harper and Child.[18]

Still, existing and pending environmental regulations were forcing Basin Electric and the rest of the utility industry to anticipate meeting even more stringent caps on emissions. The Cooperative had taken several actions to keep abreast of a myriad of environmental developments.

Though carbon dioxide was not yet considered a pollutant, Basin Electric had been involved in efforts for research and development that would allow coal to be burned cleanly in the future. Along with Dakota Gas and other regional utilities, it became a member of a DOE Regional Carbon Sequestration Partnership Program, which was coordinated by the Energy & Environmental Research Center at the University of North Dakota.

Basin Electric also established its own Environmental Assessment Task Force in 2003 to monitor proposed changes to environmental regulations as well as develop strategies to maintain Basin Electric's compliance.

The Environmental Protection Agency (EPA) announced it was preparing draft rules to limit power plant emissions of mercury. Subsequently, the EPA issued its Clean Air Mercury Rule in March 2005, which set the limits and created a market-based cap-and-trade system for mercury.

All coal contained mercury, but, at this time, there were no known technologies to remove it. Basin Electric joined with research groups, utilities, and coal companies in a task force to test mercury control options. That led to large-scale mercury removal tests at the Leland Olds Station that involved spraying an additive on the coal before it was pulverized. Later, in 2005, tests also followed at the Antelope Valley and Laramie River stations.

17. Ibid, 9.

18. "President and General Manager's Report," *Basin Today,* November-December 2004, Basin Electric Power Cooperative, 4.

An artist's conceptual representation of Basin Electric's Dry Fork Station scheduled for completion in 2011.

While studying generation resources, Basin Electric had taken the lead in analyzing a variety of technologies. For instance, in June 2004 it submitted a funding application to the DOE for a project to "re-power" Unit 2 of Leland Olds Station, turning it into the first-ever Hybrid Gasification Combined Cycle plant, which would result in improved efficiencies and lower emissions.

"Basin Electric has always been a pioneer, and takes careful, calculated risks that set us apart from others," Harper said. "We have yet to regret any of our progress—and that's what we've made—progress."[19]

A historic announcement, booming business and more wind

Even as the Cooperative dealt with environmental challenges, future power supply moved to the forefront of planning efforts.

In January 2004, Basin Electric joined with Minnkota, Montana Dakota Utilities Co., Missouri River Energy Services and Heartland Consumers Power District to explore building a 600-megawatt plant and 100-megawatts of wind generation, with a target operation by 2015. Sites to be considered were in North Dakota, South Dakota and Iowa.[20]

A historic decision came later that year, though not linked to the joint study earlier in the year.

On Dec. 20, 2004, the Cooperative's board of directors approved plans to build a major coal-based power plant. It was the first time in 26 years that the Cooperative announced plans for a new baseload coal plant.

The power plant would be located in the Gillette, WY, area. No site had been finalized yet, but the plant was projected to be operational by 2011. It would be fueled with coal from the nearby Powder River Basin.

The plant would be built to meet overall growing demand by member systems in nine states, including the demand in PRECorp's area in Wyoming caused by growth in rural areas, mineral resource development and new rural housing, according to Clyde Bush, who had been named project manager.

Bush said in a news release the objective was to build "a high-quality, environmentally sound, cost-effective generation facility." Fuel supply and site location needed to be addressed yet as well as the steps necessary to obtain regulatory and other permits, he said.

Later, Basin Electric directors named the proposed new facility the Dry Fork Station, recognizing its location on a bank of the Dry Fork of the Little Powder River, as well as its proximity to the Dry Fork coal mine of which

19. Mary Klecker,"Coal is here to stay," *Basin Today,* July-August 2004, Basin Electric Power Cooperative, 3.
20. "The next generation of power," *2004 Annual Report,* Basin Electric Power Cooperative, 11.

Basin Electric is part owner. Dry Fork Mine is operated by Western Fuels Association, a national fuel supply cooperative, which also supplies coal to the Laramie River Station.

Dry Fork Station was great news, but another development threatened the Cooperative's operations in Wyoming.

A 20-year contract expired under which BNSF Railway had delivered coal to the Laramie River Station. When negotiations over a new contract failed, the railroad published "common carrier" rates, effectively doubling the rail cost for the coal shipped.

That prompted Basin Electric and the Western Fuels Association to file a complaint to the U.S. Surface Transportation Board (STB) in October 2004.

In a *Basin Today* story, Basin Electric's management detailed its complaint regarding coal shipments to Laramie River Station, which is operated by Basin Electric for participants in the Missouri Basin Power Project. Laramie River Station is a "captive" customer at the power plant end of the track, which means it has no alternatives to the railroad serving its location, Harper said.[21] Basin Electric sought to have the STB set aside the rate increase imposed on coal deliveries. The railroad unlawfully exerted its monopoly power by imposing unreasonably high common carrier rates.

Besides filing the complaint, Basin Electric and Western Fuels turned to Congressional members, getting members from North Dakota, Minnesota, Montana, West Virginia and Idaho to introduce bipartisan legislation to combat monopolistic practices facing coal consumers, agricultural producers and others.

On the brink of a new era of growth

With Basin Electric on the brink of a new era of growth, the Cooperative looked closely at preparing for a new generation of employees. The average age for employees was 46, and the Cooperative projected that it would be losing more than 600 workers through retirement by 2016. "We will have a lot of institutional history walk out the door," said Harper. "That's why we knew we had to develop a work-force plan—to get us ready for the future."[22]

Sharon Klein

The human resources division spearheaded that plan. Sharon Klein, Basin Electric human resources manager, said the Cooperative was initiating and continuing several practices to ensure an adequate work force in the future, including identifying replacement plans for highly technical jobs, a mentoring program and expanded leadership and management training for existing employees. Job training and cross-training would continue as well as the existing internship program.

Klein said the Cooperative is in a strong position to retain and attract employees. "We'll transition into the next era and come out on top. Basin Electric is not afraid of challenges; we've built and trained an entire work force from the ground up. We've done it before, and we'll do it again."

As 2005 began, signs of the new era of growth turned up everywhere. "Business is booming…. No end in sight." Those headlines in the *2005 Annual Report* gave an indication of the development under way.

Growth also came in the number of Class A members. Basin Electric added two in Minnesota in spring 2005, pushing the Cooperative's eastern service territory to the border of Minneapolis-St. Paul. Joining Basin Electric were Minnesota Valley Electric Cooperative in Jordan and Wright-Hennepin Electric Cooperative in Rockford.

Wayne Backman, senior vice president of Generation, said those additions culminated a four-year process in resolving transmission and power supply issues. With that done, the cooperatives signed all-supplemental

21. Kathi Risch,"The Great Plains Robbery," *Basin Today* May-June 2005, Basin Electric Power Cooperative, 3.

22. Mary Klecker, "Generating our future," *Basin Today,* November-December 2004, Basin Electric Power Cooperative, 6.

Construction work on Groton Generation Station Unit 1 shows the generator step-up transformer on the concrete foundation. A blast wall to the left will protect the turbine-generator to be placed on the other side in the event of a transformer fire or explosion.

requirements contracts, with Basin Electric supplying their load growth from November 2006 until 2039.

To accommodate load growth, planning had been under way for a peaking station, and in August 2005, construction began on the 95-megawatt gas-fired station near Groton, SD. The Groton Generation Station would feature sophisticated engineering, a combination of "aeroderivative" jet engine technology and heavy-duty gas turbine technology. General Electric touted the turbine as the world's most efficient of its kind. Plans called for the station to be completed in summer 2006.

An important wind-energy development came about then as well. In September 2005, a groundbreaking was held for a 33-turbine, 49.5-megawatt resource called the Wilton Wind Energy Center in central North Dakota, owned and operated by FPL Energy, with the output purchased by Basin Electric.

By November, the green power initiative turned into an overall renewable resource goal. At the Cooperative's 2005 annual meeting, Basin Electric members unanimously approved a resolution that the Cooperative obtain 10 percent of the capacity to meet its member demand through renewable energy by 2010.

Melanie Roe, a Central Montana Electric Cooperative director and chairwoman of the resolutions committee, said committee members felt it was the "right thing to do." She pointed out that Basin Electric may be the only utility in the region to set a firm, voluntary renewable goal without any governmental mandate, representing a "directive from the people who own Basin Electric." Establishing the goal will help to maintain the Cooperative's focus on the commitment to renewable energy, and not just wind energy, she said.[23]

In fact, construction on another green energy project already was under way.

The new project involved a heat recovery process on the 1,249-mile Northern Border Pipeline, which carried natural gas from Canada to Chicago. Expected to produce about 22 megawatts of green energy and no emissions, the $36-million development would consist of four generating stations along the pipeline in North Dakota and South Dakota, fueled by hot exhaust recovered from the pipeline's compressor stations. Completion would come by the end of 2006.

With these new developments, the Cooperative's renewable portfolio was the largest among all utilities in North Dakota, according to Harper.

Meanwhile, a national energy policy emerged. President George W. Bush signed the Energy Policy Act of 2005 in August, and Basin Electric saw some good features, including:

- Creating investment tax credits encouraging investment in clean coal facilities;
- Establishing a loan guarantee for constructing a lignite coal gasification facility in North Dakota;
- Requiring DOE to set up a program to develop and test technologies to remove mercury from lignite;
- Establishing "clean renewable energy bonds," giving cooperatives and public power systems a financing tool for renewable generation comparable with those received by investor-owned utilities;

Gasification, Harper said, was one area especially important for the future of electric utilities.[24] Coal will continue to play an important role in meeting the nation's energy needs, he said, but the industry must consider changing the way electricity is produced from fossil fuels.

Few companies have tried using gasification to generate electricity, largely due to the difficulties and cost, Harper said. The new energy act allows DOE to spend $200 million annually in 2006-14 on clean coal projects, with 70 percent required to be used for coal gasification technologies. Such risk sharing is justified, he said, because the nation's economy and environment will benefit from improving how fossil fuel reserves are used.

For Basin Electric, gasification had long been part of the future.

23. Basin Electric Power Cooperative, "Basin Electric membership adopts renewable energy goal," news release, Nov. 3, 2005.

24. Ron Harper, "We have an energy bill!" *Basin Today,* September-October 2005, 1.

Subsidiary milestones and a new acquisition

During these first years of the new millennium, Basin Electric's two major subsidiaries—the Dakota Gas and Dakota Coal companies—recorded important achievements as well.

In the summer of 2002, the Great Plains Synfuels Plant reached an important environmental mark. For the first time since the plant started up in 1984, it was now operating in full environmental compliance, as certified by the North Dakota Department of Health. That notice came after the plant successfully started up a $40-million wet electrostatic precipitator as well as initiating an odor reduction project, a culmination of four years of planning and work.

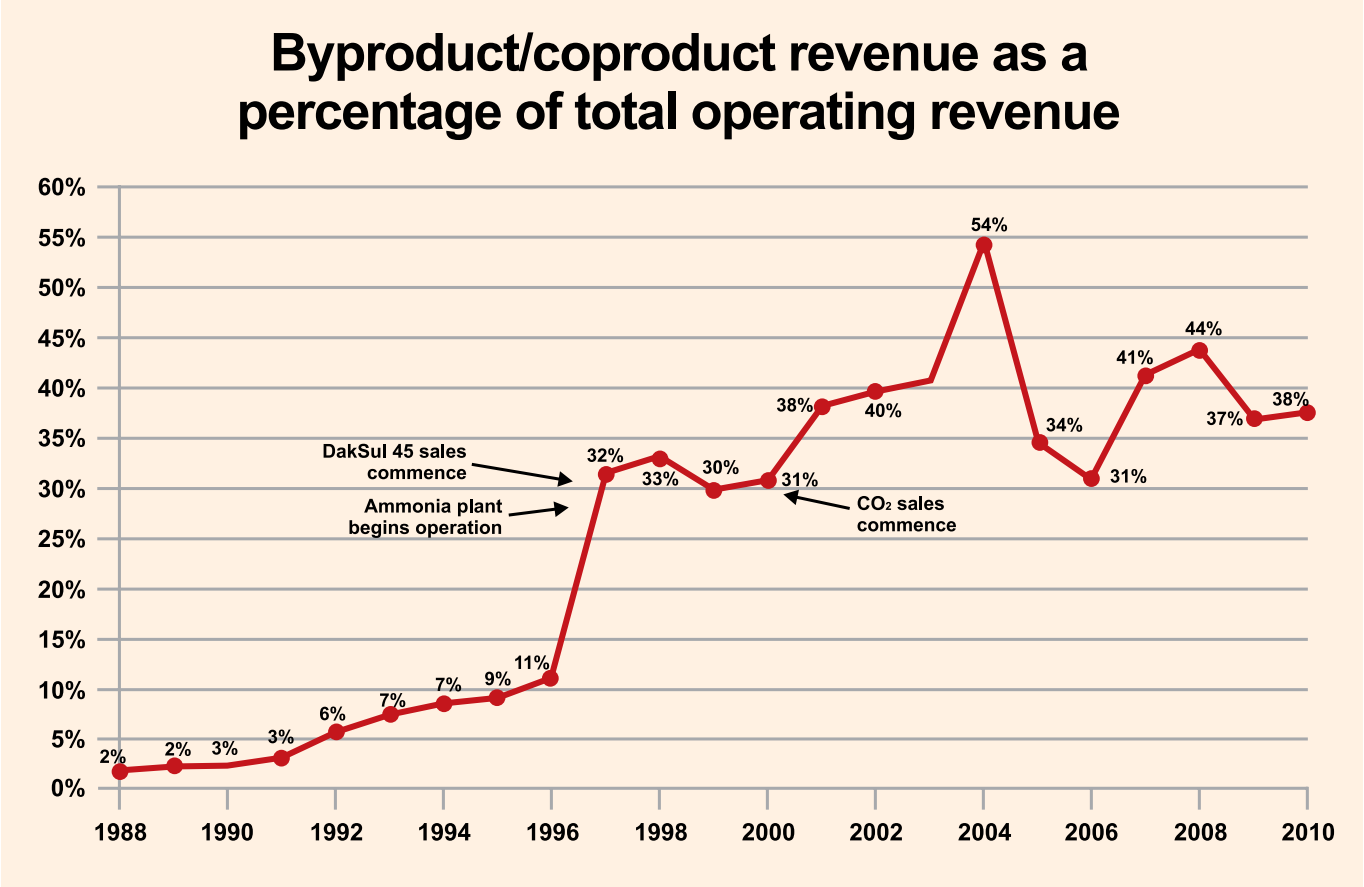
Dakota Gas personnel had been working to clear up the emissions from the plant's main stack as well as reduce the odor coming from the plant, which were requirements in a consent agreement signed with the state Health Department in 1998. Added to the existing sulfur-dioxide scrubber, the precipitator removed microscopic particles from the flue gas leaving the scrubber.

As the precipitator started up in February 2002, "the results were immediate and dramatic," said Mike Pontbriand, project manager for Dakota Gas.

Both projects were formally dedicated in August 2002.

Operationally, the Synfuels Plant also achieved a milestone later that year; it reached 1 trillion cubic feet of natural gas production on Dec. 1, 2002, some 18 years and 126 days after it began converting lignite into synthetic natural gas. That amount of fuel is enough to heat nearly 188 million homes for one day, according to the *Basin Electric 2002 Annual Report*.

Diversifying the Synfuels Plant's operations also reached a new milestone in 2002. Revenue from byproducts



Dakota Coal Company purchased Montana Limestone Company, the quarry operator, on July 31, 2002, for better control over limestone quality. While Dakota Coal had certain rights to the limestone reserves, Montana LImestone Company, subsequently purchased 50 percent of the shares of the Bigstone Limestone Company, which owns the surface and limestone reserves, in February 2008.

and other sources climbed to nearly $96 million, about 39 percent of total revenue. That compared with just 2 percent in the plant's first year under operation by Dakota Gas with the company's goal remaining to earn half of its revenue from products other than natural gas.

Dakota Coal, Basin Electric's other major for-profit subsidiary, had successful operations in this period as well. Its primary purpose is to help ensure a quality lignite supply to the Synfuels Plant and two Basin Electric plants (Antelope Valley Station and Leland Olds Station) in central North Dakota.

Besides working with Coteau on coal quality, Dakota Coal continued to supply limestone for power plant scrubbers as well other businesses. Wyoming Lime Producers, a Dakota Coal division, provided that supply from a kiln near Frannie, WY.

Dakota Coal initiated two major changes in 2002 that would help to guarantee quality coal and limestone for its customers.

That year Dakota Coal purchased the Montana Limestone Company to gain control of a limestone quarry near Warren, MT, subsequently making changes to continue production of the best quality lime. This acquisition fit with Dakota Coal's plan to double its production from its Frannie Lime Plant, based on projected additional lime needed for environmental controls at coal-based power plants.

Dakota Coal also worked with Coteau on a huge expansion of the Freedom Mine to provide a better blend of coal from various mine areas aimed at lowering plant maintenance and helping ensure environmental compliance. That led Coteau to submit a permit to the North Dakota Public Service Commission to expand Freedom Mine, the single largest mine permit submitted to that state agency.

Approval for the mine expansion finally came in September 2005.

Dakota Gas, meanwhile, hoped to expand the sale of its most lucrative byproduct, carbon dioxide, through the company's pipeline to a Canadian oil field. Under a

15-year contract with PanCanadian (later named EnCana, now Cenovus Energy)[25], Dakota Gas had been selling about 95 million cubic feet of carbon dioxide since 2000. A subsequent five-year contract started the sale of an additional 33 million cubic feet.

In 2005, Dakota Gas approved a 20-year contract for enhanced oil recovery with another firm, Apache Corporation. Apache would buy 25 million cubic feet to be shipped to its oil field by 2006. To accommodate these increases, Dakota Gas directors also approved an additional compressor at the Synfuels Plant and booster pump along the pipeline.

Aiming for more financial stability, Dakota Gas earlier initiated a price-hedging program to help ensure adequate returns for its synthetic natural gas. The hedging program helped insulate the company from the extreme swings in the open natural gas market. By 2004, Dakota Gas had hedging agreements on about two-thirds of the Synfuels Plant's gas production, ensuring that the company receives a minimum price, but then foregoing the benefits of higher prices.

With those risk-mitigation efforts and plant improvements, Dakota Gas felt it would find more financial stability in this period.

But not in 2004.

A planned mega-maintenance shutdown for six weeks in mid-2004—the first in the plant's 20-year history—caused a considerable financial impact for Dakota Gas. Involving months of planning, this "black plant turnaround" was aimed at ensuring that coal gasification processes could continue uninterrupted for another long period. Fred Stern, plant manager, said the "super turnaround" would determine the plant's true condition, much like a person going in for a physical examination.

Employees were able to inspect areas not normally accessible, identifying some 2,300 tasks that were completed. However, delays also caused an extra month of outage work, limiting the plant to about less than half of its normal production output for about two weeks after startup.

Combining expenses and lost revenue for that unique shutdown, Dakota Gas took a financial hit of more than $33 million, producing a net loss of more than $35 million in 2004.

But Dakota Gas had a quick rebound the following year, aided in huge measure by a good market price for natural gas. Natural gas prices for the company's gas averaged about 35 percent more in 2005 than the year before, and so overall company revenue ballooned to more than $350 million, nearly 50 percent more than in 2004. As a result, the company recorded a healthy net income of $33.7 million after taxes in 2005. That included Dakota Gas paying DOE $78 million under the original revenue-sharing agreement with the federal government, which now had received more than $240 million from Dakota Gas since 1988.

Tours of the nation's only commercial-scale gasification plant had been constant over the years, but the facility seemed to attract even more attention in the new millennium.

For instance, in a November 2005 story in *Platts Power Magazine*, editor-in-chief Dr. Robert Peltier wrote: "The gasification plant is a national treasure and I think it should be recognized as such. The combination of the gas plant, Antelope Valley Station and the (Freedom) mine right next to each other—there is just no other facility complex like it—it's unmatched in the world."

Visitors came from around the nation and around the world. In 2005, the list of visitors included groups from China, Japan, India, Bangladesh, Norway, Germany, South Africa and Canada. Representatives of state governments, investment firms, banks, energy companies, and engineering firms viewed the gasification process. The Synfuels Plant became a showplace for its owners.

25. Cenovus was formed on Dec. 1, 2009, when Encana Corp. split into two companies: one, an oil company (Cenovus), the other, a natural gas company (Encana). PanCanadian Energy Corp. and Alberta Energy Company, two Canadian oil and gas companies, merged to form Encana in 2002.—Ed.

Basin Electric atop its financial game

For Basin Electric and its members, the successes of the first five years of the new millennium were reflected in significant financial rewards.

"I know of no other G&T that has revenue deferrals of $150 million, to be in the position to reduce rates and to have provided $140 million in bill credits. … There is no doubt, we are in the good times." That statement by Harper headlining Basin Electric's *2003 Annual Report* underscored the Cooperative's achievements.

Harper and Child pointed out that 2003 was the fifth consecutive year that the board of directors approved a bill credit for members. This $50-million bill credit essentially provided two months of free electric power to members and brought the five-year bill credit total to $140 million, according to the joint report by Harper and Child.[26] In addition, a one-mill rate reduction was approved for 2004.

"All this was possible because our power plants set new reliability and performance records, wholesale markets were strong and we had surplus power to sell," according to Harper and Child's report.

The Cooperative truly was atop its financial and operational game.

However, the good news came with a note of caution about the future. As new resources are developed in the next five to 10 years, the opportunities for bill credits and rate reductions likely would decline. "Our wholesale rates will rise to cover new capital projects and startup costs because the next generation of new resources will be expensive," Harper and Child wrote in the *2003 Annual Report.*

Yet, while Basin Electric prospered, many U.S. energy companies were suffering financially or even going bankrupt. The most notable: the bankruptcy of Enron Corporation, which had become the world's largest electricity and natural gas trading company before its collapse in 2001. With the failure, Enron's shareholders and employees lost billions of dollars.

Basin Electric, on the other hand, was succeeding despite facing regulatory and legal challenges similar to its competitors. The reasons were few and relatively simple, according to the Cooperative's leaders. Basin Electric's strength was based on the cooperative business model, combining sound business practices and all-requirements contracts with its members.

"One reason that Basin Electric was not susceptible to circumstances that brought down large energy giants like Enron is our ownership model: 'from mine mouth to meter.' That is a short way of saying that our guiding principles have been, and always will be, consumer owned, consumer controlled and electric service at cost to our members," according to their report.

With its solid financial performance in the early 2000s, the credit ratings for Basin Electric improved, even as others in the industry saw their ratings downgraded. Standard and Poor's Ratings Service upgraded Basin Electric's credit rating from A to A+ in 2002. The ratings service also affirmed the Cooperative's "stable" outlook, citing strong liquidity, satisfactory coverage ratios and a high level of equity. In 2003, another ratings service, Moody's Investors Service, upgraded the Cooperative's rating of A2 to A1 with a similar "stable" outlook.

With continued exceptional financial results in 2004-2005, the board of directors again took prudent actions, approving a total of $30 million in bill credits for those two years, deferring $42 million in revenue and setting an average Class A rate that dropped slightly, reaching 30.31 mills per kWh for 2006.

Basin Electric had now returned more than a quarter of a billion dollars to members through patronage capital distributions, bill credits and power cost adjustments, said Harper and Child in the *2005 Annual Report*.

This was a good time to be a member of Basin Electric.

26. "President & General Manager's Report," *Basin Electric 2003 Annual Report.* Basin Electric Power Cooperative, 2.

Chapter 10

Measured growth to meet energy needs in the Heartland

By the early 2000s, Basin Electric had taken steps to create a future with adequate energy for its member cooperatives and their 1.8 million consumers in America's Heartland. However, the Cooperative's leadership found fresh challenges as the new century began unfolding. Member cooperatives had been growing at a steady, predictable rate of about 70 megawatts annually. But, in 2006, the energy needs for those 120 rural electrics spread across nine states shot up to 200 megawatts per year.

Overall, Basin Electric determined that 1,500 megawatts of electric generating capacity from coal, renewables and natural gas would have to be developed in the next decade to meet the burgeoning demand for electricity.

It was growth that could be seen throughout the region and across all sectors, said Basin Electric CEO and General Manager Ron Harper. "We have seen significant industrial and commercial growth in rural areas as well as residential growth around suburban areas, along with a push to develop ethanol and other renewable resources, which have added to an increasing demand for electricity."[1]

1. Basin Electric Power Cooperative, "Harper says coal is fuel of choice for future power plants," news release, Nov. 1, 2006.

With that surge in growth, construction and planning again had become part of the business dialogue at the Cooperative.

For some Basin Electric veterans, the situation had an all-too familiar feel. They recalled a growth period some 30 years beforehand, when Basin Electric responded with major power plant construction that resulted in a surplus of about 1,000 megawatts and pushed Class A electric rates skyward.

Basin Electric's members experienced significant commercial and industrial growth as well as residential growth from 2000 to 2010. This shows a growing area in Prior Lake, MN, of Minnesota Valley Electric Cooperative outside the Twin Cities in 2006.

"It was an awful time," recalled Wayne Backman, senior vice president of Generation, whose Basin Electric roots go back to 1974.[2] "I mean the (Class A wholesale) rate was topping out at 6 cents, and we just wanted to be competitive." The problem stemmed from several factors, including load forecasts that didn't pan out based on changing economics, Backman said.

However, reflecting decades later, he said it may have been one of the best things that happened to Basin Electric. Generation resources were brought into the portfolio cheaper than they would have been if built years later, Backman explained. With that excess power, Basin Electric worked out some good power agreements that helped financially as well.

And perhaps the most satisfying part, Backman said, was a great demonstration of cooperative cohesion. "The members stuck with us," he said.

Claire Olson

Claire Olson, Basin Electric's general counsel and an employee since 1975, agreed. "The membership support was crucial because there were other cooperatives that crashed at that time because … they got in over their heads; they had high rates and their membership fell by the wayside," he said.[3]

Still, that painful memory of overbuilding generation had lingering effects. Those recollections led leadership and employees at Basin Electric to move cautiously so as to not repeat history.

Basin Electric's answer for meeting member growth now was more measured and more complex. Diversify the energy portfolio with renewable power and recovered generation and investigate other innovative resources for power. Build in increments, take a very careful approach to growth and involve members more in planning.

2. Wayne Backman, interview with the author, May 26, 2010.
3. Claire Olson, interview with the author, May 20, 2010.

Also prompting this incremental approach was America's energy policy—or, more precisely—the lack of it. The increasing environmental and public pressures to limit or even eliminate coal as a generation resource caused utilities like Basin Electric to develop new approaches. Carbon sequestration, waste-heat recovery, natural gas and coal gasification as well as wind became part of the Cooperative's focus for future energy.

Basin Electric receives baseload generation from eight recovered energy generation units along the Northern Border Pipeline that use hot exhaust gas from compressor stations to produce electricity. This one is located near St. Anthony, ND.

"We don't build 600 to 700 megawatts of baseload units any more, unfortunately," said Harper, in a later interview.[4] "But you build, in this case, a wind farm of 100 megawatts and then you build a 100-megawatt gas 'peaker' to serve as a firm facility."

Several startup projects at this time added such facilities to Basin Electric's energy portfolio: a 95-megawatt natural gas turbine peaking station at Groton, SD; a 49.5-megawatt wind energy project at Wilton, ND; and

4. Ron Harper, interview with the author, June 28, 2010.

the first four of eight planned heat recovery generating stations located along the Northern Border Pipeline of 5.5 megawatts each. The wind and heat recovery facilities were owned by other businesses with Basin Electric buying their output.

Ron Harper gives his general manager's report at the 2006 annual meeting. The meeting theme was "Creating our Energy Future" and finding clean coal solutions was a major topic of discussion.

But it was clear that coal remained a significant part of planning for the future. "Coal will be part of the future for a long time," Harper and Child wrote in 2006 in *Basin Today.* "We want to be in the forefront by finding solutions that use coal more cleanly and efficiently."

Despite increased regulations on using coal and other fossil fuels, Harper said at Basin Electric's 2006 annual meeting, coal continued to be the best resource for meeting growing member needs. "It is difficult for us to sit on the sidelines and wait for the transition time to new technology, when our members need the power now," Harper said.[5]

Moving ahead with new coal generation

Basin Electric would continue to include baseload generation projects fueled by coal, and the principal coal project was sited in Wyoming.

In November 2007, about 300 people gathered near Gillette for the groundbreaking for a 385-megawatt station, the first coal-based power plant for Basin Electric in more than 25 years. To make this an environmentally sound power plant, about $335 million would go toward state-of-the-art environmental equipment, including a reflux circulating fluidized bed dry scrubber that allows quick response to changes in sulfur content of the coal.

Wyoming Gov. Dave Freudenthal told the groundbreaking crowd that building additional generation in Wyoming had been long awaited.[6] The governor commended Basin Electric for moving ahead with a coal power plant against the backdrop of a changing regulatory environment and a focus on carbon management. As standards for carbon management take shape, Freudenthal said, "You still have to retain the capacity to fuel and build this economy … and that is dependent on companies like Basin having the courage to step up and follow through on the plan and to make sure that the electric demand is going to be met."

Wyoming Municipal Power Agency of Lusk joined Basin Electric as a partner, becoming a 7.1-percent owner of the station.

Construction had been under way at the 340-acre site for about two weeks prior to groundbreaking. Before the projected completion in 2011, workers would need to excavate 1.3 million cubic yards of soil, pour 62,000 cubic yards of concrete for foundations and set 12,000 tons of structural steel.

It was a big project, carrying a price tag of $1.35 billion.

And despite the industry's wariness over unresolved environmental issues, Dry Fork appears to have been a forerunner to a number of coal-based electric plants subsequently started around the country. According to the Associated Press, more than 30 such "traditional" coal plants began construction the year after earth moving began on Basin Electric's project in Wyoming in 2007.[7] Yet, the total of plants being constructed had dropped considerably than what had been forecast by the federal government.

5. Basin Electric news release, "Harper says …" Nov. 1, 2006.

6. Erin Huntimer, "Basin Electric breaks ground for the Dry Fork Station," *Basin Today* January-February 2008, 3.
7. "Old-style coal plants expanding around the U.S.," *The Bismarck Tribune,* Aug. 18, 2010, 4B.

Basin Electric directors were among those that toss the ceremonial first shovels of soil at the Dry Fork Station groundbreaking Nov. 2, 2007. From left: Reuben Ritthaler, Dean McCabe, Don Applegate, Wyoming Gov. Dave Freudenthal, Wayne Child, Eugene Appledorn, Cliff Gjellstad, Roberta Rohrer and Ron Harper, Basin Electric CEO and general manager.

Basin Electric had more prospective coal projects.

Its three existing electric generating plants—the Leland Olds, Antelope Valley and Laramie River stations—had been operating at high levels. In 2005, they combined for record electric generation of more than 24.3 million net megawatt-hours.

However, the Leland Olds Station in North Dakota now had to undergo changes so it could remain part of Basin Electric's generation. Leland Olds Station, Basin Electric's first power plant, had always been in environmental compliance. However, new and more stringent requirements would require additional emissions-control equipment by about 2013.

The analysis included possibly closing this flagship power plant, but, in the end, directors approved a plan to move forward with the environmental equipment project that was estimated at the time to cost $300 million. "The best news is for the air," said Dave Glatt, chief of environmental health for the North Dakota Health Department, "but also for the long-term viability of the plant. It also opens up the potential for more development."[8] And a local mayor, Lonny Adler of Hazen, told *The Tribune* that the project would help the economy and bring people to the area. "It's a good deal to keep it (the plant) here," he said.

8. "Coal Country gets big boost by Basin," *The Bismarck Tribune,* Feb. 15, 2006.

Plans progressed on other coal-based generation, too.

Basin Electric had joined with three other utilities in evaluating the idea of a new coal-based power plant near an existing power plant operated by Minnkota Power Cooperative of Grand Forks, ND. Located near Center, ND, the Milton R. Young Station had two units, so the project became known as Milton R. Young 3. Basin Electric expressed interest in 100 megawatts of the new plant's potential capacity of 500 megawatts.

This shared approach to a new facility located on a site with existing generation offered multiple advantages, including a lower cost.

Another proposal to help meet power needs for Basin Electric's eastern territory involved what was considered the next generation of power plant technologies. One system being considered for this "NextGen Station" was the super-critical pulverized coal process. Similar to other coal-based plants, the process took advantage of metallurgical advances so the plant's steam cycle could operate at higher temperatures and pressures, making it more efficient.

Carbon-capture technology was to be part of NextGen as well, plus a proposal to make it an Integrated Gasification Combined Cycle (IGCC) power plant, using the expertise of GE Energy and Bechtel Corporation.

This is a site simulation of the 300-net-megawatt Deer Creek Station under construction near Elkton, SD, in Brookings County. Construction began on the combined-cycle station on July 27, 2010. The plant features two turbine-generator sets: one fired by natural gas; the other is driven by steam. Both of the turbines are connected to generators. The station is expected to be completed in 2012.

The IGCC concept involved combining coal, oxygen and steam at high pressure to produce synthetic gas, which is then burned in a combustion turbine to make electricity. Hot exhaust gases from the combustion turbine are used to produce steam, which then drives another turbine-generator.

Several sites in South Dakota and North Dakota were considered for NextGen, including adding a third unit at Leland Olds Station, but eventually a site near Selby, SD, was picked for a plant of about 700 megawatts and costing more than $2 billion.

Because of the technology, NextGen would cost more than a conventional power plant, but Basin Electric determined the environmental advantages could offset the higher cost. And to help offset the added expense, Basin Electric applied for investment tax credits through the Energy Policy Act of 2005.

However, the application was not successful, and with pressure to meet members' power needs in the next 10 years, Basin Electric chose to forgo the IGCC technology at the time.

Eventually plans to have this new generation power plant online by 2014 had to be abandoned, with no new time line planned. In early 2009, Basin Electric posted a statement on its website, saying uncertainty over the plant's economic feasibility, regulatory issues on carbon emissions and the lack of available carbon-capture technologies meant the project had to be "reassessed," according to *The Bismarck Tribune* story.[9]

Meanwhile, the Cooperative filed plans for a new, 300-megawatt power plant in South Dakota that would use natural gas and steam rather than coal to make electricity. Its price tag of $405 million was considerably less than that for NextGen; the approval process also would be much shorter. "Generally, you don't have quite as many issues that crop up—concerned citizen issues and environment issues—with a natural gas power plant as you do with a coal power plant," said South Dakota Public Utilities Commission Chairman Dusty Johnson, in the *Tribune* story.

Eventually, this project was sited near Elkton, SD, as a gas-fired, combined-cycle power plant called the Deer Creek Station. Construction was started in 2010 with the facility expected to produce power in 2012.

9 "Basin re-evaluating coal plant," *The Bismarck Tribune,* Aug. 12, 2009, 5B.

Challenges for coal in Wyoming

Meanwhile, the coal business in Wyoming grew more difficult for Basin Electric, its members and business partners.

In a dispute labeled "The Great Plains Robbery," Basin Electric had joined with the Western Fuels Association in 2004 to formally complain about huge rate increases for shipping coal initiated by the Burlington Northern Santa Fe Railway (BNSF). Operated by Basin Electric, the Laramie River Station near Wheatland, WY, depended on BNSF to transport its fuel. However, the power plant was considered a "captive" customer because it had no competitive alternative to BNSF's service.

Ron Harper (center) listens as Glenn English, National Rural Electric Cooperative Association CEO, testifies on rail competition before a U.S. House Committee. Basin Electric has taken a lead in the issue since 2004. (Photo by Stephen E. Barrett)

The complaint filed with the U.S. Surface Transportation Board (STB) contended "BNSF unlawfully exerted its monopoly power over Laramie River Station coal deliveries by imposing unreasonably high common carrier rates."

Despite a five-foot stack of paperwork filings by Basin Electric and Western Fuels, the STB in September 2007 ruled in favor of BNSF, saying "the shipper had not shown that the challenged rates are unreasonable" under the STB's rate test.[10]

10. "Push for Rail Reform Intensifies," *Basin Today,* Basin Electric Power Cooperative. Annual Meeting Issue 2007, 6.

Harper, Basin Electric's CEO and general manager, said the ruling demonstrated the need to fix the system under the STB and its process, calling on Congress to make it a top priority. Testifying before a U.S. House committee hearing, Harper said Congress needed to ensure that regulators are not controlled by the industry they were set up to regulate. Despite STB's claims that it is an effective regulator, he told the committee, "The STB's actions don't match its words. Railroads win. Customers lose."

Shortly, that bad news turned into good.

In February 2009, the STB ruled in favor of Basin Electric and Western Fuels, saying BNSF's rates were unlawful and unreasonable in connection with railing coal to the Laramie River Station. STB ordered the railroad's rates to be reduced by about 60 percent, with reparations and rate reductions amounting to about $345 million. The federal agency termed its action as "the single largest reduction in rail rates" ever ordered by the STB.[11]

STB's reversal came after Basin Electric and its members had drummed up considerable political support. The STB received a letter supporting the complaint against BNSF that was signed by 20 members of Congressional delegations across the region. Heading that effort were U.S. Sens. Byron Dorgan of North Dakota and Mike Enzi of Wyoming and U.S. Reps. Earl Pomeroy of North Dakota and Barbara Cubin of Wyoming.

BNSF appealed the decision, but that proved largely unsuccessful. Claire Olson, Basin Electric's general counsel, said an appeals court ruling in 2010 had rejected all issues raised by BNSF, save for a highly technical matter that the STB would have to take up. "We're about 90 percent there," Olson said, of a final victory in the case.

11. "Good News for Captive Rail Customers," *Basin Today,* Basin Electric Power Cooperative, March-April 2009, 8.

continued on page 159

Dry Fork Station: *A step to the apex of coal-fired technology or the end of an era?*

A photo of Dry Fork Station taken Aug. 9, 2011, two days before its dedication ceremony.

What is coal's future as part of the nation's energy supply? Will major coal power plants be built in the future?

With completion of the coal-fired Dry Fork Station in 2011, some say an era could be ending for the Cooperative and other utilities across the nation. Others say coal will continue to be a large part of the energy mix for many years to come and technology will provide the solutions to keep it in the mix.

Owned by Basin Electric and the Wyoming Municipal Power Agency, the Wyoming power plant has a capacity of 385 megawatts, which is enough electricity for about 308,000 residential homes.

As the project sponsor, Basin Electric spearheaded construction that began with groundbreaking in 2007, which was overseen by a team headed by Clyde Bush, the Cooperative's vice president for coal-based resource development. A 30-year veteran at Basin Electric, Bush served in various capacities, from power plant manager to heading up the procurement division to managing generation support services.

The significance of building the Dry Fork Station in the current environmental context has not been lost on Bush, a utility professional with considerable management and power plant experience. "Personally I have been honored to have the opportunity to lead this project and maybe in particular because we are reaching for new heights in technology, at least in terms of coal-fired generation as we've known it," he said. "I appreciate the confidence others have shown in letting me do this."[1]

Bush said he thinks the project team senses the fact that this represents a "legacy" opportunity. "So I think there is a degree of added enthusiasm

1. Clyde Bush, interview with the author, July 23, 2010.

Clyde Bush

Top: Aerial view of the structural steel in place at Dry Fork Station on March 2009. Left: The first of 45 fan placements in September 2008 in the air-cooled condenser, where steam is condensed into water and recycled to the boiler. Right: Lift of the 240-ton steam drum into place on March 22, 2009. The steam drum, the heart of the boiler, is the first place where steam is collected before heading to the turbine and generator to make electricity.

to do this very well," he said, in his typical down-to-earth and modest manner. "And also there is probably a level of humility involved in that, since we want it to be done in a manner that shows the long-standing tradition that Basin Electric has had in this arena."

Basin Electric chose to install the world's largest circulating fluid bed dry scrubber to reduce sulfur dioxide from Dry Forks' emissions. Bush said because this technology has the ability to respond quickly with the varying sulfur content of the coal, he calls it the "Porsche of scrubbers." That will help the power plant to meet or exceed the "extremely tight standards" on sulfur dioxide emissions set by the state of Wyoming, he said.

The operating and capital costs for the circulating fluid bed dry scrubber are more than conventional dry scrubbing technology, and Bush pointed out that approach is consistent with Basin Electric's legacy of taking the extra step in environmental controls. Of its total cost, the plant features an investment of about $335 million in environmental equipment.

During 2009, a peak construction work force of about 1,300 from more than 30 states was on site building the plant. For housing the construction crews, Basin Electric contracted with housing providers in Gillette and surrounding communities to provide recreational vehicle spaces, hotel rooms and apartments.

Bush spoke with pride in giving the last construction update for Dry Fork Station at the Cooperative's annual meeting in November 2010. The accomplishments by project staff and construction crews in the areas of schedule and budget "and perhaps most importantly, all has been done with the utmost regard to safety," he said.

At the time, construction crews had amassed more than 5.7 million work-hours without a lost-time incident, while the industry average for similar major construction would be about 39 lost-time incidents, he said. "Every man and woman on the job gets credit for that record."

With the plant's completion, Basin Electric will operate the energy facility with a staff of about 83.

Meanwhile, a similar scenario played out over three years for the new coal plant being built in Wyoming.

Shortly after construction began in 2007, three environmental groups—the Wyoming Outdoor Council, Powder River Basin Council and Sierra Club—sought to halt construction of the Dry Fork Station. The groups challenged the issuance of an air quality permit for the project by the Wyoming Department of Environmental Quality.

In April 2008, members of the Wyoming Environmental Quality Council unanimously denied the motion, allowing construction to continue.

The ruling set the stage for a hearing in September 2008 before the state's Environmental Quality Council. At that hearing, the state council again denied several requests by the environmental groups seeking to stop construction of the power plant. Among the issues raised included whether Wyoming should regulate carbon dioxide emissions and whether other technologies should have been considered in determining best available control technology for the plant. The environmental groups contended that carbon dioxide is a pollutant and should be regulated by the state of Wyoming.

Deborah Levchak

However, carbon dioxide had not been recognized as a pollutant by federal agencies and thus was not regulated.

"The (environmental groups) … were basically arguing policy issues, not errors of law," said Deborah Levchak, Basin Electric staff counsel. "Changes in policy will have far-reaching effects and should be determined in a legislative process, not debated in individual permit appeals."[12]

An attorney for the Wyoming Department of Environmental Quality, Nancy Vehr, said the air permit issued for the project was very stringent, complying with Wyoming law, employing best available control technology and fulfilling the policy and purpose of Wyoming's Environmental Quality Act.

However, the environmental groups appealed the ruling, which ended up before the Wyoming Supreme Court. In their appeal, the groups argued that the power plant was being built with obsolete technology and that Wyoming should regulate carbon dioxide "because of its contribution to climate change and air pollution," according to a story in *The Gillette News-Record.*[13]

The state of Wyoming defended its permitting process, saying the plant was thoroughly reviewed and found to meet all state regulations. Basin Electric contended that Dry Fork would be one of the cleanest power plants in the nation "because of a cutting-edge air quality control system," the *News-Record* reported.

In March 2010, the Wyoming Supreme Court issued its decision, effectively saying "the Dry Fork power plant north of Gillette can start operating when it is finished in 2011."[14] In its ruling, the court upheld the decision by the state's Department of Environmental Quality that Dry Fork met air quality requirements.

That meant carbon dioxide would not become an issue for the air permit for this power plant.

But, on a national basis, carbon dioxide continued to be an issue, whether in print, on the airwaves or in the halls of Congress. The debate wasn't whether it helped sustain life on earth; it centered on whether carbon dioxide was a major contributor to global warming. The back-and-forth dialogue along with the lack of an energy policy direction troubled utilities using coal to produce more than half the electricity for America.

A balanced approach to energy

Basin Electric had long been promoting a balanced approach in developing a national energy plan. Coal must be part of the energy mix, but the industry has to

12. "Wyoming EQC denies efforts to halt construction at Dry Fork Station," *Basin Today,* Basin Electric Power Cooperative, November-December 2008, 13.

13. "Dry Fork air permit faces high court challenge," *The Gillette News-Record,* Aug. 13, 2009.

14. "High Court gives OK for Dry Fork to fire up," *The Gillette News-Record,* March 9, 2010.

learn how to burn it more efficiently, said Harper, in 2006. "We must have coal, renewable energy sources, nuclear, natural gas, biomass, hydrogen and other, types of cleaner burning fuels made from our own natural resources. Conservation must also play a major role in reducing our dependency on foreign sources of energy." [15]

Along with that approach, Harper said the country must allow development of a proper energy infrastructure.

Under President George W. Bush, the White House indicated global climate change had to be addressed. Several bills regulating greenhouse gas emissions came before Congress.

After much debate, the U.S. House of Representatives in June 2009 passed a climate change bill, known as the American Clean Energy and Security Act. It included a cap-and-trade system to reduce emissions and a provision requiring the country to get part of its energy from renewable energy sources as well as through energy efficiency. The Senate also began hearings on its own version of a climate change bill.

With legislation being formulated, Basin Electric chose to be more proactive, joining in two programs seeking an acceptable final energy solution.

One was a national campaign by the National Rural Electric Cooperative Association. Called "Our Energy, Our Future," the program was aimed at helping consumers talk to public officials about climate change. Specifically, rural electrics developed three points to make to Congressional members and others regarding climate change legislation:

- Legislation should be national, not allowing states or the Environmental Protection Agency (EPA) to impose carbon controls.
- Emission allowances should be based solely on carbon emissions so consumers affected by the cost increases are protected.

15. Ron Harper, "A growing country must allow for resource development," *Basin Today* Basin Electric Power Cooperative, September-October 2006, 1.

As a supplement to NRECA's "Our Energy, Our Future" program, Basin Electric developed a communications campaign titled "Find a Balanced Solution" to promote legislation that would provide both a healthy economy and a clean environment—a solution that would use a mix of all energy sources like renewable and cleaner traditional energy.

- Costs to consumers should be guaranteed not to increase more than a postage stamp a day, based on the cost from the Congressional Budget Office.

Mike Eggl

In its other energy initiative, Basin Electric became part of a united stance with other generation and transmission (G&T) cooperatives across the country. "Basin Electric supports reasonable climate change legislation," said Mike Eggl, senior vice president of External Relations and Communications.[16] "But we want legislation that will benefit our environment without hurting an economically strained country," Eggl said.

The idea was to marry the legislative and communications strategies in a more aggressive approach. The result: a communications campaign titled

16. Mary Klecker-Green, "Striking a position," *Basin Today,* Basin Electric Power Cooperative, September-October 2009, 6-7.

"Find a Balanced Solution," from which legislation could be developed. During the campaign's inception, statewide rural electric organizations and G&Ts in 13 states joined.

At Basin Electric, Eggl pulled together a climate change working group, consisting of Class A members and statewide rural electric organizations. As a result,the group produced a legislative position paper that, among other things, called for the following:

- A special fund to finance development of carbon capture technology;
- Setting a national greenhouse cap at 2005 levels with emission reductions delayed five years to allow for implementation rules to be developed; then spelling out cap reductions, with a 75 percent emissions reduction from 2005 by 2050; and
- Placing a cap on carbon dioxide emissions to be traded aimed at minimizing runaway pricing.

It also dealt with offset credits, bonus allowances and early action credits as well as requiring America's trading partners to reduce their carbon dioxide emissions by adopting their own cap-and-trade system or purchasing carbon credits to sell their products in the country.

In October 2009, the EPA announced it would use the Clean Air Act to regulate carbon emissions, starting with power plants, factories and refineries deemed responsible for 70 percent of U.S. greenhouse gas emissions.

Industry groups challenged the move, saying the EPA was skirting the law by targeting industrial facilities. "Normally it takes an act of Congress to change the words of a statute enacted by Congress," said Jeff Holmstead, a former EPA official who became an energy industry lobbyist.[17]

17. "EPA moves to curb greenhouse gas emissions," The Associated Press, MSNBC.com, Oct. 1, 2009. http://www.msnbc.msn.com/id/33117003/ns/us_news-environment?wid=18298287/from/

Some saw the move by EPA "as a way to prod lawmakers to pass a bill to regulate carbon gases or face the threat of a federal agency doing it instead," according to a *Bismarck Tribune* story.[18]

Others also suggested EPA's action could delay progress. Claire Olson, Basin Electric's senior vice president and general counsel, told the *Tribune* that the EPA ruling could slow down the review process for new facilities or major modifications of older plants that produce more than a certain amount of carbon dioxide, thus requiring utilities to adopt emissions controls using the best available control technology.

Eggl said Basin Electric preferred a reasonable legislative solution rather than regulation by the EPA. "It is our hope that a well-balanced, well-considered climate change bill comes out of this process—one that will benefit our environment without hurting our rural electric consumers," he said.

In the forefront on carbon capture

Basin Electric had already been ahead of the curve in the growing attention on capturing carbon dioxide in the energy production process.

A subsidiary, Dakota Gasification Company, had been capturing carbon dioxide in the process of making natural gas from coal at the Great Plains Synfuels Plant since 2000 and piping it to Canada for enhanced oil recovery. By 2007, that project had been capturing 3 million tons per year, making it the largest carbon capture and storage project in the world, according to U.S. Department of Energy (DOE).[19]

Developing carbon-capture technology for existing coal plants that produce electricity became a focus for the electric industry and for Basin Electric.

The Electric Power Research Institute released a study in early 2007 that listed technologies and strategies to significantly reduce carbon dioxide emissions

18. "EPA targets coal industry," *The Bismarck Tribune,* Dec. 20, 2009.

19. National Energy Technology Laboratory, U.S. Dept. of Energy, "Synfuels Plant Supplies CO_2 for the World's Largest Carbon-capture Project," news release, Feb. 3, 2009, 1.

from the U.S. electric power sector in the next 25-30 years. Deploying carbon dioxide capture and storage technologies at most new coal-based generating plants by 2020 was included on that list.

For Basin Electric and other coal-based utilities, it was a tough issue. Carbon capture technology was still untested and unproven. And with more than 80 percent of its generating capacity coming from three existing baseload power plants, Basin Electric had to focus on developing technology that would allow retrofitting existing coal plants.

"The costs appear very high, which would translate to huge costs to our end-use customers," said Backman, Basin Electric's senior vice president of Generation. "We've always strived to produce low-cost, reliable power (for) our members. We recognize we also have a responsibility to the environment. There's a balance there, and we're working to achieve it."[20]

In addition, Basin Electric was aware that lignite—the coal used at two of its baseload plants—produced more carbon dioxide than other coal types.

It was a "carbon conundrum," as the Cooperative characterized the issue.

Harper, Basin Electric's CEO and general manager, agreed action was needed. "We are committed to responding to the world's need to reduce carbon emissions. It won't be without its challenges, but it's the right thing to do," he said, in that issue of *Basin Today.*

In fact, the Cooperative had already been active in this arena, joining the Plains Carbon Dioxide Reduction Partnership, a DOE regional carbon sequestration partnership focused on better understanding the technical and economic feasibility of sequestering carbon dioxide. Part of that assessment was how to store captured carbon dioxide, such as for enhanced oil recovery, in a deep reservoir or formation, or in a coal seam that can't be mined for economic reasons.

20. Mary Klecker-Green, "The Carbon Conundrum," *Basin Today,* Basin Electric Power Cooperative, March-April 2007, 8.

Basin Electric also had begun discussions with companies that could develop the right technology for its plants. "Most technologies are still being developed in the laboratory," said Bob Eriksen, Basin Electric's environmental compliance administrator. "We'd like to move things along to a large-scale demonstration, and we think the Antelope Valley Station is a good place to start."

At about this time, the Cooperative formally requested proposals on carbon-capture technology, beginning a process that could make Antelope Valley Station the first power plant in the Midwest to employ the technology.

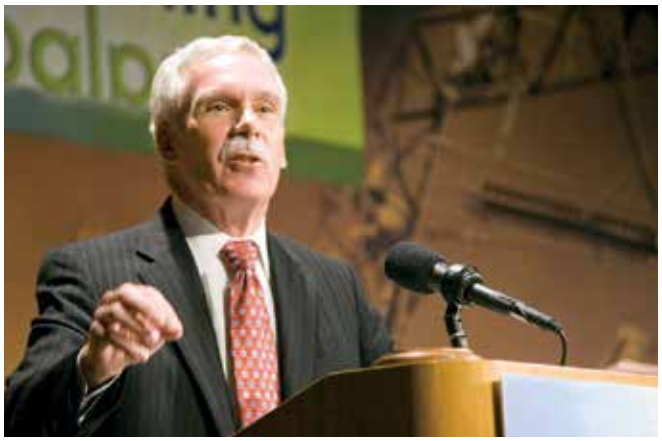
The idea was to move the captured carbon dioxide to the nearby Synfuels Plant where it would be injected into that plant's existing carbon dioxide pipeline and shipped out for enhanced oil recovery.

In August 2007, Harper told a Senate Energy Appropriations subcommittee hearing in Bismarck, ND, that Basin Electric expected to spend $150 million on the equipment to pull carbon dioxide from the power plant's waste stream that normally would be released up the flue stack.[21]

Harper and Basin Electric had gained attention from its connection with the Synfuels Plant's carbon-capture project and the Cooperative's interest in research. As a result, Harper was invited to an international workshop in Oslo, Norway, on carbon capture and storage for the Group of Eight, or G-8, countries.

Reflecting on the trip, Harper said Basin Electric has demonstrated its commitment to reducing its carbon emissions through diversifying its energy portfolio. "But we need to be looking at this carbon-capture project at Antelope Valley Station as a sign that we are very interested in being part of the solution and not part of the problem." [22]

21. "Basin could first be to capture carbon," *The Bismarck Tribune,* Aug. 14, 2007.
22. Tracie Bettenhausen, "G-8 Forum Advances Carbon Conversation," *Basin Today*, July-August 2007, 5.



Three cabinet members visited the Basin Electric family within a year. Above: U.S. Secretary of Agriculture and former North Dakota Gov. Ed Schafer opened the Basin Electric annual meeting in November 2008. Below: U.S. Secretary of Energy Dr. Steven Chu came to Bismarck on July 1, 2009, to announce that Basin Electric was chosen to negotiate a $100-million cooperative agreement under the Clean Coal Power Initiative Program to help fund a large-scale carbon capture demonstration. U.S. Secretary of Interior Ken Salazar visited on April 25, 2009 (see page 172).

That commitment soon became even more evident.

Basin Electric initially selected the technology of Powerspan Corp. of New Hampshire from among six companies for a commercial demonstration carbon capture project at Antelope Valley Station in March 2008. The project was supposed to capture 1 million tons of carbon dioxide annually, making it among the largest demonstration projects in the world. The captured carbon dioxide would be added to the compression and pipeline system operated by Dakota Gas.

Harper said this commercial demonstration project represented an important first step in "developing and proving a technology that can be retrofitted to the hundreds of existing power plants in the U.S." [23]

At a cost of up to $300 million, Harper said it was imperative for the federal government to provide support.

The North Dakota Industrial Commission responded to the idea, agreeing in December 2008 to invest $2.7 million to complete a front-end engineering and design study for the project. Those monies would come from a lignite research program funded through a severance tax on coal produced in North Dakota.

Then the U.S. Department of Agriculture joined in the funding for the Antelope Valley Station project. USDA Secretary Ed Schafer, a former North Dakota governor, announced in January 2009 that Basin Electric would get a $300-million loan for the carbon-capture project.

"Our demonstration project has the potential to not only create a viable path for coal in our nation's energy future, but it could position the United States as a model for other countries to emulate," Harper. said. "The conundrum for us lies in paying for technology and research necessary to do this work, while keeping electricity affordable for our member-owners. That is why the assistance and commitment from USDA is critically important for us and our member consumers."[24]

DOE supplied the next financial piece. DOE Secretary Dr. Steven Chu traveled to Bismarck to announce that Basin Electric would receive a $100-million cooperative agreement to help fund the demonstration project. The funding came from the DOE's Clean Coal Power Initiative program.

"These new technologies will not only help fight climate change, they will also create new jobs and position the United States as a leader in carbon capture and storage technologies for many years," Chu said, in a *Basin Today* story. He also said America needed a "new

23. "Basin Electric selects Powerspan for carbon capture demonstration project," *Basin Update,* Basin Electric Power Cooperative, March 19, 2008, 1.
24. "USDA approves first ever loan for CO_2 capture project," *Basin Update,* Basin Electric Power Cooperative, Jan. 21, 2009, 1.

An additional 169.5 megawatts of wind resources were energized in North Dakota in 2009, of which 120 megawatts were from the first large-scale wind project built and owned by a Basin Electric subsidiary. The contractor for PrairieWinds ND 1, RMT, prepares a turbine blade for connection to the hub. The three-bladed rotor is lifted by crane to the top of the tower for connection to the shaft.

industrial revolution" to mitigate climate change and to decrease U.S. dependence on foreign oil.[25]

Harper credited North Dakota's U.S. Sens. Byron Dorgan and Kent Conrad, U.S. Rep. Earl Pomeroy and North Dakota Gov. John Hoeven for helping to promote the project. In his comments, Conrad called the DOE grant a "smart investment, one that will reduce our nation's dependence on foreign oil."

Making history with wind and excelling in renewable energy

Based on a 2005 membership resolution, Basin Electric had launched an aggressive, multi-pronged effort to diversify its energy base and add more renewable energy in the ensuing years.

With more than 90 percent of its generation coal-based, Basin Electric responded by building more natural gas peaking power and a small amount of recovered energy generation. However, the biggest injection of renewable power came with scores of new wind turbines.

At the end of 2005, Basin Electric had just 5.2 megawatts in wind generation. In January 2006, another 49.5 megawatts of wind power was added as 33 turbines near Wilton, ND, became operational. Owned and operated by FPL Energy of Juneau Beach, FL, (now NextEra Energy Resources), the wind farm's output would be purchased by Basin Electric.

Basin Electric was just beginning to plant its renewable energy crop.

Cooperative directors gave their blessing in February 2008 to create two wind energy subsidiaries, PrairieWinds ND 1 Inc. and PrairieWinds SD 1 Inc.

After completion of an environmental assessment, construction began in August 2009 on the PrairieWinds ND 1 project, featuring 77 turbines south of Minot, ND, that would generate about 116 megawatts.

And in the waning hours at the end of 2009, those 80-meter-tall turbines began turning and churning out electricity.

"This project represents a significant contribution to Basin Electric's and North Dakota's energy picture," said Backman, Basin Electric senior vice president

25. "Energy Secretary announces funding for clean coal project," *Basin Today,* Basin Electric Power Cooperative, July-August 2009, 4.

of Generation.[26] With this wind project and other developments, Basin Electric would be on track to have installed capacity of 12.3 percent in renewable generation by the end of 2010. Credit went to many in promoting the project, but especially Verendrye Electric Cooperative, a member located in Velva, ND, and its general manager, Bruce Carlson.

"This is a dream come true for me and for Verendrye Electric," said Carlson, in the Basin *Update* story. He recalled how the project began in the late 1970s and early 1980s in partnership with DOE on a wind-data collection site. "We knew we had good data then, and it took Basin Electric and great support from Verendrye (members and landowners) to finally pull this together, and I'm extremely proud."

In South Dakota, the PrairieWinds SD 1 project was to be even larger, adding 101 turbines and generation of nearly 152 megawatts. The project required an Environmental Impact Statement, a process of up to two years that got under way in 2009. Several sites in central South Dakota were considered with construction starting on Oct. 5, 2010.

Basin Electric and NextEra announced they would double the size of the Wilton Wind Energy Center. By October 2009, the 33 turbines became operational, adding another 50 megawatts that would be purchased by the Cooperative.

In April 2010, wind energy was in the news at almost the same time in North Dakota and South Dakota.

Basin Electric and NextEra signed an agreement for a large wind project north of Bismarck. Like its other five joint projects, NextEra would own and operate the 68-turbine, 100-megawatt project with Basin Electric buying the output.

In South Dakota near Groton, 66 turbines producing 99 megawatts became operational. Called the Day County Wind Energy Center, this was NextEra's third wind project in the state, with crews from East River Electric Power Cooperative, a Basin Electric Class A member, building transmission to energize the project.

The Western Area Power Administration signed a contract to purchase the project's power for three years, after which Basin Electric would buy the electricity.

As a federal power-marketing agency, Western was organized to sell power from the federal dams in the Missouri River Basin. However, with a prolonged drought in the Basin, the lower water levels meant Western had to find replacement power, such as the Day County project.

By adding wind turbines to its energy mix, Basin Electric began to emerge as a leader in the nation in renewable energy. Based on the DOE's National Renewal Energy Laboratory ranking of leading utility green power programs, Basin Electric ranked in the top 10 for wind energy sales in 2005-07.

A wind-to-hydrogen experiment

The Cooperative looked at other innovative energy options, including the nation's first wind-to-hydrogen project.

The wind doesn't always blow when needed, and no practical methods existed to store wind power. So Basin Electric embarked in 2006 on a pilot research project to use power from its wind farm near Minot, ND, to produce hydrogen gas that could be stored and used as required.

The idea was to study the economic and environmental issues in storing and distributing the hydrogen.

Built in 2007, the small plant was located on the grounds of the Minot research station. It consisted of a hydrogen electrolyzer from Belgium, a storage tank that holds compressed hydrogen gas and a gas pump for filling vehicles, according to *Next Energy News.*[27] The power ran at low voltage through an electrolyzer, which used electric current to break water

26. "Minot wind project in full operation," *Basin Update* Basin Electric Power Cooperative, Jan. 7, 2010, 1.

27. "Wind-to-hydrogen plant first in nation," *Next Energy News,* July 18, 2007, http://www.nextenergynews.com/news1/nextnews7.18a.html

Aerial view of the PrairieWinds ND 1 project, near Minot, ND, in June 2010.

Through a federal grant and partnering with other cooperatives and researchers at two North Dakota universities, Basin Electric initiated a $2-million project to create hydrogen from the electricity produced by wind turbines.

molecules apart into hydrogen and oxygen. The hydrogen was stored under pressure and used to operate vehicles configured to burn the gas in their engines. The advantage of hydrogen as a fuel is that it produces only water when burned, offering a nearly non-polluting way to power vehicles.

Uses were limited but expected to grow. Existing hydrogen-powered vehicles could be refueled, but Sen. Byron Dorgan also sought a private-federal initiative to develop hydrogen vehicles as part of the nation's transportation sector. Other potential uses could be power for remote applications or for supplying power back into the electric grid when there was no wind.

Basin Electric also pointed out that this innovative fuel resource could help the country become more energy independent while producing virtually no emissions.

In 2008, the system produced nearly 26 million liters of hydrogen. However, the system experienced "chronic shutdown issues" that prevented consistent operation and didn't allow for a good economic analysis, according to a final report to DOE in 2009. The project was shut down, but, the report added, "much valuable experience was gained in the form of lessons learned, and the project served as an extremely valuable platform for educating the public."

Transmission: Complications but a white paper for the future

In the period of 2005-09, utilities continued to face the long-standing issue of how to deliver the power across the country. Getting electricity to move from here to there was being held up based on reasons not related to just the flow of electrons along a wire. The lack of a national transmission grid remained a bottleneck in sending renewable or any new energy produced from rural areas that have the resources to urban regions where the power is needed.

Mike Risan

Based on the 1992 Energy Policy Act, the nation's transmission system was to be opened to wholesale competition, aimed at driving down costs to consumers by making additional generation sources available. However, implementation of the open-access legislation by the Federal Energy Regulatory Commission (FERC) in the ensuing years led to "a patchwork of bureaucratic processes" and "inefficient expansion" of the U.S. transmission grid, said Mike Risan, Basin Electric senior vice president of Transmission, in assessing the situation in 2007.[28]

To eliminate a potential advantage for existing utilities, FERC required the separation of utilities' transmission and generation marketing functions. Further rules required utilities under FERC jurisdiction to join regional transmission organizations or RTOs. Independent System Operators (ISOs), created before RTOs, were to ensure equal treatment for those in the industry using the transmission grid.

Basin Electric elected to become a non-transmission-owning member of the Midwest ISO, the largest independent transmission operator in the nation that extended into 14 states at the time.

28. Kathi Risch, "U.S. transmission system 2007: Complex, constrained and slowly evolving," *Basin Today,* Basin Electric Power Cooperative, July-August 2007, 6-7.

Though lowering costs for consumers seemed an admirable national goal under the 1992 act, assembling the details kept the process in turmoil after nearly 20 years. The issues swirled around how utilities would work with each other, how non-FERC-regulated utilities like cooperatives would be affected and how costs for new transmission would be allocated and paid. Answers to those and other details remained elusive.

Renewable energy projects, in particular, have difficulty in building or accessing the transmission necessary to move power to the market, said Mike Eggl, Basin Electric senior vice president of External Relations and Communications. That is based on the intermittent nature of the wind, so turbines create power only part of the time, while conventional power plants normally have a constant fuel available and thus can operate at full capacity for comparatively longer periods.

Renewable energy, like wind projects, have less productivity because of lower capacity factors than conventional power plants, thus hindering development of transmission for that type of energy, according to Eggl. Even wind projects with a good productivity level, such as a 40-percent capacity factor, means that they are not producing 60 percent of the time. "Financially, this does not work" for developers of transmission lines, he said. [29]

Basin Electric and other utilities looking for resolution of the national transmission dilemma took heart in January 2009. In an address, newly elected President Barack Obama talked about accelerating the creation of a clean energy economy, including investing in the country's transmission system and creating a concerted nationwide effort on transmission.

Basin Electric wasn't leading the effort to develop a national transmission grid. However, it was asked to serve as a consultant in the process by Dorgan, a senior member of the Senate Energy and Natural Resources Committee.

29. Erin Huntimer, "National Transmission Grid: Basin Electric helps shape vision for the future," *Basin Today,* Basin Electric Power Cooperative, March-April 2009, 3.

To show how Congress could proceed, Basin Electric created a white paper titled "National Transmission Grid: A Vision for the Future," authored by Risan with assistance from Eggl.

Risan said pricing transmission locally rose as the top obstacle in creating a national grid. Basin Electric had been a longtime advocate of postage-stamp pricing, also called system-wide average pricing, for the high-voltage transmission system. Under this pricing model, all users pay a pro-rata share for usage of the transmission system.

Using this pricing approach would eliminate the debate over cost allocations and lead to developing a national transmission grid, Risan said. "It's a successful model that could be expanded," he said.[30]

The Integrated System

The model matched the pricing philosophy within the Integrated System, the backbone of the high-voltage transmission system in the Upper Great Plains region. Evolved from the Joint Transmission System created just after Basin Electric's founding, the Integrated System included the transmission systems of Basin Electric, Western and Heartland Consumers Power District of Madison, SD.

Among the other suggestions in the widely circulated white paper:

- Providing incentives for voluntary participation and forming a national grid over time, rather than a legislated, mandated approach;
- Consolidating the current system's patchwork of facilities;
- Encouraging more of a role of load-serving entities in the transmission-planning process; and
- Encouraging cooperation among states.

Overall, the white paper suggested, a national transmission grid should focus on enhancing energy independence, national security and environmental stewardship, while improving grid reliability and promoting economic development.

30. Ibid, 4.

The Integrated System (IS) of the Western Area Power Administration, Basin Electric, and Heartland Consumers Power District, is the backbone of the high-voltage transmission grid in the Upper Great Plains.

Subsequently, Dorgan introduced legislation to "clear the way for a national 'electric power transmission superhighway,' unlocking the opportunity to dramatically increase the production of energy in rural states like North Dakota."[31]

Dorgan suggested the nation should use the approach taken in the 1950s in constructing the Interstate Highway System for building a national grid. Rural states like North Dakota "have a significant supply of energy resources, but we just can't put them to use unless there's a way to get them to the markets in Minneapolis and Chicago and other urban areas," Dorgan said. Modernizing the energy grid will resolve that problem, he said.

U.S. Sen. George Voinovich of Ohio joined Dorgan in announcing the bill, which was among several produced at that time dealing with energy and a national grid.

31. U.S. Sen. Byron Dorgan, "Dorgan introduces bill to boost energy grid in North Dakota, across the nation," news release, April 1, 2009, 1.

A transmission tower on the 345-kilovolt Leland Olds Station-to-Fort Thompson transmission line at sunset.

Despite no resolution on a national transmission grid, Basin Electric undertook several significant transmission projects in the region to continue serving its membership. Major transmission expansions moved forward in Wyoming and North Dakota; Basin Electric completed numerous projects for new or additions to substations in Montana, South Dakota, North Dakota and Wyoming. The Cooperative's transmission system maintenance division also expanded, opening an additional maintenance shop near Gillette, WY, in 2009.

Dakota Gas: New leaders, a production benchmark and record profits

Meanwhile, new leaders moved into key positions in 2006 at the Dakota Gasification Company, Basin Electric's major subsidiary that owns and operates the Great Plains Synfuels Plant in North Dakota.

Gary Loop

Gary Loop, a chemical engineer, who had experience in the refinery and crude oil industries, joined the subsidiary in May 2006 as chief operating officer and senior vice president. He replaced Al Lukes, former Synfuels Plant manager, who became chief operating officer in 1998, and retired earlier in 2006.

Fred Stern, who managed the Synfuels Plant since 1999, retired in early 2007. Named as his replacement was Bob Fagerstrom, who'd been with the plant since 1986.

Loop said he felt his experience in the refinery and utility businesses were important coming to the Dakota Gas job. "I had been in both worlds and so it's been a natural fit for me," he said, in an interview."[32]

He also said he was hired to bring a business sense to this for-profit subsidiary of Basin Electric; his business acumen was called upon soon enough. Harper, who is president and CEO of Dakota Gas, met with Loop to ask how he could manage the company so it could achieve a lower production cost at $5 per dekatherm.

Harper had identified that as a cost-of-production goal, knowing that the company's production costs were moving upward, toward $6 per dekatherm. "It's simply where I thought we could start to average over a good number of years," he said.[33]

The new subsidiary COO said part of the concern was the company's competition in the volatile natural gas industry. "We were concerned new shale gas producers are producing at costs between $5 and $6 per dekatherm," Loop said, in a Basin Electric magazine story. "At what price would they stop producing?"[34]

If the plant can achieve that cost of production, "we're about as safe as we can expect to be, as long as we meet or exceed all of our safety and environmental requirements and maintain a sustainable operation mechanically," he said.

As he began his new job, Loop decided to put on his boots, leave his office and spend time with as many operations, maintenance and engineering employees he could at the Synfuels Plant near Beulah, ND. What he found, he said, was an industrial facility with talented employees with lots of ideas.

He began selling the idea to the 700-plus Dakota Gas staff that production costs had to be trimmed to $5 per dekatherm. That benchmark translated into making up a difference of $50 million a year, either with more revenue or by cutting costs.

Employees began embracing the goal, working together as groups to build a strong business sense in all they do, as well as addressing cost management improvements and additional revenue from product sales, according to the company publication.

32. Gary Loop, interview with the author, June 10, 2010.

33. Ron Harper, interview with the author, June 28, 2010.
34. Kathi Risch, "Wrench time overhaul," *Basin Today,* Basin Electric Power Cooperative, September-October 2009, 9.

The next challenge came in developing a sense of urgency, Loop recalled, in 2010. "This isn't something we do because it's the flavor of the month—it's survival. We aren't going to survive if we're producing a five-dollar product at six bucks."

Dakota Gas hired a consultant to look at improving efficiencies, including the planning process, at the plant. "We had a consultant … that helped us streamline our work management program to increase efficiencies, increase our wrench time, and make sure we're doing the most work in the field that we can get done," said Steve Pouliot, the plant's process operations manager.[35]

The plant's maintenance manager, Dave Sauer, said maintenance technicians were doing a good job "but we weren't managing them as well as we could, so we reworked our management system."

An important change was better coordination of maintenance crews, so that materials and resources were scheduled when needed. The actual maintenance time, or wrench time, spent by crews moved from 45 percent to about 55 percent, according to Loop. "That wasn't cracking the whip on the hourly workers," he said, in the 2010 interview, "it was by having better planning of their time."

That effort also reduced the frustration level of those crews, he said.

Loop said he felt good with the efforts toward the cost-of-production target, estimating that a third of the $50-million total has been achieved through cost savings and the remainder through revenue enhancements.

The drive toward a sustainable operation at the Synfuels Plant could change, though not eliminate, the cyclical financial nature of Dakota Gas. The bottom line for the company had been somewhat serendipitous each year since Basin Electric acquired the coal-to-synthetic gas plant in 1988. The company's financial chart over the years often resembled a roller coaster ride, largely dependent on the price of natural gas.

35. Ibid, 10.

With natural gas prices trending upward in the early 2000s, Dakota Gas experienced its best financial gains ever.

By 2006, the average price for natural gas had moved up to $6.60 per dekatherm, with total sales by Dakota Gas at about $452 million and net income at nearly $71 million. And in 2008, the company achieved a banner year, with nearly $567 million in total sales and a net income of about $128 million.

That meant the company had earned more in those three years than in its previous 20-year history combined. That was good news for the membership of Basin Electric as well as the federal government.

From left: Ron Harper, president of Dakota Gas and CEO and general manager of Basin Electric, presents a ceremonial check for $39.2 million to Samuel Bodman, U.S. Energy Secretary in 2007. Sen. Byron Dorgan, Rep. Earl Pomeroy and Sen. Kent Conrad, all of North Dakota, were there for the presentation.

With those results, a new method was approved for bringing additional Dakota Gas profits to Basin Electric's member cooperatives. The subsidiary's directors approved a dividend process, and, in addition, Basin Electric directors passed on a certain amount of Dakota Gas profits to its members as credits to their power bills at the Cooperative.

For the federal government, the profits at Dakota Gas meant it was getting a larger portion of its investment back. In 2005-09, Dakota Gasification paid a total of more than $224 million to DOE based on a revenue-sharing agreement signed when the Synfuels Plant was purchased by the Basin Electric subsidiary. The agreement was to help DOE recover funds loaned to the original developers of the plant but who then defaulted on the guaranteed loans in 1985 after the plant was built.

The shared revenue comes from gas sales, with the amount determined by natural gas prices and other economic indicators. With the final payment in 2009 under the 20-year agreement, the DOE received a total of more than $390 million since the plant was sold to Basin Electric through its subsidiary. And combined with the original purchase price of $85 million, and the production tax credits valued at $754 million that Basin Electric agreed not to use, the federal government had recovered more than $1.2 billion of its original $1.5-billion investment in the Synfuels Plant from the Basin Electric family.

"The revenue-sharing agreement has been a success for both the government and Basin Electric," said Sen. Byron Dorgan of North Dakota, during a ceremony in Washington, D.C., in 2007. "It allowed a very important energy development project to continue in our state with the prospect that future profits would be shared by Basin Electric and the federal government."[36]

The Synfuels Plant had been getting national and international attention for decades. Thousands of international visitors had trekked to the site in central North Dakota to see the lignite-to-gas facility as well as where the carbon dioxide was fed into the pipeline.

In April 2009, for instance, U.S. Secretary of the Interior Ken Salazar toured the facility, noting the plant's importance for the energy industry. "This (plant) is the only (coal-based) carbon capture and sequestration program in the Western Hemisphere," Salazar said. [37] "There is a lot to learn about the future of coal right here, and I was excited to see a demonstration project that is actually up and functioning and working."

Salazar also commented on the energy mix needed by America during an energy symposium in Bismarck at the time of his visit. "We need a new energy plan for America—one that takes advantage of our conventional resources, including oil, gas and coal—and renewable resources, such as solar, wind, biofuels and geothermal," he said.[38]

U.S. Secretary of the Interior Ken Salazar (right) visits on April 25, 2009, the Great Plains Synfuels Plant with (from left) U.S. Sen. Byron Dorgan, Basin Electric CEO Ron Harper and Dakota Gas COO Gary Loop about the carbon capture being done there.

A few months later, groups from China and Mexico visited the Synfuels Plant, escorted by John Panek, deputy director of the DOE's Office of Clean Energy Collaboration.

Thanks to a Basin Electric tour program, visitors from member rural electric co-ops had been touring the Synfuels Plant, the adjacent Antelope Valley Station and Freedom Mine for many years.

Each year these tour groups get an up-close view of those energy facilities as well as miniature plant models and attractive display boards. One of those making a bus tour in November 2009 was Larry Huhn of Litchfield, MN, a board member from Meeker Cooperative Light and Power Association, a recent addition to the Basin Electric membership. After completing the visit to those facilities, Huhn said, in an interview, that he was impressed by the state-of-the-art equipment as well as by how well the operations were organized. "I never really put together the cost of all those items and what a huge, huge investment it really is," he said. "And to get that to the light switch, it really is amazing that the electricity is as cheap as it is."[39]

36 Daryl Hill, "DGC pays $39 million to Department of Energy," *Basin Today,* Basin Electric Power Cooperative, May-June 2007, 10.
37 "U.S. Secretary of the Interior Ken Salazar visits Great Plains Synfuels Plant," *Basin Update,* Basin Electric Power Cooperative, April 29, 2009, 1.

38. "Interior Secretary Salazar praises N.D. energy," *North Dakota Living,* North Dakota Association of Rural Electric Cooperatives, December 2009, 2.
39 Larry Huhn, interview with the author, Nov. 4, 2009.

Wayne Child (seated at left) and Don Feldman sign various contracts following an Aug. 13, 2009, vote of the membership allowing Corn Belt Power Cooperative to be a Class A member. Present to witness the signing were (back row from left) Ron Harper, Ken Kuyper, Charlie Gilbert, Kirby Range, Roberta Rohrer, Wayne Peltier, Dean McCabe, Gary Drost, Don Applegate, Reuben Ritthaler, Roy Ireland, Scott Stecher, Cliff Gjellstad and Kermit Pearson.

A strong close to the decade

As the decade drew to a close, Basin Electric's strength showed in a number of ways.

The Cooperative grew significantly as the result of a special meeting on Aug. 13, 2009. In a historical move, Basin Electric members ratified a bylaw change to create an 11th Class A district and another seat on the Basin Electric board. That allowed Corn Belt Power Cooperative in northern Iowa to become the 11th Class A member as of Sept. 1, 2009, a move that strengthened Basin Electric by boosting its size by about 15 percent.

That 2009 special membership meeting was the first in more than 20 years and the first time since 1997 that the Cooperative added a Class A member. Class A members generally are generation and transmission cooperatives that purchase wholesale power from Basin Electric and have their own board seats.

But the significance was more than historical.

Basin Electric also notably expanded its geographic footprint and generating resources, adding nuclear generation for the first time to its resource portfolio.

Of its total owned generation of about 296 megawatts, Corn Belt Power had 62 megawatts of nuclear power at the Duane Arnold Energy Center in Palo, IA. Coal represented about two-thirds of its owned power, but it also featured some gas-fired generation, purchased wind power and an allocation of hydropower.

By becoming a Class A member, the Humboldt-based cooperative brought these resources into Basin Electric's generation mix, along with 11 distribution cooperatives and about 1,675 miles of high-voltage transmission lines.

The inclusion of Corn Belt Power meant the number of Basin Electric's member systems grew to 136 members serving 2.8 million people in nine states. (Two Corn Belt Power members merged shortly thereafter.)

Transmission issues prevented earlier efforts to become allied, but that was overcome in 2009. Facing changes in regional transmission organizations, Corn Belt Power determined that its best option was to go with Basin Electric and become part of the Western transmission control area. "By becoming a Class A member, Basin would not only provide an additional power supply

Corn Belt Power Cooperative

Generating resources

Corn Belt Power Cooperative sells all of its generation output to Basin Electric. As a Class A all-supplemental requirements member, Corn Belt Power buys from Basin Electric all of its power needs above its hydropower allocation and through an existing 50-megawatt (MW) contract with Basin Electric.

Corn Belt Power has one wholly owned coal-fired power plant and owns one-half of a gas combustion turbine generator. It is also a joint owner of three coal-based power plants and one nuclear power plant.

Duane Arnold Energy Center
Operated by FPL Energy
Location: Palo, IA
Capacity: 610 MW (Corn Belt's share, 62 MW winter, 60 MW summer)
Fuel: Nuclear
Operational: 1975

George Neal Station Unit 4*
Operated by MidAmerican Energy
Location: Sioux City, IA
Capacity: 644 MW (Corn Belt Power's share, 75 MW)
Fuel: Coal
Operational: 1979

Earl F. Wisdom Station Unit 1
Owned and operated by Corn Belt
Location: Spencer, IA
Capacity: 38 MW winter, 37.5 MW summer
Fuel: Coal
Operational: 1960

Earl F. Wisdom Station Unit 2**
Operated by Corn Belt, 50% ownership
Location: Spencer, IA
Capacity: 80 MW winter, 78.2 MW summer
Fuel: Natural gas/fuel oil
Operational: 2004

Walter Scott, Jr. Energy Center units 3 and 4
Operated by MidAmerican Energy
Location: Council Bluffs, IA
Capacity: Unit 3, 690 MW; Unit 4, 800 MW (Corn Belt's share, Unit 3, 26 MW; Unit 4, 42 MW)
Fuel: Coal
Operational: 1978 and 2007

*Basin Electric purchases 73 MW from Corn Belt Power because 2 MW was sold through a pre-existing long-term agreement. Northwest Iowa Power Cooperative also owns 31 MW of George Neal 4 that Basin Electric purchases.

**Basin Electric owns 50 percent (40 MW) of the plant and purchases 35 MW from Corn Belt Power because 5 MW was sold through a pre-existing long-term agreement.

Corn Belt Power's additional sources of power:

Western Area Power Administration (hydro) - 27 MW

Webster City (IA) Combustion Turbine (fuel oil) - 25 MW winter, 21.1 MW summer

Hancock County Wind Energy Center, Duncan and Klemme, IA - 7.3 MW

Crosswind Energy (wind), Ayrshire, IA - 16.8 MW

Iowa Lakes Electric Cooperative (wind), Superior and Lakota, IA - 21 MW

City of Estherville (IA) Generator (diesel) - 11.18 MW

City of Pocahontas (IA) Generator (diesel) - 3.8 MW

City of Spencer (IA) Combustion Turbine (jet fuel) - 10 MW

for Corn Belt, but would also facilitate Corn Belt's participation in the Western control area," said Ken Kuyper, Corn Belt Power's executive vice president and general manager.[40]

With the change, the two organizations' transmission systems were effectively combined within the Western control area. And Basin Electric would purchase all of Corn Belt Power's generation output.

Nuclear power poses some risk as does an increase in firm power supply obligation, said Dave Raatz, Basin Electric manager of marketing and power supply planning. However, Basin Electric concluded the overall impact of the business integration was positive. The Cooperative could reduce its carbon dioxide exposure by buying nuclear power, and it could learn more about this resource for possible future expansion, according to the *Basin Today* story.

Raatz said that perhaps the biggest benefit for Basin Electric was the effect of spreading its generation resources even more, giving the Cooperative more opportunities for sales of power surplus to member needs. Overall, he estimated the benefit to Basin Electric of Corn Belt Power's Class A membership at about $7 million in 2010-15.

Wayne Backman, Basin Electric's senior vice president of Generation, offered a historical perspective. "It reflects Leland Olds' philosophy of economy of scale, and that Basin Electric was envisioned as a large regional wholesale power supplier in the Missouri River Basin," he said. "The arrangement results in resource diversity, geographic diversity and political diversity. There's risk sharing and there's financial strength. It continues the tradition of welcoming new member co-ops to the Basin Electric family, and it has been a pleasure to work with Corn Belt staff."

Kuyper agreed. "Together, we can reduce risks for both co-ops. And that's what it comes down to—both co-ops helping each other out."[41]

40. Andrea Blowers, "All in the family: Corn Belt takes seat at the table," *Basin Today,* Basin Electric Power Cooperative, September-October 2009, 4.
41. "Building Stability in a Climate of Change," *2009 Annual Report,* Basin Electric Power Cooperative, 14.

Cliff Gjellstad accepts the gavel from Wayne Child.

With the agreements signed, Corn Belt Power elected its new member to the Basin Electric board: Charlie Gilbert, a corn and soybean farmer from near Iowa Falls, IA, who had been a board member at Corn Belt since 2000.

A few months later, another big change would come to the Basin Electric board.

Wayne Child, Basin Electric's second-longest serving president at 13 years, announced at the Cooperative's 2009 annual meeting in November that he would be stepping down from that post. However, Child, who has been on the Basin Electric board since 1985, said he would continue as a director, representing Tri-State Generation and Transmission Association in Colorado.

In an interview earlier in 2009, Child said he thought cooperatives face an excellent future but not without more communication and educational effort. "I think we, as directors and the other people involved, are going to have to communicate to people more than we have in the past," he said.[42] "We have a different type of generation now. They're not the original incorporators. I feel we need to communicate with them and educate them about the values of a cooperative. I realize it's a big job, but I think it needs to be done."

Reflecting on Basin Electric, Child said, "It is a great organization, and I'm proud to be part of it, and one of the things that makes it a great organization is the people that work for it."

42. Wayne Child, interview with the author, June 9, 2009.

continued on page 179

Financial strength: *Key to cooperative viability*

The electric utility industry is considered one of the most capital intensive.

With a second phase of construction beginning in late 2003, Basin Electric's core financial strength proved invaluable in acquiring capital for this approximately $3.5-billion multiyear building phase that was winding down in 2010-11.

Buzz Hudgins, who retired in January 2011 as Basin Electric's chief financial officer and senior vice president for Financial Services, had served as a key architect of the financial strength built by management and the Basin Electric board of directors over many years. Hudgins readily credits his predecessor, Arnold Ketterling, for laying the foundation in the mid-1980s for the Cooperative's financial health.

At that time, Basin Electric emerged from its first growth period with member rates climbing skyward and high-interest debt. It was not a pretty financial picture for member cooperatives. Typically, generation and transmission cooperatives simply relied on the Rural Electrification Administration, or REA (now the Rural Utilities Service, or RUS), to finance facilities.

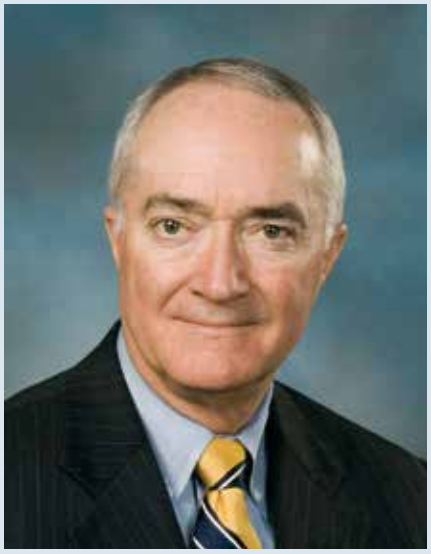
To better manage the cost of that debt, the Cooperative turned to several innovative approaches initiated by Ketterling, then Basin Electric's manager of Accounting and Finance.

Some of the employees that helped move the Cooperative forward with innovative financing approaches in the early '80s include (foreground from left): Arnold Ketterling, manager of Accounting and Finance; Larry Brutlag, chief of financial services; Sandy Gonzales, administrative assistant; (background from left) Mark Foss, staff attorney; and Ben Reem, fiscal economist.

One such approach involved taking advantage of a rather short opportunity: safe harbor leases. Passed by Congress to stimulate capital investments, the 1981 and 1982 laws established a two-year program allowing transfer of tax benefits by an asset owner that couldn't use them as efficiently as a "lessee" that could make better use of the energy and investment tax credits and accelerated depreciation. This involved some degree of risk, said Hudgins, in an interview more than 20 years after the transactions, but using them "delivered a cushion of equity that Basin needed at that point to make it a stronger organization financially."[1] The safe harbor lease program netted more than $280 million for Basin Electric in that period.

Another significant and successful financing activity engineered by Ketterling in the early 1980s was leveraged leasing. Under this approach, Basin Electric sold

1. Buzz Hudgins, interview with the author, July 24, 2009.



Clifton T. "Buzz" Hudgins

Photo by: Photo Bureau, Inc. Joe Vericker

In mid-December 2007, Basin Electric closed on a $550-million financing facility with a syndicate of commercial banks to support commercial paper to be issued in 2008. Buzz Hudgins, Basin Electric chief financial officer, shakes hands with Jay Saakvitne of JPMorganChase, a bank that participated, as Steve Johnson, Basin Electric manager of treasury services, and Paul Neuhedel and Michael Altman of JPMorganChase look on.

facilities to outside investors for a certain period and leased them back, though the Cooperative retained control over their operation. With interest rates high across the country at that time, interest expense—along with the cost of coal—were the two largest expenses for Basin Electric, Hudgins said, in 2009.

With the leveraged leasing arrangement, Basin Electric effectively reduced the interest costs for financing both units of the Antelope Valley Station by nearly half, according to Hudgins.

Those two financial programs allowed Basin Electric to keep its mill rates for its members as low as possible during that first construction phase since Basin Electric was founded, according to Hudgins.

With Ketterling's retirement, Hudgins came to Basin Electric in 1986, an experienced commercial banker from Wall Street. Admittedly having no cooperative or utility experience, he didn't expect to be at Basin Electric more than three years.

But Hudgins stayed, and Basin Electric benefited from his experience and guidance. Over his nearly 25 years at the financial helm, the Cooperative further refined its financial sophistication and expanded its financial resources. Beginning in 2003, Basin Electric's finance team put together a plan tapping many sources to fund this new construction cycle.

For its capital, now the Cooperative accessed both private capital and public debt markets in addition to financing from the RUS. In addition, it also used bonds, bank lines of credit, the Farm Credit System, the National Rural Utilities Cooperative Finance Corporation, its own funding and investments from members.

However, in the middle of this second construction cycle, things got tougher for Basin Electric—and the rest of the country.

The nation underwent a financial crisis and the most severe recession since the Great Depression of the 1930s. "We had to decide what to build in a changing regulatory environment," Hudgins said. "A planned coal-based unit fell by the wayside just as the economy and financial markets blew up. And we

accomplished this construction program with commodity prices fluctuating rather dramatically."[2]

By 2009, the Cooperative's financing activities reached new heights, raising more than $1 billion to continue its $3.5-billion construction program expected to end in 2012.

Basin Electric undertook a number of financing agreements with several lenders totaling more than $1 billion. In addition, the Cooperative had submitted $1.8 billion in loan applications to the RUS as well as another $1 billion in loan guarantees to that federal agency.

By borrowing from the RUS, the Cooperative can save more than $400 million in interest over the life of the loans, according to Steve Johnson, Basin Electric manager of treasury services. And, Johnson said, the strength of the Cooperative's financing strategy is that it doesn't have to rely on the RUS or any single resource for funding.

Hudgins said the economic downturn had him concerned about the Cooperative's ability to raise capital. "2009 was truly a banner year for debt issuance and the execution of Basin's capital plan, particularly when one considers the turmoil in the credit markets," said Hudgins.[3] "Basin Electric entered the year with all the right conditions in place—strong bond ratings, a need for capital, a low-interest rate environment and lenders asking to buy our paper. A CFO couldn't have asked for a better environment."

At the Cooperative's annual meeting in November 2010, Hudgins announced his retirement and publicly praised his staff: "It's been my pleasure to lead a team of professionals, all of them extremely capable in their fields and across all disciplines comprising the financial function."

Ron Harper, Basin Electric CEO and general manager, recognized Hudgins for his years of service and financial guidance. "After serving more than 24 years as Basin Electric's CFO, Buzz's knowledge and experience of the financial markets have allowed us to participate successfully in the capital markets during extraordinarily challenging economic times. I have witnessed first-hand the respect that our lenders and the financial markets give to Buzz and, as a result, to Basin Electric and ultimately to the person at the end of the line."[4]

Paul Sukut

Harper named Paul Sukut, the Cooperative's senior vice president and deputy general manager, as the new CFO. Sukut, who has more than 30 years in the energy industry, had been responsible for human resources, corporate services, member services, internal auditing and strategic planning. He'd been the Dakota Gas vice president of Finance for 13 years and with the parent organization for 14 years.

Harper indicated that the new CFO would serve Basin Electric well for the future. "With his background and experience, Paul has the ability to build upon the financial strengths that Buzz has developed over the years," Harper said.

2. Julie Slag, "An island in the storm," *Basin Today,* (November-December 2010), 8-9.

3. "2009: A banner year for debt issuance." Basin Electric Power Cooperative website (Feb. 12, 2010) http://www.basinelectric.com/News_Center/Publications/News_Briefs/2009_A_banner_year_for_debt_ussuance.html

4. "Sukut named as new CFO at Basin Electric," news release, Basin Electric Power Cooperative, Nov. 8, 2010, 1.

Child is known for his straightforward, uncomplicated way of dealing with people. He served rural America, first and foremost, said Harper, in a tribute to Child in the *2009 Annual Report*. "He's a man of integrity, and when he shakes your hand, you know his word is good."

In December 2009, Cliff G. Gjellstad was elected to replace Child, becoming just the ninth man to serve as the Cooperative's president in its nearly 50-year history.

A Basin Electric director since 2000, Gjellstad, a retired farmer from Norwich, ND, had been board vice president for seven years. He represents Central Power on the Basin Electric board.

Cliff G. Gjellstad was elected president on Dec. 15, 2009, the ninth person to serve as the Cooperative's president in its 50-year history.

Looking back, Gjellstad said in an interview, the formation of Basin Electric by cooperative leaders has proven to be a great move. "There were some very thoughtful people that had a foresight that was pretty good, I think," he said, shortly after becoming Basin Electric president.[43]

Basin Electric's financial strength during this period was especially notable because the country and the world were jolted by an economic shock in 2008-09. In America, the accompanying recession—the worst since the Great Depression—had several underlying causes, including lending practices by financial institutions as well as the growing trend of securitization of real estate mortgages. Bad economic news unfolded week after week in this period. Americans were stunned and infuriated as they watched large financial institutions collapse, the stock market melt down, economic activity wither, credit markets drop off and job losses climb.

43. Cliff Gjellstad, interview with the author, June 15, 2010.

With its financial strength built up over the years, Basin Electric weathered the economic storm remarkably well.

In 2006-09, with electric sales to members rising more than 26 percent, the Cooperative's consolidated net margin climbed to a total of $321.1 million for that four-year period. That figured out to an average of more than $80 million annually, with a high point of $126.1 million in 2008.

Directors ensured the good returns flowed back to member cooperatives. They approved a return of a total of $225.3 million in cash to members in that same period, in the form of power cost adjustments, bill credits and patronage capital.

Basin Electric endured the economic turmoil and moved ahead with financing debt for construction projects totaling $3.5 billion. "Basin Electric entered credit markets with all the right conditions in place: strong credit ratings, a need for capital, a low-interest rate environment and lenders looking for a stable investment. Basin Electric raised more than $1 billion in 2009 to continue its $3.5-billion construction program."[44]

Buzz Hudgins, Basin Electric's chief financial officer and senior vice president of Finance, said the Cooperative's great bond ratings served the organization well in this period. Combined with those ratings, Basin Electric carried a stable business outlook, offered an essential service and had no rate regulation by a public service commission, he said. As a result, "Basin would be a fairly riskless place to put your money," Hudgins said.[45]

Other companies with less strength were effectively frozen out of the credit market, he said. Both the Bush and Obama administrations sought to thaw those markets with infusions of cash, "a little bit like pushing out a string but it did help to free those markets up." Though there were fears that the credit markets would be completely halted, Hudgins said, the result actually was

44. "Financial Markets in a Climate of Change," *2009 Annual Report,* Basin Electric Power Cooperative, 34.
45. Buzz Hudgins, interview with the author, July 24, 2009.

a severe constraining. "And there were periods where only the strongest credits could raise money, and that would describe Basin Electric," he said.

In its assessment in the *2009 Annual Report,* Hudgins' finance group reported it this way: "Basin Electric has been able to secure financing because of its strong financial metrics, financial flexibility, long-term power sales contracts through the life of the obligations, low-cost and reliable power supply resources, and sound management policies. The Cooperative also has valuable generating assets, solid financial partners, and a strong and steady membership, all of which enable it to get financing at reasonable rates."

Financing, of course, was critical as Basin Electric maneuvered through a maze of construction projects, including:

- The Dry Fork Station, a 385-megawatt coal baseload power plant near Gillette, WY, with expected completion in 2011.
- PrairieWinds ND 1's 115.5-megawatt wind project with 77 turbines south of Minot, ND. Construction to be finished by the end of 2009.
- The Culbertson Generation Station, a 95-megawatt natural gas-peaking unit representing Basin Electric's first generating resource in Montana. With construction under way in June 2009, the unit was to be completed in 2010.
- Prairie Winds SD 1's 151.5-megawatt wind project with 101 turbines planned for central South Dakota with completion in late 2010 or early 2011.[46]
- The Deer Creek Station, a 300-megawatt gas-fired, combined-cycle facility near Elkton, SD. Completion was expected in 2012.

The downturn in the economy just before the decade's end caused a tactical change by Basin Electric's leaders. Electric usage slowed and the projection for member loads now was projected at a "less aggressive pace,"

Boldt Construction places one of 14 70-foot-long heat recovery steam generator (HRSG) modules in April 2011 at the Deer Creek Station. The combined-cycle plant will have a gas turbine spinning one generator. Then the gas turbine's hot exhaust is captured and sent through the HRSG modules to heat water for the steam turbine, which spins another generator.

according to Basin Electric. As a result, the Cooperative slowed the pace of construction, delayed financing requirements and concentrated on other matters, specifically legislative, policy and technology issues, according to Harper and Gjellstad, in the *2009 Annual Report.*

But management and directors had kept a collective hand on the construction and growth throttle. Resource growth was diversified and occurred in segments. The Cooperative had taken a very measured approach to its resource goals, said Paul Sukut, Basin Electric senior vice president and deputy general manager.[47] "I'm very proud of the fact that we didn't overshoot, that we took a very broad, diversified approach."

Using this segmented approach, Harper said, Basin Electric likely would never get totally out of a construction mode. "I just see that there will be incremental improvements or construction going on as we go forward," he said.

That approach to growth likely would be the blueprint that Basin Electric would employ for the foreseeable future.

46. Mitchell Technical Institute bought one wind turbine in 2011 for its technical degree program and South Dakota Wind Partners raised investments to add seven turbines to the project. PrairieWinds SD 1 will buy the power these turbines generate and sell it to Basin Electric.—Ed.

47. Paul Sukut, interview with the author, June 15, 2010.

Ron Harper: *A CEO steeped in the cooperative tradition*

The man who became the third general manager of Basin Electric Power Cooperative has roots deep in America's rural electric system.

In fact, Ron Harper's entire working career has been devoted to rural electric cooperatives.

Born in San Diego, Harper moved with his parents to Texas and then to Oklahoma where his father worked for Western Farmers Electric Cooperative. His youth was spent mostly in Anadarko, OK. Harper went on to earn a bachelor's degree from Southwestern State University in Weatherford, OK.

Harper met his wife Joy at college. "I had just formed a rock 'n' roll band. Some of us were in college and some were still in high school. There was a town in between the two. … We met midway at an old dairy barn and that's where we practiced," Harper said. A friend brought Joy and her best friend to hear them play. They struck up a conversation. He got to know her better at a birthday party her friend was throwing for her

Ron Harper assumed his duties as Basin Electric's third chief executive officer and general manager on April 23, 2000.

and they started dating. They got married Feb. 14, 1970. “She traveled with the band when she could, so I guess you can call her a ‘groupie,’” he said. He followed up by saying, “I know that I’ll get in trouble for explaining that point, but it has been a great 41 years”.

After college, Harper expected to teach and coach. Instead, he was offered a job as a draftsman with a local cooperative in 1970, beginning his career with electric cooperatives.

“I have basically worked my entire professional career for that person at the end of line,” Harper said.[1]

In 1978, he became engineering superintendent at Carbon Power & Light Inc. in Saratoga, WY, before landing the general manager position there. In 1988, Harper went on to a 12-year stint as general manager of Powder River Energy Corporation (PRECorp) in Sundance, WY, which was Basin Electric’s largest customer.

While at PRECorp, he served on the board of the National Rural Utilities Cooperative Finance Corporation, a private cooperative bank, and as chairman of its finance committee. In 1997, he earned the National Rural Electric Cooperative Association’s Region VII award for outstanding service.

North Dakota Gov. John Hoeven and Ron Harper shake hands after signing documents at an April 12, 2007 press conference whereby the Bank of North Dakota would finance a portion of the Belfield-to-Rhame transmission project. Hoeven was elected a U.S. Senator for North Dakota in November of 2010 after 10 years as governor.

With the retirement of Robert McPhail as Basin Electric’s CEO in 1999, Harper applied for the position, ultimately taking the Cooperative’s helm in April 2000.

Harper said his direction from the board of directors was to improve communications, especially with the member systems. “They (board members) agreed with me that communication is one of the keys to our success in this changing environment,” he told *Basin Today*.

Harper provided the direction to meet those changes, including diversifying Basin Electric’s electric generation portfolio. In 2000, it was virtually all coal, except for some peaking facilities.

Early in his career at Basin Electric, the Cooperative developed its first wind resources, consisting of two turbines in South Dakota and two turbines in North Dakota. Since then, Basin Electric has developed about 273 megawatts of wind power through its subsidiaries, PrairieWinds

1. Risch, “Getting to know the new CEO, ..., *Basin Today,* Basin Electric Power Cooperative, May 2000, 3.

Ron Harper said his direction from the board of directors was to improve communications, especially with the member systems. He carried that through with employees as well, having face-to-face meetings with employees twice a year at all major facility locations. Here he is just prior to the May 2011 headquarters employee meeting.

ND 1 and PrairieWinds SD 1. It has also added 390 megawatts of wind resource under long-term purchase power contracts.

"We felt back in 2001 … that we needed to start diversifying our … energy development, and learn more about intermittent resources and we've done that," Harper said, in reporting to the membership in November 2010.

Through the next decade, Basin Electric significantly broadened its generation portfolio so that by 2011 it included wind, natural gas, oil, renewables and nuclear. Coal still remains a vital part of Basin Electric, he said. With the use of coal, the organization has been committed since its inception to protecting the environment, investing more than $671 million in pollution controls and other equipment on coal plants and other facilities through 2010. By 2012 that figure will reach $1.4 billion with annual operating expenses of $153 million.

However, Harper is proud that Basin Electric and its members have become leaders in developing renewable energy in North Dakota and South Dakota. He demonstrated that by helping to form the National Renewable Cooperative Organization (NRCO) in April 2008 and serving as its first president. NRCO grew out of discussions by generation and transmission cooperative managers about ways electric cooperatives could join nationally in alternative energy projects. "This is truly a first-of-a-kind effort," Harper said, in a news release at the time. "I'm excited about the possibilities NRCO can offer to its members."

Since joining Basin Electric, Harper has served in a number of leadership roles in the industry.

He was elected president of the National G&T Manager's Association in 2008 as well as chairman of the American Coalition for Clean Coal Electricity. He has been vice secretary/treasurer of Western Fuels-Wyoming, a fuel supply

cooperative, and board chairman of the North Dakota Lignite Energy Council. In 2006, Wyoming Gov. Dave Freudenthal appointed Harper to a council charged with developing the University of Wyoming's newly formed School of Energy Resources. Harper was elected as the council's first chairman.

With Harper as CEO, Basin Electric has become the second largest G&T cooperative in the nation. With more than 2,000 employees, it has grown to 135 member rural electric systems that serve 2.8 million consumers in nine states. By 2012, Basin Electric will have spent about $3.4 billion in developing new generating resources while more than doubling its assets to $5.5 billion.

However, when asked about the job satisfaction, Harper responds by talking about people, not facilities or spreadsheets. Without the great people of this organization, he said, "you're not going to be successful." Managing an intricate and complicated energy organization like Basin Electric requires a "great team" of top-notch staff, he said.[2]

Harper says that his management style has always centered on MBWA (management by walking around), learning about an organization and communicating as much as possible. You don't fully understand your organization "if you're just sitting behind a desk," he said. "I work hard at communicating what's going on, not only with our people, but also the membership and obviously the board."

Ron and Joy Harper

Part of his communication effort has been twice-a-year meetings with employees throughout the organization's sites. He said that involves both a give and take—listening to employee concerns and sharing an overview of what is happening to the business.

Harper also credits Joy for helping him with his career. "As you advance in the business world and take on more responsibility, it's not just the individual; it is a family effort. Your spouse has to be supportive. Your spouse has to understand the dynamics and challenges of any job, but what I found is that as I had the opportunity to climb the ladder, if you will, along with that came more responsibilities for Joy.

"With all due honesty and a great deal of humility, … when we were in Wyoming, we got to meet a lot of members of congress and the governor," he said, "but since coming to Basin that has been elevated to the highest degree. … That's the environment that the person in this position has to function in. You don't do that without the support of your spouse." He says the job requires long hours, and sometimes gut-wrenching decisions and the emotions that go along with them. "Being able to vent is something that is important and you just can't do that in front of everybody," he said. "I am thankful for Joy and our two sons and their support of my professional career over the last 42 years."

After more than 11 years in his present position, Harper says he remains excited to be part of Basin Electric, and he is optimistic about the organization's future. Basin Electric and its member systems are "positioned to take advantage of what I believe will be a great future," he said. It's a future that will have its challenges, he added, but those tests can be overcome with strong member support.

2. Ron Harper, interview with the author, June 28, 2010.

Chapter 11

Cooperative roots to serve Basin Electric for the future

As the second decade in the new millennium unfolded, Basin Electric faced challenges that would test the leadership throughout the Cooperative's nine-state service area.

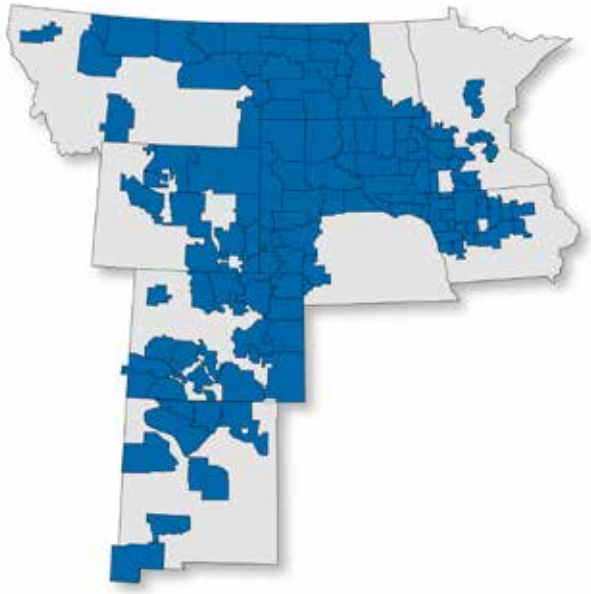
But challenge was an underlying theme throughout the 50-year history of this Cooperative that by 2011 had grown into one of the largest electric generation and transmission cooperatives in the United States.

The parent of eight subsidiaries, Basin Electric was owned by 135 member cooperative systems spread over 540,000 square miles and serving 2.8 million electric consumers in nine states—Colorado, Iowa, Minnesota, Montana, Nebraska, New Mexico, North Dakota, South Dakota, and Wyoming.

The Cooperative had more than 4,300 megawatts of wholesale electric generating capacity in its resource portfolio (see page 214) with more than 3,300 megawatts owned or operated.

Basin Electric's owned or operated facilities included four large coal-fired baseload power plants in North Dakota and Wyoming, oil or gas peaking stations in Montana, South Dakota, Iowa and Wyoming, and wind projects in both North Dakota and South Dakota. A natural-gas fired combined-cycle plant under construction in South Dakota will add 300 megawatts of intermediate power in 2012. In addition, it owned more than 2,000 miles of high-voltage transmission, 66 switchyards and 116 telecommunication sites.

Basin Electric Power Cooperative member systems' service areas in 2011



In five decades, Basin Electric had developed into one of the nation's top electric cooperatives.

Yet there was one issue especially problematic for Basin Electric and other major energy companies: the lack of a national energy policy.

No decision on an energy policy really is a decision on coal, according to a 2010 report to Basin Electric members by Ron Harper, Basin Electric CEO and general manager, and Cliff Gjellstad, Basin Electric

president.[1] They said this lack of a policy means, among other things:

- No clear path exists for domestic energy development and no significant effort toward clean coal development. Utilities will follow an easier path, likely leading to developing more natural gas generating plants in the near term.
- New generation likely will come in increments, with only smaller projects moving ahead.
- The Environmental Protection Agency (EPA) will advance regulations on greenhouse gases and other emissions affecting energy development. This was evidenced by an announcement at the end of 2010 that the EPA was moving unilaterally to clamp down on power plant and oil refinery greenhouse emissions, announcing plans for developing new standards over the next year.[2]

"We, as a nation, are expending far too much time grappling with an uncertain energy policy," reported Harper and Gjellstad. "We should be concerned with providing affordable, reliable and secure energy" for members that includes a diversified portfolio of resources.

To further complicate this energy quandary, an important, longtime source of funding faced increasing political pressure to no longer provide capital for generation and transmission cooperatives like Basin Electric as well as its member cooperatives. From the mid-1930s through the '50s, rural America had become electrified based largely on financial help from the Rural Electrification Administration (REA), the predecessor to the Rural Utilities Service (RUS). Today, the program continues to be important to upgrade and maintain these systems and keep electric rates affordable for sparsely populated regions.

The RUS had been threatened before, but, in 2010, federal budgetary cuts and other measures put access to the RUS in jeopardy again. This came in the form

1. "Strength in Unity: President and General Manager's Report," *Basin Today,* Basin Electric Power Cooperative, November-December 2010, 4.
2. "EPA moving to limit gases," *The Bismarck Tribune,* Dec. 25, 2010, 2.

Basin Electric CEO and general manager Ron Harper and President Cliff Gjellstad pose for their annual report portrait.

of RUS moratoriums on funding fossil-fuel-based generation projects, with the prospect of widening these funding freezes to include all forms of generation that emit carbon dioxide, such as natural gas. "The ongoing pressure on RUS is deeply troubling," said Mike Eggl, Basin Electric senior vice president of External Relations and Communications.[3] "We believe strongly that both the baseload and the natural gas prohibitions should be eliminated."

Historically, the federal government hasn't lost money on the rural electric programs, said Buzz Hudgins, Basin Electric's chief financial officer and senior vice president of Financial Services, who retired in January 2011. "RUS has been very successful in providing low-cost financing for us and affordable power for rural America," he said. "We need this program to continue."[4]

Basin Electric member systems are experiencing significant growth such as oil and gas development, said Steve Johnson, the Cooperative's manager of treasury services. "They will need additional transmission build-out, enlargement of substations, and enhanced reliability.

3. Julie Slag, "Pressure of politics," *Basin Today,* Basin Electric Power Cooperative, May-June 2010, 3.
4. Ibid, 2.

If RUS availability were to be curtailed, distribution cooperatives would need other, more expensive financing," he said, in a *Basin Today* story in 2010.

The job of electrifying rural America goes on, Hudgins said. "We need RUS to help Basin Electric and our members continue to provide affordable power to rural America," he said.

Basin Electric joined with rural electric cooperatives nationwide in a grassroots effort to keep this funding in place, an issue that remained unresolved in early 2011.

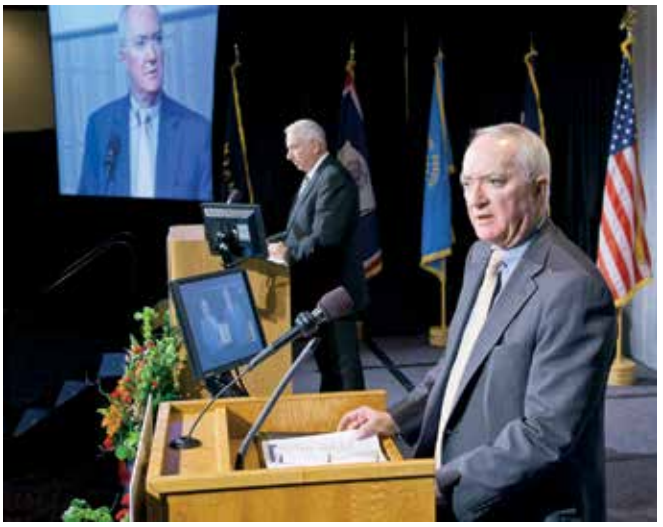
With that funding threatened, rural electric directors now wondered: If RUS financing ended, where would funding come from to sustain rural electric cooperatives in the future? Analysts say money is available on Wall Street, but ironically, "the problem is there is no national energy policy in the United States," leaving the future uncertain for electric cooperatives in rural America, Gjellstad said, at the Cooperative's annual meeting in November 2010.

Sanctuary from the economic storm

Meanwhile, the nation was recovering—though slowly—from its near economic meltdown of 2008-09.

Thankfully, the upper Great Plains fared better than the rest of the country, some calling the region an "island in the storm." Though electricity usage across the country declined in 2010 for the second year in a row, power use in Basin Electric's service area grew, albeit more slowly than predicted. Through this economic turmoil, Basin Electric reported a good financial year in 2009, with the board approving more than $77 million in power bill credits and revenue deferrals to benefit its members. In total, Kermit Pearson, board treasurer, told the Cooperative's 2010 annual meeting, Basin Electric returned more than $582 million to its members in the past 11 years. "All of this—and still working its way through a major construction cycle requiring billions of dollars," said Pearson, a farmer-rancher from South Dakota and director since 1997. "This is truly remarkable."[5]

5. Kermit Pearson and Buzz Hudgins, "2010 Financial Report" Basin Electric Annual Meeting, Bismarck, ND, Nov. 10, 2010.



Kermit Pearson, Basin Electric treasurer and Buzz Hudgins, senior vice president and chief financial officer, deliver the financial report at the annual meeting.

Another financial high note came in late 2010. NCB, a federally insured chartered thrift and a wholly owned subsidiary of National Consumer Cooperative, listed Basin Electric as the largest revenue-earning electric cooperative with 2009 revenues of $1.4 billion. Among 30,000 co-op businesses in the United States, Basin Electric ranked 27th in the report, which is the only one tracking the financials of cooperatives nationwide.

Hudgins gave some perspective to Basin Electric's growth story: "By the end of 2012, Basin Electric will have spent about $3.4 billion (in developing new generating resources), more than doubled its balance sheet and significantly grown and diversified our generation fleet."[6]

The construction program was winding down in early 2011, adding more diversity in generation resources, from a major coal-based power station in Wyoming to wind projects in North Dakota and South Dakota, and gas facilities in South Dakota and Montana. With the last of these facilities online by 2012, Basin Electric projected it could fulfill the power requirements of its members until about 2019.

6. "Basin Electric top electric co-op on NCB list," *Basin Update,* Basin Electric Power Cooperative, Oct. 28, 2010, 1.

But this growth was coming with some pain

Wholesale power rates were going up. For 2011, the average member rate was projected at 45.4 mills per kilowatt-hour, a 2.9-mill increase from 2010 and the fourth rate hike in a row. Still, that rate continued to be one of the lowest wholesale power rates in the country, Harper and Gjellstad reported to members. It also is significantly below the high of 55.6-mills per kWh recorded in 1987 during the Cooperative's first construction cycle.

Throughout this construction program as large sums of capital were borrowed, Basin Electric's bond ratings remained unchanged until early 2011. Fitch Ratings downgraded Basin Electric from a rating of AA- to A+, with a stable outlook, Standard & Poor's downgraded Basin Electric from a rating of A+ to A, with a stable outlook, and Moody's Investors Service changed Basin Electric's A1 rating outlook from stable to negative—all reactions to the stress of Basin Electric's extensive construction program on its financial metrics.

Ironically, a wet weather cycle that helps farmers and agriculture in this case was not improving Basin Electric's financial performance. Increased snowfall and rain were erasing the upper Great Plains drought conditions and greening the landscape better than had been seen in years. The added moisture meant Missouri Basin reservoirs were overflowing, increasing the availability of hydropower in the region. That put cheap hydropower on the market and depressed the price of surplus power, reducing revenues for Basin Electric. As the Cooperative transitioned from its construction phase, the focus would be on operations and on rebuilding the financial strength of the organization, Gjellstad said, at the 2010 annual meeting.

With a few years of higher-than-normal precipitation, the Missouri River system was flush with water. Water was discharged through the Oahe Reservoir's outlet tunnels in September 2010.

Basin Electric puts carbon dioxide capture project on hold

Basin Electric had been championing clean-coal strategies, but in December 2010, the Cooperative announced that its carbon-capture project would be put on hold.

Basin Electric had been hoping such a project at its Antelope Valley Station would help to prove that carbon dioxide could be economically captured from a conventional coal-based power plant. It also could help provide a basis for the industry to invest in coal plants against the backdrop of regulatory efforts to control emissions because of concerns over climate change.

A study showed the demonstration project could cost $500 million, a factor in the subsequent decision to postpone plans. Another issue was recognizing the problem in selling carbon dioxide to the oil industry for enhanced oil recovery as a means of recouping the investment. In its announcement, Basin Electric said the market for those sales are "still developing," and without that there would be additional costs for sequestering the gas underground.[7] "It's imperative that a revenue stream, such as enhanced oil recovery, be available in order to make a project like this viable," Harper said.[8]

In addition, Basin Electric cited the uncertainty of environmental legislation and lack of a long-term national energy plan.

Despite the postponement, Harper indicated the study was worth it. "We now know the required infrastructure, the cost and the integration and operational challenges that will be required to continue developing a carbon

7. "Basin Electric postpones CO_2 capture project," news release, Basin Electric Power Cooperative, Dec. 17, 2010, 1.
8. "Basin shelves carbon capture project,"*Bismarck Tribune,* Dec. 18, 2010, 1B.

A portion of the Rectisol gas processing unit at the Great Plains Synfuels Plant at dusk. The Rectisol unit uses a cold methanol wash to separate the waste gas stream from the synthetic gas stream.

capture technology." He said Basin Electric would work with others in continuing to research storage technology for carbon dioxide.

Meanwhile, the Great Plains Synfuels Plant made headlines around the country for its success. Dakota Gasification Company, the plant's owner and a Basin Electric subsidiary, made its final payment under a 1988 agreement to the federal government.

The $2.1-million payment in September 2010 concluded an agreement under which Dakota Gas bought the plant from the U.S. Department of Energy (DOE) in 1988. DOE acquired the plant after the original owners defaulted on $1.5 billion in federally guaranteed loans.

With these payments, the federal government recouped more than $1.2 billion from the project, combining payments and unused tax credits, said Harper, who serves as Dakota Gas president. "This is truly something that has brought value to the federal government," he said, in an Associated Press story picked up by newspapers nationwide, including the *Seattle Times*.[9]

"The project was a victim of the marketplace and got caught in the financial wave of the 1980s," said DOE's John Panek, in the Associated Press story. "Natural gas prices were about half of what were originally anticipated." Panek said the default on the DOE loan was possibly the largest in the agency's history, but he credited Basin Electric for turning the project around.

Basin Electric's efforts in wind energy also gained national attention at about the same time. The Cooperative received DOE's "Wind Powering America Program" Special Achievement Award for its leadership in wind energy. Wind energy had become an important part of Basin Electric's energy mix.

9. James, MacPherson, "ND synfuels plant makes $7.1 million last payment to feds," Associated Press, http://seattletimes.nwsource.com/html/businesstechnology/2010985239_apndgreatplainspayment.html

By the end of 2011, Basin Electric will have more than 700 megawatts of wind and green generation as part of its energy portfolio and natural gas generation of more than 700 megawatts by the end of 2012, said Harper. "All of this has rounded out a solid energy portfolio, one that is still rooted in coal," he said.[10]

A new look at nuclear power

Basin Electric's generation portfolio also included nuclear as well, thanks to a new member from Iowa, Corn Belt Power Cooperative, which had 10-percent ownership in a 610-megawatt nuclear power plant, Duane Arnold Energy Center. Corn Belt joined Basin Electric in 2009 as a Class A member.

Nuclear power was being elevated in the national consciousness as President Barack Obama focused on reducing carbon dioxide emissions. In 2010, the administration announced a commitment to restarting the nuclear power industry. "Nuclear energy provides clean, safe, reliable power and has an important role to play as we build a low-carbon future," said DOE Secretary Steven Chu.[11]

Nuclear power had been studied for some time by Basin Electric as an option for future power supply. The Cooperative had become involved with several entities in the region to look more deeply into nuclear generation possibilities.

Basin Electric was looking ahead to 2030-40 when its older three major coal-fired, baseload power plants likely would be retired. With a cost up to $10 billion and risks associated with a nuclear plant, a partnership approach would be a must, said Wayne Backman, senior vice president of Generation, at the Cooperative's 2010 annual meeting.

Environmental regulations are driving this new look at the nuclear option, said Dave Raatz, the Cooperative's

10. Andrea Blowers, "We're tripping over the quickstep," *Basin Today,* Basin Electric Power Cooperative, September-October 2010, 1.
11. Secretary Chu Announces Blue Ribbon Commission on America's Nuclear Future," news release*,* U.S. Department of Energy, Jan. 29, 2010, 1.

Harper announces his retirement

Ron Harper, Basin Electric CEO and general manager, advised the Basin Electric board of directors on March 14, 2011, that he would retire at the end of 2011.

In a statement emailed to employees March 15, Harper said, "I have had the humbling honor to have worked in the cooperative program since 1970, but now it is time to take on new adventures in life. I have truly enjoyed the experiences afforded me and my family by the 'person at the end of the line', and will forever cherish the experiences and relationships. Basin Electric is an organization that has been truly blessed with strong support from its membership, is an industry leader and has been blessed with a tremendously dedicated work force driven to help the membership be successful. Basin and its members will continue to face many challenges, but the history of the Basin family has shown that confronting challenges on behalf of rural America is what has made Basin such a great organization.

"You and the board have my strong and direct commitment to continue giving the Cooperative the 110 percent that it deserves," he continued.

"I cannot begin to explain how privileged and humbled I feel to have played a part in Basin's success during my tenure as Basin Electric CEO and general manager. I thank you and the board for that opportunity!" he concluded.

Harper assumed his duties at Basin Electric on April 23, 2000. Harper brought nearly 30 years of experience working with electric distribution cooperatives to Basin Electric.

When Harper joined Basin Electric in 2000, Basin Electric owned 2,370 megawatts and operated 3,323 megawatts of generation for its 118 member systems and others. When he retires at the end of 2011, Basin Electric will own 3,333 megawatts and operate 4,424 megawatts for 135 members and others. Another 300 megawatts of generation, the Deer Creek Station, near Elkton, SD, is under construction and expected to be operating in 2012.

manager of marketing and power supply.[12] Nuclear power plants are reliable baseload generators, but high capital costs meant nuclear power wasn't a viable option in the past, Raatz said. As regulations boost the environmental-control investment in power plants, the nuclear option appears more attractive, he said.

Developing new nuclear generation could take more than 10 to 15 years, but that time period (2020-2025) "makes it fit Basin Electric's resource development alternatives fairly well," Raatz said. "If Basin Electric's load continues to develop and with the uncertainty of what's going to happen with baseload coal resources, Basin Electric needs to continue to monitor developing nuclear technologies and expected costs as nuclear generation could be an economical resource to meet Basin Electric's power supply obligations."

The future: Energy diversity, cooperative unity and a fantastic future

So many uncertainties and yet decisions have to be made.

Against this backdrop, Harper took time in mid-2010 to look into his crystal ball about what the Cooperative would look like in the near and distant future.

Over the next 10 years, he said, Basin Electric will achieve an even more diversified energy portfolio, largely because he anticipates there still will be no clear direction on a national energy policy.

After that, Harper foresees that Basin Electric will have less coal in its energy mix. "We will have less coal because we will be put into a position of making economic decisions because the regulations have driven us from one fuel source to another," Harper said, adding "That concerns me." There will be a push toward more natural gas, spurred by potential energy legislation effectively shutting down coal plants or causing utilities to convert them to natural gas. Moving the country from a largely coal-based generation fleet to natural gas is not where America needs to go ultimately, he said.

By the period of 2030-40, Basin Electric expects to be retiring its older coal-based generation, he said.

Basin Electric has long supported a balanced, diversified approach in devising a national energy policy. "Basin Electric's members can be proud that we have not sat idly by waiting for clarity before taking action," Harper said, referring to the Cooperative's efforts in broadening its energy portfolio beyond coal to include wind, natural gas, renewables and nuclear.[13] With no energy policy action, he also urged rural electrics to take the lead in helping to create a national energy plan.

Meanwhile, leaders at Basin Electric appear both realistic and optimistic as they looked to the future of Basin Electric and the rural electric system.

Gjellstad, Basin Electric's president, stressed the unity of the cooperative model in addressing the 2010 annual meeting. "The American dream has never come easy. The success of the rural electric program is part of that American dream. We are here today—strong, proud and successful—because when it really mattered, we stood together. That's the cooperative difference."

The cooperative really is a "special glue" that binds members together, he said. "So no matter how things may change, one thing does remain the same: the strength that comes from unity of purpose, and the support we have for each other as a wholesale power provider, a member system and a rural consumer," Gjellstad said.

Cooperatives have been the key ingredient to electrifying rural America, but Harper said he has concerns about rural America continuing to shrink along with its representation in Congress. "My fear is that those of us in mid-America and the rural areas are losing more and more recognition," he said. "The cooperatives are going to have to rebuild the grassroots efforts" that provided the success for rural electrics and Basin Electric. "We have to get people to understand that the cooperative business model works, that it brings value."

12. Erin Huntimer, "A new look at proven technology," *Basin Today,* Basin Electric Power Cooperative, September-October 2010, 11-12.

13. "Harper says U.S. energy policy necessary for continued energy growth," news release, Basin Electric Power Cooperative, Nov. 3, 2010, 2.

Still, Harper said he remains hopeful that cooperatives nationwide can muster the grassroots support and effort that they demonstrated during rough times in the past.

The CEO said he is grateful that Basin Electric has such strong membership support, a key to the organization's future. Strong member support is necessary for an organization to be well respected on Wall Street, within the Rural Utilities Service and among congressional delegations, he said. "So what I see is a fantastic future for Basin Electric and its members and the people that make it such a great place to be a part of," Harper said.

Looking back on the success of Basin Electric over a half-century, Harper said those achievements rest on core values focused on integrity. Those accomplishments also can be attributed to the tenacity of those early cooperative leaders in facing trials and obstacles in building and operating the first lignite-fired power plant of that size.[14]

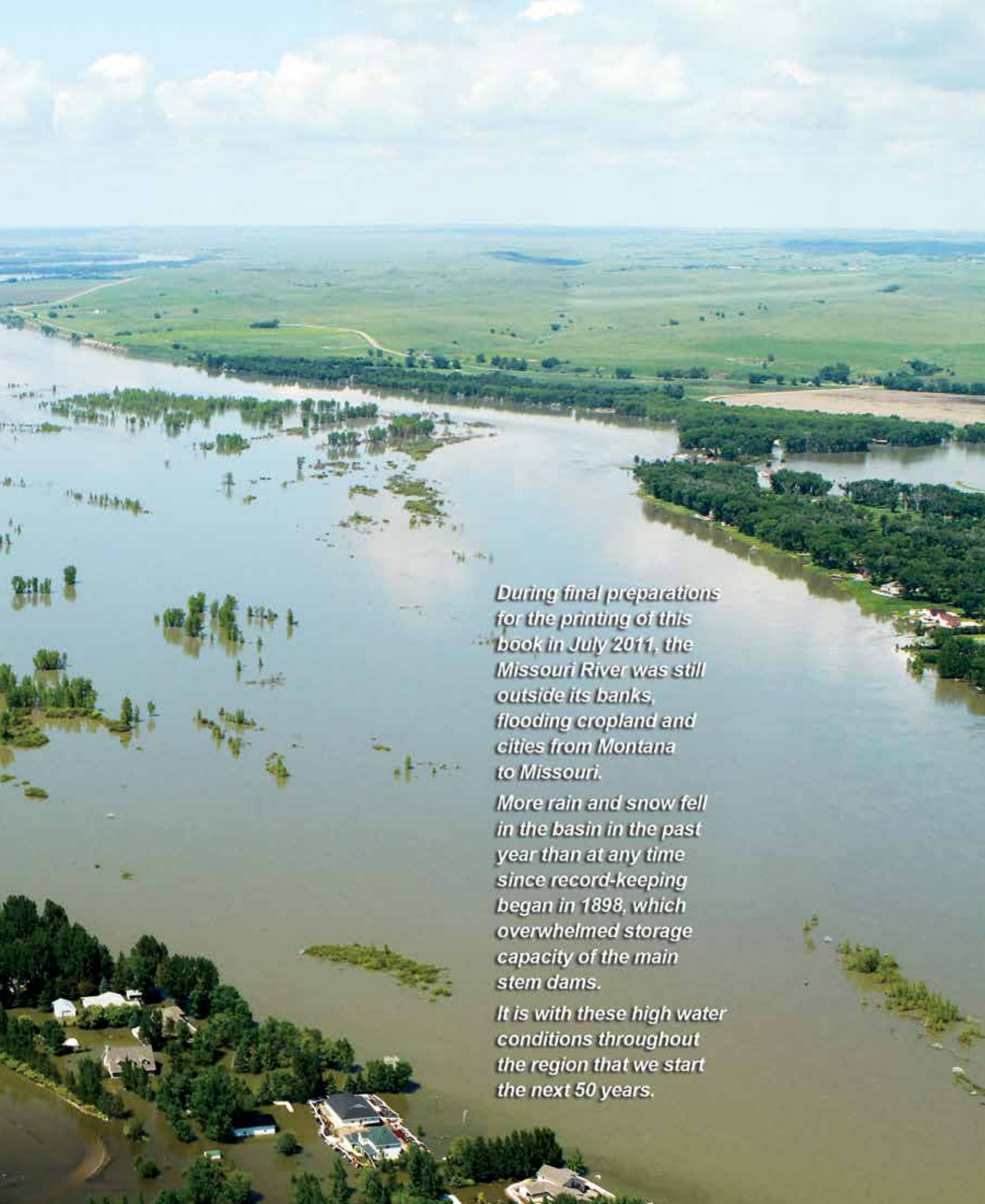
The cooperative way is illustrated in the simple words of Basin Electric's first president, Art Jones, a South Dakota farmer. Documented in the Cooperative's 25-year history book, Jones said, "People working for the benefit of people make a force that is overwhelming. Each of us is a little cog in the wheel and there's no stopping what we can do."

No stopping through 50 years and counting.

Jones and the other pioneers from the plains who helped to make giant power a reality for rural consumers did so by becoming and remaining unified for a common purpose. It was their beliefs that served as the foundation for the birthing of Basin Electric in 1961. And those cooperative beliefs that Basin Electric's leaders believe will serve as the foundation for success in the decades ahead.

14. Ron Harper, interview with the author, June 28, 2010.

Since the region's rural electric cooperatives were all interconnected by the Bureau of Reclamation's transmission called the Missouri Basin system, the founding co-ops decided on the name Basin Electric Power Cooperative.



During final preparations for the printing of this book in July 2011, the Missouri River was still outside its banks, flooding cropland and cities from Montana to Missouri.

More rain and snow fell in the basin in the past year than at any time since record-keeping began in 1898, which overwhelmed storage capacity of the main stem dams.

It is with these high water conditions throughout the region that we start the next 50 years.

TIME

1961

May 5 - Basin Electric Power Cooperative is incorporated at Bismarck, ND, by 69 individuals.

1962

May 10 - REA Administrator Norman Clapp signs papers for a $36.6-million loan to Basin Electric to construct a power generation station.

June 1 - James L. Grahl is named as Basin Electric's first general manager.

July 12 - Basin Electric establishes policy that spoil banks created in strip mining will be leveled to rolling terrain.

Sept. 20 - Basin Electric Board approves selection of a plant site four miles south of Stanton, ND.

Nov. 29 - Basin Electric and the U.S. Department of the Interior sign a contract for rental of capacity in the federal transmission system.

1963

June 24 - More than 8,000 attend the groundbreaking for the power generating station near Stanton, ND.

1965

June 17 - Plans for a second electric generating unit are announced.

1966

Sept. 24 - First generating unit is dedicated and named for Leland Olds, a leader in the effort to develop a regional approach to electric power supply.

1967

Nov. 17 - Cooperative member systems adopt a Statement of Ideals and Objectives.

1968

Oct. 25 - A $97-million loan for Leland Olds Station Unit 2 is approved by REA Administrator Norman Clapp.

Oct. 31 - Basin Electric and the U.S. Bureau of Reclamation sign a contract for coordinated use of hydro- and thermal-electric generating capacity.

1969

September - Federal Power Commission estimates that power consumption will increase more than five times over 1965 consumption.

1972

March 6 - Construction of Leland Olds Station Unit 2 begins.

Dec. 29 - President Nixon changes the direction of the rural electric program by ending the long-standing 2-percent direct loan program.

1973

July 1 - Basin Electric acquires the William J. Neal Station from Class A member Central Power.

July 25 - Basin Electric is designated project manager for the Joint Systems Power Project, later named the Missouri Basin Power Project (MBPP).

LINE

September - Basin Electric announces project with Class A member Tri-State to build a 100-megawatt direct current (DC) tie at Stegall, NE.

Dec. 25 - Congress creates the Federal Financing Bank to coordinate federal borrowing including REA loan programs.

1974

Feb. 19 - The secretary of the Treasury announces a new REA loan guarantee program for rural electric systems.

June 7 - Application is filed with Wyoming Public Service Commission to build and operate the Laramie River Station.

July 9 - Western Fuels Association is formed as a not-for-profit fuel supplier for consumer-owned electric systems. Basin Electric and Tri-State are charter members.

July 11 - Construction begins in Bismarck on a new 60,800-square-foot headquarters building and a transmission operations and maintenance headquarters in Mandan, ND.

Dec. 13 - Basin Electric President Art Jones and Arthur Seder Jr., president of American Natural Gas Company, announce plans to consider a partnership of coal gasification and electric power generation.

1975

Dec. 15 - Unit 2 of the Leland Olds Station starts commercial operation.

1976

June 16 - Dedication ceremonies are held for the second unit of Leland Olds Station and the new headquarters building.

July 12 - Construction begins on the MBPP's Laramie River Station near Wheatland, WY.

Aug. 20 - Groundbreaking held for Laramie River Station.

November - Power requirements studies conducted by member systems show an anticipated annual growth of 9 percent well into the 1980s.

Nov. 24 - The state of Nebraska files a lawsuit alleging the MBPP's Environmental Impact Statement is inadequate on the question of water flows from the Laramie River in Wyoming into Nebraska.

Dec. 7 - Nation's first DC tie is dedicated at Stegall, NE, linking western and eastern transmission systems. Basin Electric leases facility from Tri-State.

Dec. 13 - Construction begins on Spirit Mound Station near Vermillion, SD.

1978

June 14 - Construction begins at the Antelope Valley Station near Beulah, ND

Dec. 4 - MBPP signs an agreement with the state of Nebraska and the National Wildlife Federation clearing the way for completion of the Laramie River Station and Grayrocks Dam and Reservoir. MBPP establishes a $7.5-million trust fund to enhance whooping crane and other wildlife habitat in the Big Bend area of Nebraska.

1980

Feb. 28 - Basin Electric receives an award from the President's Council on Environmental Quality for leadership in developing power plant sulfur scrubbing technology.

June - For the first time, the 1979 member system power requirements study reveals a drop in the projected growth rate. The study showed a 6 percent annual load growth rate through 1988, a drop of 2.5 percent from 1976 projections.

July 1 - Laramie River Station Unit 1 starts commercial operation.

Sept. 6 - The first unit of MBPP's Laramie River Station is dedicated.

1981

July 1 - Laramie River Station Unit 2 starts commercial operation.

Oct. 15 - Basin Cooperative Services is formed as a subsidiary of Basin Electric with responsibility of ownership and management of Glenharold Mine and other non-electric utility functions.

1982

Jan. 1 - Basin Cooperative Services assumes ownership of the Glenharold Mine.

Nov. 1 - Laramie River Station Unit 3 starts commercial operation.

1983

July 1 - Basin Electric assumes construction management of Antelope Valley Station Unit 2.

1984

Feb. 3 - Western Area Power Administration signs agreement allowing them to move 185 megawatts of power it planned to purchase from Basin Electric into California through the use of the Bonneville Power Administration transmission system.

July 1 - Antelope Valley Station Unit 1 begins commercial operation.

July 12 - The Basin Electric board authorizes planning of a Cooperative-wide energy marketing program.

Nov. 19 - Robert McPhail is selected by the board of directors as the Cooperative's general manager to succeed Jim Grahl.

1985

March 17 - Robert McPhail assumes duties as the second general manager of Basin Electric.

April 1 - The William J. Neal Station, Velva, ND, is placed on reserve status for restart on 90-day notice. Most employees transfer to Antelope Valley Station.

May 31 - The Leland Old Station units begin to operate alternately; staff is reduced for one-unit operation.

June 14 - The board of directors approves a streamlining and reorganization of Basin Electric.

July 31 - Great Plains gasification plant owners abandon plant.

Sept. 12 - The Basin Electric board votes to freeze the 1986 wholesale power rate at the 1985 level.

1986

Jan. 1 - Basin Electric begins its 185-megawatt sale to the Western Area Power Administration.

May 5 - Basin Electric is 25-years old.

June - Unit 2 of the Antelope Valley Station begins commercial operation.

1987

Aug. 13 - The board of directors instructs management to study merits of bidding on gasification plant and to provide information to the membership.

Aug. 22 - With the help of Basin Electric, Union REA turns back a takeover bid by an investor-owned utility.

1988

Jan. 1 - Basin Electric has its first-ever rate decrease in its history.

March 18 - Basin Electric submits proposal to purchase gasification plant to U.S. Department of Energy (DOE).

Aug. 5 - The DOE announces that Basin Electric is the successful bidder for the nation's only commercial coal gasification plant.

Sept. 15 - Basin Electric incorporates two wholly owned subsidiaries to purchase the coal gasification plant.

Oct. 31 - Dakota Gasification Company acquires what it will now call the Great Plains Synfuels Plant and Dakota Coal Company will finance and direct the operation of the Freedom Mine.

1989

June 28 - Ground is broken for Dry Fork Mine, which will become a major source of coal for the Laramie River Station.

Oct. 30 - Leland Olds Station returns to service after being placed in reserve since 1987 for all but three months for economic reasons.

1990

March - Dakota Gas makes first revenue-sharing payment to the DOE of $11.1 million.

April 2 - Dakota Gas starts construction of phenol recovery facility at Synfuels Plant.

Aug. 2 - Dry Fork Mine goes into production.

Oct. 12 - Dakota Gas files lawsuit to protect validity of natural gas purchase contracts.

Nov. 21 - DOE intervenes in Dakota Gas lawsuit to protect validity of gas purchase contracts.

1991

Jan. 11 - U. S. District Judge Patrick Conmy dismisses lawsuit filed by Dakota Gas against four pipeline companies that purchase natural gas from Dakota Gas.

Jan. 16 - Dakota Coal Company directors approve building a lime processing plant in Wyoming.

Feb. 16 - The Basin Electric board of directors approves scholarship program.

1992

May 13 - Ground is broken for lime processing plant near Frannie, WY.

May 4 - The Eighth Circuit Court of Appeals reverses a decision dismissing lawsuit filed by Dakota Gas and DOE against four pipeline companies, which remands the case back to District Court for further action.

June 25 - Eighth Circuit Court of Appeals denies the pipeline companies' request for a rehearing.

Oct. 24 - U.S. Congress passes Energy Policy Act of 1992.

1993

Jan. 8 - The U.S. Supreme Court denies a petition for certiorari filed by four pipeline companies to review the May 1992 decision by Eighth Circuit Court of Appeals.

Jan. 23 - Lime plant begins operation.

March 15 - Dakota Gas makes its first cresylic acid shipment to Coalite Chemicals of Derbyshire, England.

March 23 - The North Dakota Department of Health issues a permit to construct a flue gas desulfurization system at the Synfuels Plant.

June 9 - Last shipment of coal is delivered to Leland Olds Station from the Glenharold Mine.

July 14 - Dedication ceremonies are held for lime processing plant near Frannie, WY.

Nov. 17 - Wally Beyer, 30-year manager of Verendrye Electric Cooperative, is confirmed as RUS administrator by the U.S. Senate.

1994

April 7 - Out-of-court settlement announced with pipeline companies that purchase gas from Dakota Gas.

Aug. 27 - U.S. Secretary of Energy Hazel O'Leary speaks at 10^{th} anniversary celebration for Antelope Valley Station and Great Plains Synfuels Plant complex.

1995

Feb. 17 - Board of directors authorizes early retirement program to administrative employees.

Jan. 27 - Basin Electric subsidiary Basin Telecommunications Inc. is incorporated.

March 12 - Leland Olds Station Unit 1 begins 12-week outage to install low-NO_x burners and modern controls.

April 26 - Nominated by Basin Electric, James Grahl is inducted into the Cooperative Hall of Fame in Washington, D.C.

Nov. 17 - A revised bylaw section was approved by the membership that provides the means to add a new membership district if power purchases equal at least 10 percent of total Basin Electric member sales with approval of two-thirds of the membership at a subsequent annual meeting.

Dec. 29 - A federal administrative law judge holds that three of the four pipeline companies obligated to purchase gas from Dakota Gas failed to prove they acted prudently when they reached a settlement with Dakota Gas in 1994.

1996

Feb. 1 - BTI starts providing Internet access in the Bismarck, ND, area.

April 24 - The Federal Energy Regulatory Commission (FERC) announces Order 888 on Open Transmission Access for wholesale power transactions.

June 29 - First flue gas is introduced into new sulfur scrubbing system at Synfuels Plant.

Dec. 18 - The FERC approves 1994 settlements between Dakota Gas and pipeline companies.

1997

July 15 - PanCanadian Petroleum Ltd. signs agreement to purchase carbon dioxide for enhanced oil recovery from the Synfuels Plant.

March 19 - Touchstone Energy® unveiled as national brand for electric cooperatives.

Nov. 4 - Board approves indenture that will give the Cooperative more financial flexibility in an increasingly competitive industry.

1998

Jan. 1 - Indenture becomes effective replacing the Cooperative's standard consolidated mortgage with RUS.

March 8 - Delegates to a special meeting approve changes to the bylaws to create a new Class D membership.

June 22 - Basin Electric begins delivering power to Class D member Corn Belt Power.

Sept. 1 - Basin Electric signs open access tariff for the management and operation of the Integrated System.

Dec. 31 - The North Dakota Public Service Commission approves route for carbon dioxide pipeline.

1999

Feb. 5 - More than 1,000 North Dakota electric cooperative directors, employees and members converged on the state capitol to demonstrate their opposition to SB 2389, which would restrict the right of any city to allow an REC to serve new customers after July 31, 1999.

March 5 - U.S. Secretary of Energy Bill Richardson visits Basin Electric to announce an agreement that may help secure the future of the Synfuels Plant.

May 12 - Groundbreaking held for carbon dioxide pipeline project.

Oct. 2 - William J. Neal Station reunion held; dismantlement of plant starts a few days later.

2000

April 23 - Ron Harper becomes Basin Electric's third general manager.

Sept. 14 - Carbon dioxide begins flowing through the pipeline from the Synfuels Plant to Canada for enhanced oil recovery.

Oct. 19 - Dedication ceremonies held for 205-mile carbon dioxide pipeline.

2001

Jan. 10 - Basin Electric receives first ever wind energy loan guarantee from the Rural Utilities Service.

April 25 - Nominated by Basin Electric, David A. Hamil is inducted into the Cooperative Hall of Fame in Washington, DC.

June 28 - Special meeting of the membership approves a bylaw amendment increasing the revenue deferral to $200 million and extending the period when it must be used from six to 10 years.

Sept. 7 - Groundbreaking ceremonies held for wind project at Chamberlain, SD.

Nov. 3 - Wind project at Chamberlain, SD, is dedicated.

2002

May 1 - Basin Electric issues $15 million in variable rate 30-year bonds, tapping taxable public marketplace for the first time.

Aug. 2 - Groundbreaking ceremonies held for Rapid City direct current (DC) tie.

Aug. 16 - The wet electrostatic precipitator at the Synfuels Plant is dedicated.

Sept. 24 - Dedication ceremonies for Wyoming combustion turbine generators at Hartzog, Arvada and Barber Creek are held at Barber Creek site.

Sept. 16. - Basin Electric announces that it will purchase output of two 40-megawatt wind projects in each of the Dakotas.

Nov. 6 - Two wind turbines near Minot, ND, dedicated.

Nov. 22 - Basin Electric buys out leveraged lease of Antelope Valley Station Unit 1.

Dec 1 - Synfuels Plant reaches a trillion cubic feet of synthetic natural gas after 18 years and 126 days of production.

2003

Jan. 15 - The Coteau Properties Co. submits permit to North Dakota Public Service Commission (PSC) to expand Freedom Mine by 17,051 acres, the single largest permit it ever received.

March 2 - Basin Electric is awarded the Wind Power Cooperative of the Year by the National Rural Electric Cooperative Association.

April 29 - Groundbreaking held for the Wisdom Generating Station Unit 2.

May 1 - Dedication ceremonies held for Native American-owned and -operated, utility-scale "Rosebud" wind turbine from which Basin Electric will buy the output.

Oct. 15 - Rapid City DC tie begins commercial operation.

Oct. 6 - The 40-megawatt South Dakota Wind Energy Center near Highmore, SD, from which Basin Electric will buy the output, is dedicated.

Oct. 14 - The 40-megawatt North Dakota Wind Energy Center near Edgeley and Kulm, ND, from which Basin Electric will buy the output, is dedicated.

Oct. 27 - Rapid City DC tie is dedicated.

2004

Jan. 22 - Basin Electric and its member systems and employees are recognized by New York's City Council for their contributions to the city's recovery effort after the Sept. 11, 2001, terrorist attacks.

March 18 - Wisdom Generating Station Unit 2 achieves "first fire" and is synchronized to the grid the next day.

June 30 - Wisdom Generating Station Unit 2 is dedicated.

Oct. 19 - Western Fuels and Basin Electric, on behalf of MBPP participants, file a complaint to the U.S. Surface Transportation Board (STB) against BNSF Railway.

Dec. 16 - Dakota Gas board approves an additional compressor and booster pump to expand carbon dioxide sales.

Dec. 20 - Basin Electric announces plans to construct a coal-based power plant in the Gillette, WY, area.

2005

April 1 - Five 2-megawatt diesel units, owned by the city of Madison, SD, become available under contract to Basin Electric as peaking resources.

Sept. 19 - Groundbreaking held for 49.5-megawatt Wilton Wind Energy Center from which Basin Electric will buy the output.

Sept. 21 - Basin Electric board approves a donation of $500,000 to the Hurricane Katrina relief effort. In addition 348 employees donated vacation and sick leave that was converted to cash.

Sept. 27 - A surface mining permit for expansion of Freedom Mine is approved by North Dakota PSC.

Aug. 10 - Basin Electric receives Five-Star Recognition for its support of employees in the National Guard and U.S. Army Reserve in North Dakota.

2006

Jan. 5 - Basin Electric receives Five-Star Recognition by the Employer Support of the Guard and Reserve (ESGR) in Wyoming.

Dec. 23 - Dakota Gas issued a renewed Air Pollution Control Title V Permit to Operate by North Dakota Department of Health.

Jan. 14 - Wilton Wind Energy Center declared operational.

Jan. 27 - Expansion project to increase carbon dioxide sales commissioned.

Feb. 13 - Basin Electric board approve installation of emissions control equipment on Leland Olds Station.

March 15 - Basin Electric is ranked eighth in renewable energy sales by the U.S. DOE National Renewable Energy Laboratory.

June 29 - The first recovered energy generation (REG) site at St. Anthony, ND, is energized on Northern Border Pipeline.

July 1 - Groton Generation Station (Unit 1) goes into commercial operation.

Sept. 21 - Groton Generation Station dedicated.

Sept. 28 - New water pipeline begins delivering water to Antelope Valley Station.

2007

April 2 - Basin Electric is ranked sixth in renewable energy sales by the U.S. DOE National Renewable Energy Laboratory.

June 1 - Basin Electric issues Request for Proposal seeking carbon dioxide capture technology.

June 21-22 - CEO Ron Harper attends Carbon Sequestration Leadership Forum Workshop for the Group of Eight (G-8) in Oslo, Norway.

July 31 - Basin Electric purchases land for Dry Fork Station.

Sept. 10 - The Surface Transportation Board rules against Western Fuels and Basin Electric saying they had not shown that the challenged rail rates were unreasonable under the stand-alone cost rate test.

Sept. 25 - CEO Ron Harper testifies before the U.S. House Transportation and Infrastructure Committee regarding rail competition and service.

Oct. 17 - Construction starts on Dry Fork Station near Gillette, WY.

Oct. 22 - Western Fuels and Basin Electric petition Surface Transportation Board to reconsider Sept. 10 decision that denied rate relief from BNSF Railway.

Nov. 2 - Groundbreaking ceremony held for Dry Fork Station.

Nov. 27- 28 - CEO Ron Harper participates in 3rd International Energy Agency and Carbon Sequestration Leadership Forum Workshop for the G-8 in Calgary, Alberta.

Dec. 10 - A new truck dump and rail load out is approved for Montana Limestone Company (MLC).

2008

Feb. 4 - Bush Administration budget seeks to eliminate power supply portion of RUS program in Fiscal Year 2009 budget.

Feb. 13 - Basin Electric directors authorize the creation of two subsidiaries: PrairieWinds ND 1 and PrairieWinds SD 1.

Feb. 28 - MLC purchases 50 percent of the shares of Bighorn Limestone Company, which owns the limestone reserves mined by MLC.

March 12 - STB clarifies February 2008 rail rate decision saying Western Fuels and Basin Electric may use publicly and commercially available data to develop a modified stand-alone cost presentation to address the Average Total Cost methodology.

April 29 - Wyoming Environmental Quality Council denies a motion by environmental groups to suspend construction of Dry Fork Station.

May 1 - Chimney pour begins at Leland Olds Station as part of $410-million project to install additional emissions control equipment.

Aug. 1 - First structural steel erected at Dry Fork Station.

Sept. 30 - Wyoming Environmental Quality Council denies several requests by environmental groups to halt construction on the Dry Fork Station.

Oct. 2 - RUS approves loan guarantee of $325 million for Leland Olds Station emissions control project.

2009

Jan. 15 - USDA approves $300-million loan guarantee to Basin Electric for a carbon dioxide capture project.

Jan. 21 - An air permit to construct was issued by the Montana Department of Environmental Quality for the Culbertson Generation Station.

Feb. 18 - Surface Transportation Board rules that BNSF Railway freight rates to the Laramie River Station unreasonable and unlawful.

March 22 - Dry Fork Station steam drum, weighing 240 tons, is lifted into place about 224 feet at about 23 feet per hour.

March 26 - Both units of the Leland Olds Station are taken off line because of a lack of water for steam production and cooling. Two days earlier, the Army Corps of Engineers stopped releasing water from the Garrison Dam for the first time in history to ease flooding downstream on the Missouri River at Bismarck, ND.

March 31 - Both Leland Olds Stations units are back to full load after Army Corp of Engineers resume water releases from the Garrison Dam.

April 25 - U.S. Secretary of the Interior Ken Salazar visits the Great Plains Synfuels Plant in Beulah, ND.

June 29 - Construction of the Culbertson Generation Station begins after all permits are obtained.

July 1 - U.S. Energy Secretary Steven Chu announced the selection of Basin Electric as a recipient of a $100-million cooperative agreement under the Clean Coal Power Initiative program to help fund a large-scale carbon capture demonstration at our Antelope Valley Station.

July 27 - Surface Transportation Board orders BNSF Railway to establish lawful rates for Laramie River Station coal haul.

Aug. 5 - Antelope Valley Station and the Great Plains Synfuels Plant mark 25 years of operation.

Aug. 13 - Delegates approve bylaw changes at special membership meeting that enabled Corn Belt Power Cooperative to become a new district with a seat on the Basin Electric board.

Aug. 12 - Board of directors approve rate structure for 2010, which projects an average Class A member rate of 42.5 mills.

Aug. 17 - Construction begins on PrairieWinds 1, south of Minot, ND.

Aug. 27 - Final heavy lift completed at Dry Fork Station when the scrubber top cap was lifted onto the air quality control system building.

Sept. 1 - Power deliveries begin to newest Class A member Corn Belt Power.

Sept. 9 - Basin Electric signs a purchase power agreement with NextEra Energy for output of 99-megawatt Day County Wind Project near Groton, SD.

Oct. 31 - Thirty-three additional wind turbines were placed into operation at the Wilton Wind Energy Center, doubling its size.

Dec. 30 - PrairieWinds ND 1 in commercial operation.

2010

Feb. 13 - Basin Electric recognized with the 2009 U.S. Department of Energy's Wind Power America Program's Special Achievement Award.

March 8 - Wyoming Supreme Court affirms air permit for Dry Fork Station.

April 7 - Day County Wind Project operational. Basin Electric has a purchase power agreement with NextEra Energy for its output.

May 18 - South Dakota Public Utilities Commission approve state siting permits for both the Deer Creek Station and a natural gas pipeline to bring fuel to the plant.

June 3 - For the first time in nine years, the Grayrocks Reservoir reaches 100-percent capacity.

June 10 - Montana Limestone Company's truck dump and rail load out facility dedicated.

June 29 - Construction begins on Culbertson Generation Station.

July 1 - Laramie River Station Unit 1 marks 30 years of operation.

July 27 - Construction begins on the 300-megawatt, natural gas fired, combined-cycle Deer Creek Station power plant southeast of White, SD.

Aug. 6 - Dry Fork Station construction workers achieve 5 million safe work hours.

Aug. 11 - The board approves an average Class A member rate of 45.4 mills per kilowatt-hour for 2011.

Aug. 12 - Culbertson Generation Station is dedicated.

Sept. 20 - Dakota Gas makes final revenue sharing payment to DOE of about $2.1 million.

Sept. 22 - Groundbreaking ceremony held for Deer Creek Station.

Oct. 5 - Construction begins on the PrairieWinds SD 1 Crow Lake Wind Project.

Oct. 21 - South Dakota Wind Partners announce that an additional seven turbines will be constructed at the site of the Crow Lake project owned by 611 individual investors in a community ownership model. PrairieWinds will construct the seven turbines and operate them. Basin Electric will purchase the energy produced from the turbines.

Dec. 16 - Duane Arnold Energy Center receives two-year operating license extension from Nuclear Regulatory Commission.

Dec. 17 - Basin Electric puts hold on demonstration project to capture carbon dioxide at Antelope Valley Station.

Dec. 21 - Baldwin Wind Project goes commercial. Basin Electric has a purchase power agreement with NextEra Energy for its output.

2011

Jan. 10 - The 61-mile Williston-to-Tioga transmission line in northwest North Dakota is energized.

Feb. 1 - The Crow Lake Wind Project was deemed commercial. The last turbine was commissioned Feb. 27.

March 14 - Ron Harper informs the Basin Electric board that he will retire at the end of 2011.

May–June - Many consumer-members of the Basin Electric power supply system are dealing with historic floods in Montana, Iowa, North Dakota and South Dakota. These wet conditions impacted the planting of many crops in the region.

Acknowledgments

In addition to the author's acknowledgments in the preface, Basin Electric thanks all of those who granted interviews for this book and the following:

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State Historical Society of North Dakota
North Dakota State Library
South Dakota Art Museum
Williston State College Foundation
Grace Baker
Tracie Bettenhausen
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Andy Buntrock
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Erin Huntimer
Curtis Jabs
Bernice Johnson
Bryan Keller
Becky Kern
Sharon Klein
Mary Klecker-Green
Rod Kuhn
Shelly Kuntz
Kay LaCoe
Nicole Lindseth
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Julie Slag
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Linda Thomas
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Kathy Vetter
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Greg Wheeler
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Kim Wetzel
Kelly Jo Wald

And the current and former employees of Basin Electric, especially the writers, editors, graphic designers and photographers that have contributed to the archives of Basin Electric Power Cooperative over the past 50 years.

Appendix A

Original Incorporators

Alfred Anderson, Bison, SD
Ted Anderson, Mitchell, SD
Norman H. Andrew, Jefferson, IA
Lloyd Aten, Tabor, SD
O. N. Bergman, Jr., Valley City, ND
Leon Birdsall, Berthold, ND
Harvey Bly, Brandon, SD
George Cornog, Linton, ND
Ralph Dennis, Canova, SD
E. J. Dickinson, Le Mars, IA
C. Peter Eggen, Sisseton, SD
Fritjof Fossum, Claire City, SD
Arthur Gabel, Spencer, SD
Roger W. Giles, Lake Preston, SD
O. N. Gravgaard, Hawick, MN
V. T. Hanlon, Madison, SD
Mrs. V. T. (Edna) Hanlon, Madison, SD
Albert C. Hauffe, Leola, SD
Lyle Herriott, Timber Lake, SD
John H. Hubers, Jr., Harrison, SD
George M. Hunter, Madison, SD
John J. Hyde, Creston, IA
John Irving, Mount Ayr, IA
L. H. Jacobson, Rapid City, SD
Charles E. Jewett, Wibaux, MT
Clarence Johnson, Sturgis, SD
Ellwood H. Johnson, Minneapolis, MN
G. T. Johnson, Shadehill, SD
Roger Johnson, Armour, SD
Vernon Johnson, Lake Andes, SD
Arthur Jones, Britton, SD
Elmer Jorgenson, Lemmon, SD
Ransom Knutson, Ralph, SD
Otto Krapf, Cavour, SD
Eddie Lake, Montevideo, MN
Alfred J. Lien, Platte, SD
Dennis Lindberg, Odebolt, IA
Walter M. Lohr, Raymond, SD
Henry Meyerink, Platte, SD
Robert Monkman, Desmet, SD
Harold Nohr, Stanley, ND
Jacob Nordberg, Jacobson, MN
Maynard Opsahl, Carpenter, SD
H. A. Pinkerton, Redfield, SD
Pat Plummer, Baker, MT
R. L. Potts, Columbus, ND
Wm. Raabe, Tyndall, SD
Floyd Rasmussen, Platte, SD
Otto Richter, South Shore, SD
Bernard R. Riley, Salem, SD
Oliver Rose, Nisland, SD
R. M. St. Cyr, Sidney, MT
Ralph A. Sapp, Lake Preston, SD
Leroy D. Schecher, Bison, SD
Otto Schneider, McLaughlin, SD
Harlan Severson, Madison, SD
Walter Smith, Grand Rapids, MN
Richard Stoltenburg, Watertown, SD
Henry Swenson, Columbus, ND
C. R. Thiessen, Lambert, MT
Oscar Torstenson, Dawson, MN
W. H. Van Orsdel, Marion, SD
Donald Waugh, Salem, SD
Herbert Weber, Hazelton, ND
Wm. H. Wisdom, Des Moines, IA
Edward E. Wolter, Anoka, MN
Frank Wright, Turton, SD
Austin Zander, Watertown, SD
Lloyd Zimbrick, Wheaton, MN

The Articles of Incorporation forming Basin Electric Power Cooperative were signed May 5, 1961, at the Patterson Hotel, Bismarck, ND.

Appendix B

Basin Electric Power Cooperative

Each Basin Electric director is elected to represent one of 11 membership districts. These directors have been elected to the boards of their local distribution systems and then, with the exception of Districts 9 and 10, to their respective intermediate generation and transmission systems. Districts 9 and 10, which have no intermediate supplier, are served directly by Basin Electric. These directors also serve on the boards of Basin Electric's subsidiaries.

Cliff G. Gjellstad – President
Roy Ireland – Vice President
Kermit Pearson – Secretary/Treasurer
Gary C. Drost – Assistant Secretary
Don Applegate
Wayne L. Child
Charles H. Gilbert
Dean E. McCabe
Wayne Peltier
Reuben Ritthaler
Roberta Rohrer

Dakota Gasification Company

The Dakota Gasification Company board of directors has seven members. Three are external and do not serve on Basin Electric's board.

Don Applegate – Chairman
Roy Ireland – Vice Chairman
Cliff G. Gjellstad – Treasurer
Wayne L. Child
Heidi Heitkamp – external
Thomas C. Owens – external
Vacant – external

Dakota Coal Company

The Dakota Coal Company board of directors consists of seven members.

Reuben Ritthaler – Chairman
Dean E. McCabe – Vice Chairman
Roberta Rohrer – Treasurer
Gary C. Drost
Charles H. Gilbert
Kermit Pearson
Wayne Peltier

Basin Electric Directors

Clifford G. Gjellstad
President District 3
(Central Power)
2000-

Roy Ireland
Vice President District 7
(Rushmore)
1996-

Kermit Pearson
Secretary/Treasurer
District 1 (East River)
1997-

Wayne L. Child
District 5 (Tri-State)
1985-

Donald Applegate
District 4 (NIPCO)
1997-

Dean E. McCabe
District 8 (Upper Missouri)
2000-

Roberta Rohrer
District 6 (Central Montana)
2004-

Wayne Peltier
District 9
2008-

Charles H. Gilbert
District 11
(Corn Belt Power)
2009-

Gary C. Drost
Assistant Secretary
District 2 (L&O)
1999-

Reuben Ritthaler
District 10 (PRECorp)
2001-

Dakota Gasification Company External Directors

Heidi Heitkamp
2001-

Thomas C. Owens
2001-

Appendix C

Senior Management

Ron Harper
Chief executive officer and general manager

Wayne Backman
Senior vice president of Generation

Michael Risan
Senior vice president of Transmission

Gary G. Loop
Senior vice president and COO of Dakota Gasification Company

Paul Sukut
Chief financial officer and senior vice president

Mike Eggl
Senior vice president of External Relations and Communications

Dave Sauer
Senior vice president of Administration

Claire Olson
General counsel and senior vice president

Robert Bartosh
Senior vice president and COO of Dakota Coal Company and Montana Limestone Company

Appendix D

Former Dakota Gasification External Directors

William L. Guy
1988-2000

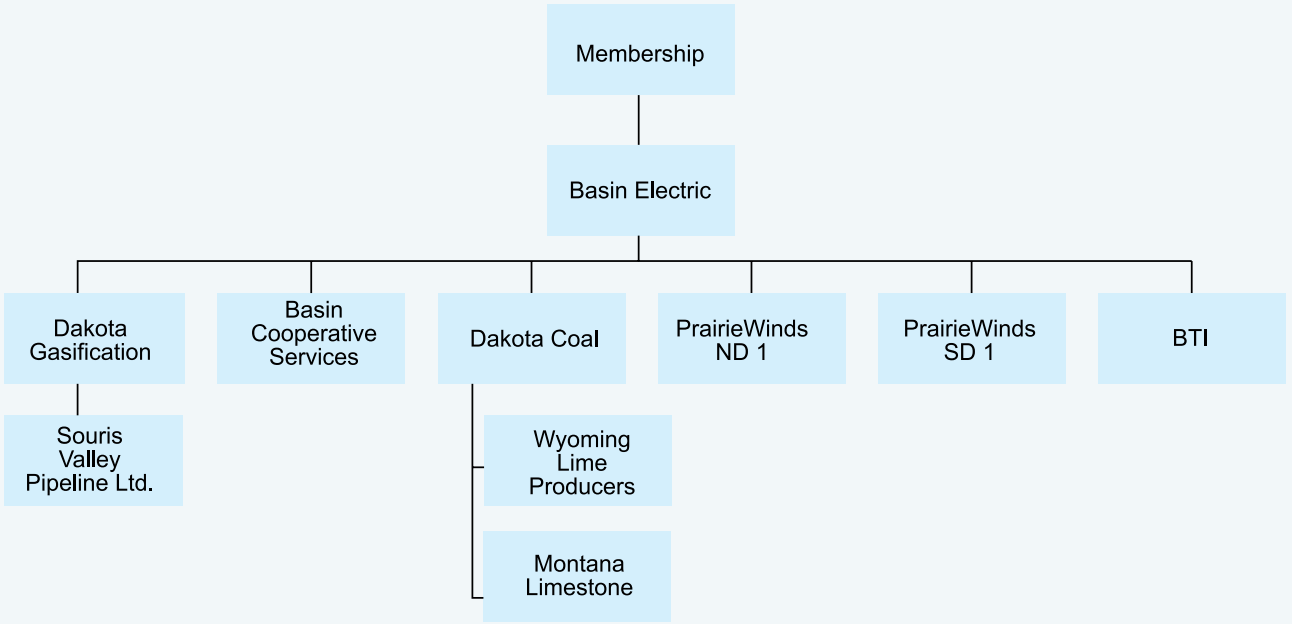
Tom Fennell
1988-2000

David A. Hamil
1989-2002

Robert D. Partridge
1993-2000

Don Porter
2001-2010

Organizational Structure



Appendix E

Former Basin Electric Directors

Arthur Jones
District 1 (East River)
1961-1979

Dennis Lindberg
District 4 (NIPCO)
1961-1986

Otto Schneider
Old District 5
(Grand/Moreau
Grand) 1961-1972

Oliver Rose
District 7 (Rushmore)
1961-1972

C.R. Thiessen
District 8
(Upper Missouri)
1961-1982

O.N. Gravgaard
Old District 3 (Rural
Cooperative Power
Association)
1961-1964

Jacob Nordberg
Old District 6
(Northern Minnesota
Power Association)
1961-1964

Marvin Beyers
District 2 (L&O)
1962-1982

Helge Nygren
District 9
1962-1971

Joe Ridl
Old District 10
(Dakotas Electric)
1962-1964

Wayne Bond
District 5
(Tri-State)
1963-1979

Clarence Welander
District 3 (Central
Power)
1964-1985

Herbert Hafner
Old District 10
(Dakotas Electric)
1964-1965

Herbert Weber
Old District 10
(Dakotas Electric)
1965-1976

Leo Carmody
District 6 (Central
Montana)
1970-1975

Emil Hofer
Old District 5 (Grand/
Moreau Grand)
1972-1973

Quentin Louden
District 7 (Rushmore)
1972-1989

Lloyd Potzler
District 9
1972-1973

Andrew Mork
District 9
1973-1979

Raynalt Kaufman
District 6 (Central
Montana)
1975-1976

J. William Keller
District 6 (Central Montana)
1976-2004

Bill Heth
Old District 10 (Dakotas Electric)
1976-1979

George Hargens
District 1 (East River)
1979-1997

Ransom Knutson
District 9
1979-1980

Fred Schmidt
District 5 (Tri-State)
1979-1983

Jim Frame
District 9
1980-1983

Merrill Sterler
District 2 (L&O)
1982-1999

Morris Douglas
District 8 (Upper Missouri)
1982-1983

Gerard Jacobs
District 8 (Upper Missouri)
1983-1996

Vern Glaesemann
District 9
1983-1983

Abner Boraas
District 9
1983-1984

Harold Hermann
District 5 (Tri-State)
1983-1985

Ray C. Kruckenberg
District 9
1984-2003

Howard J. Carlson
District 3 (Central Power)
1985-2000

Bill Wagner
District 4 (NIPCO)
1986-1997

Leo Grubl
District 7 (Rushmore)
1989-1996

Victor Anheluk
District 8 (Upper Missouri)
1996-2000

Robert Wenande
District 10 (PRECorp)
1996-2001

Eugene Appeldorn
District 9
2003-2008

Tri-State was formerly District 11, but all references in this document have been changed to its current District 5 designation to avoid confusion.

Appendix F

Cooperative Profile

Basin Electric Headquarters

Great Plains Synfuels Plant

Parent Company

Basin Electric Power Cooperative

- A not-for-profit generation and transmission cooperative
- Employs more than 2,000 people with its subsidiaries
- Incorporated in 1961
- Consumer-owned by 135 member systems that serve 2.8 million consumers
- Operates more than 3,500 megawatts (MW) of electric generation
- Energy portfolio: coal, gas, oil, nuclear, wind and recovered energy

Subsidiaries

Dakota Gasification Company

- A for-profit subsidiary of Basin Electric since 1988
- Owns and operates the Great Plains Synfuels Plant (Synfuels Plant), near Beulah, ND
- Gasifies lignite coal to produce pipeline quality synthetic natural gas
- Average gross daily production is 151 million standard cubic feet (MMscf) of synthetic natural gas
- Byproducts and co-product: anhydrous ammonia, ammonium sulfate, carbon dioxide, phenol, crude cresylic acid, krypton/xenon gases, liquid nitrogen, and naphtha
- Owns for-profit subsidiary, Souris Valley Pipeline Ltd.

Souris Valley Pipeline Ltd.

- A for-profit subsidiary of Dakota Gas
- Transports an average of more than 130 MMscf/day of carbon dioxide for enhanced oil recovery in Canada

Freedom Mine

Montana Limestone Company

Dakota Coal Company

- A for-profit subsidiary of Basin Electric since 1988
- Finances and markets lignite coal from the Freedom Mine near Beulah, ND, which is owned and operated by The Coteau Properties Company
- Owns a lime kiln near Frannie, WY, since 1992, managed through a division called Wyoming Lime Producers
- Owns and operates a for-profit subsidiary, the Montana Limestone Company, since 2002

Montana Limestone Company

- A for-profit subsidiary of Dakota Coal
- Operates limestone quarry and owns and operates a fine grind plant near Warren, MT
- Owns 50 percent of the shares of the Bighorn Limestone Company, which owns the surface and limestone reserves that Montana Lime Company mines

Basin Cooperative Services (BCS)

- A not-for-profit subsidiary of Basin Electric since 1981
- Acquires resources and services for electric plant generation

Basin Telecommunications Inc. (BTI)

- A for-profit subsidiary of Basin Electric since 1995
- Provides hosting services and Internet access options to individuals, small businesses and large corporations around the world

PrairieWinds ND 1 Inc.

- A for-profit subsidiary of Basin Electric formed in 2008
- Owns wind projects near Minot, ND, of 123 MW

PrairieWinds SD 1 Inc.

- A for-profit subsidiary of Basin Electric formed in 2008
- Owns a wind project in South Dakota of 150 MW

Appendix G

Owned or Operated Power Resources

Baseload generation

Antelope Valley Station
Beulah, ND
Capacity: 900 megawatts (MW)
Fuel: Coal
Units: 2
Operational: 1984 and 1986

Dry Fork Station*
Gillette, WY
Capacity: 386 MW winter
361 MW summer
Fuel: Coal
Units: 1
Operational: 2011
**Basin Electric has a 92.9-percent ownership share.*

Laramie River Station**
Wheatland, WY
Capacity: 1,710 MW operated
722.8 MW owned
Fuel: Coal
Units: 3
Operational: 1980, 1981 & 1982
***Basin Electric is the operating agent.*

Leland Olds Station
Stanton, ND
Capacity: 670 MW
Fuel: Coal
Units: 2
Operational: 1966 and 1975

Intermediate generation

Deer Creek Station
Elkton, SD
Capacity: 300 MW winter
294 MW summer
Fuel: Gas
Expected completion: 2012

Peaking generation

Culbertson Generation Station
Culbertson, MT
Capacity: 95.8 MW winter
86.8 MW summer
Fuel: Natural gas
Units: 1
Operational: 2011

Earl F. Wisdom Station Unit 2**
Spencer, IA
Capacity: 80 MW winter
78.2 MW summer
Fuel: Natural gas/oil
Unit: 1
Operational: 2004
***Basin Electric owns 50% (40 MW); Operated by Corn Belt Power, Humboldt, IA.*

Groton Generation Station
Groton, SD
Capacity: 201 MW winter
151 MW summer
Fuel: Natural gas
Units: 2
Operational: 2006 and 2008

Spirit Mound Station
Vermillion, SD
Capacity: 120 MW winter
100 MW summer
Fuel: Oil
Units: 2
Operational: 1978

Renewable generation

Minot, ND, and
Chamberlain and White Lake, SD
Nameplate: 288 MW
Fuel: Wind
Turbines: 192
Operational: 2002, 2009 and 2011

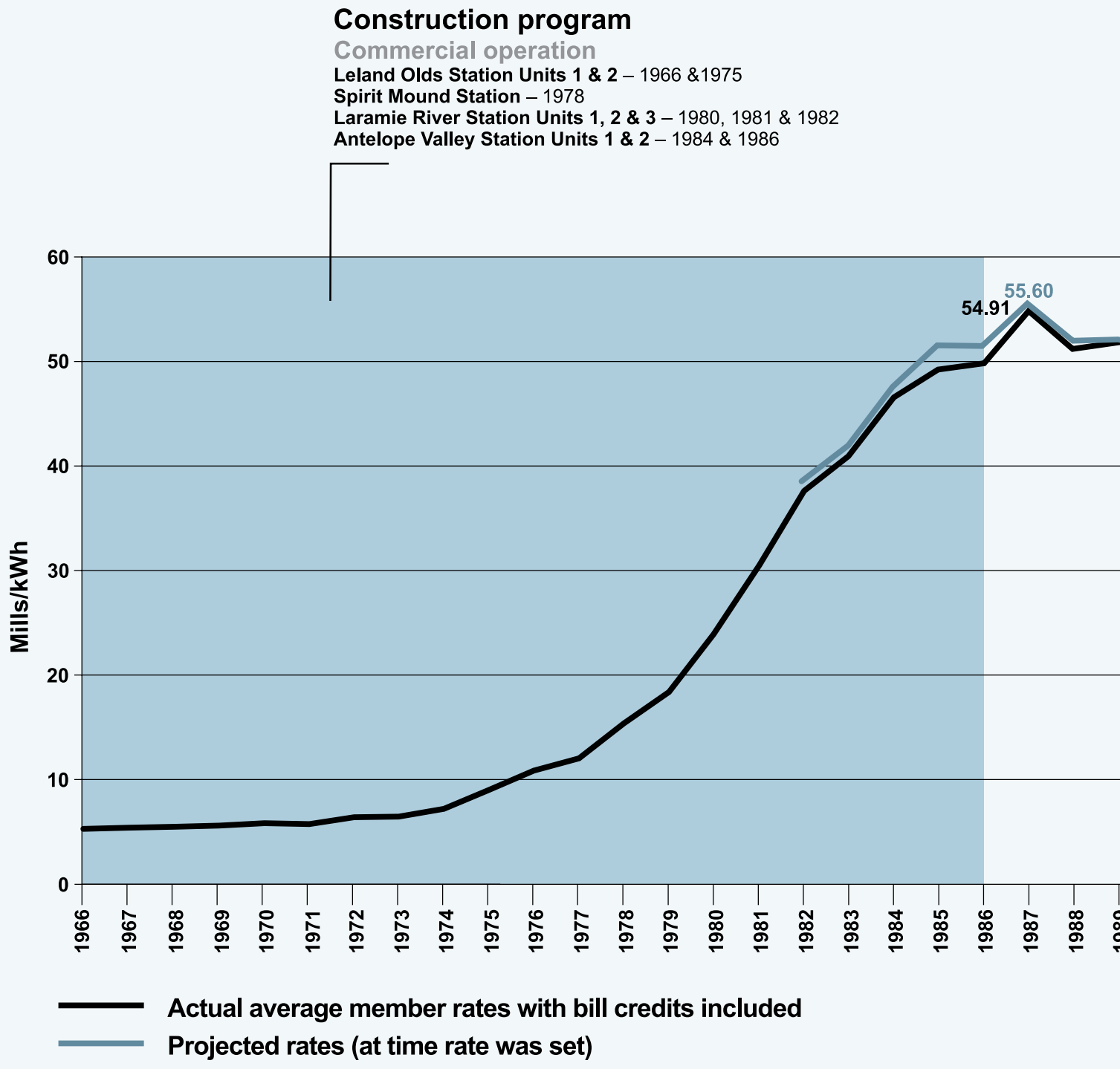
Wyoming Distributed Generation
Hartzog, Arvada and
Barber Creek, WY
Capacity: 54 MW winter
45 MW summer
Fuel: Natural gas
Units: 9
Operational: 2002

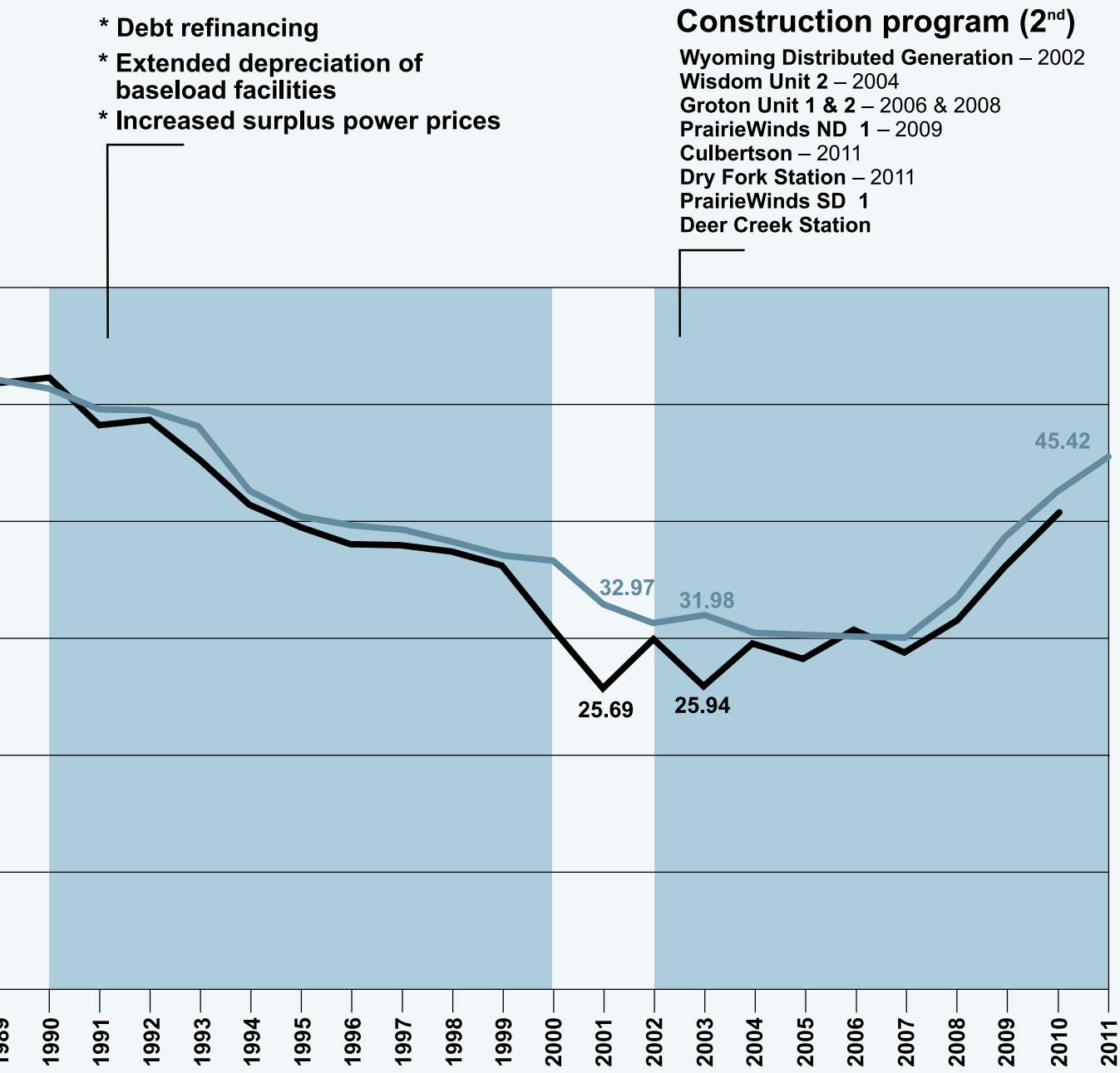
BASIN ELECTRIC RESOURCE PORTFOLIO

TOTAL	SUMMER (MW)	WINTER (MW)
Coal-based generation	3,002.7	2,976.4
Hydro generation	0.0	279.0
Natural gas generation	364.2	425.8
Nuclear generation	75.0	77.0
Oil, diesel and jet fuel generation	157.9	182.1
Biogas generation	1.065	1.065
Recovered energy generation	44.0	44.0
Wind generation	718.9	718.9
Total generation (online EOY 2011)	4,363.6	4,704.2
Owned generation	3,333.3	3,437.4
Purchased generation	1,030.3	1,266.8
Committed projects (2011 and beyond)	294.0	300.0

In 2010, renewable and green generation (wind and recovered energy generation) equaled 8.7 percent of the total energy mix. The actual renewable energy attributes (green tags or renewable energy credits) of much of that generation were sold to others. Environmental attributes may not be claimed unless those attributes are assigned to the power as green or renewable. Coal-based generation equaled 88.1 percent of the total energy mix.

Rate History




* Debt refinancing
* Extended depreciation of baseload facilities
* Increased surplus power prices
Construction program (2nd)
Wyoming Distributed Generation – 2002
Wisdom Unit 2 – 2004
Groton Unit 1 & 2 – 2006 & 2008
PrairieWinds ND 1 – 2009
Culbertson – 2011
Dry Fork Station – 2011
PrairieWinds SD 1
Deer Creek Station
45.42
32.97
31.98
25.69
25.94
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Appendix I

Statement of Ideals and Objectives

This Statement was initially adopted by the Membership at the 1967 Annual Meeting.

It has been reviewed and readopted by the Membership at each subsequent Annual Meeting through 2010.

Basin Electric Power Cooperative was organized by its member systems in the Missouri Basin to provide an adequate wholesale supply of dependable, low-cost electric power under democratic member control, consistent with the public interest.

We believe:

1. That a healthy agricultural economy, based on the family-owned and operated concept of farming and the greater development of rural areas, is essential to the nation's general welfare.

2. That an adequate, universally available and safe supply of affordable electricity is a vital ingredient for maintaining and improving the economy and the people's standard of living.

3. That a clean and healthy environment, which we all need and enjoy, must be maintained and that the energy industry must do all that is feasible to minimize the negative impacts on the environment.

4. That the development of commercial and industrial type enterprises is very important to the Cooperative and efforts should be made to support this type of consumer-member.

5. That the Rural Utilities Service program of providing long-term, low-interest loan funds and loan guarantees to the rural electric cooperatives is a vital element in providing lowest possible cost electricity for the social and economic benefit of people ever undertaken by our federal government, and that this program should be continued as an important device to foster the economic development of rural areas and to help improve the standard of living of its consumer-owners.

6. That water and power development in the Missouri Basin should go hand-in-hand and that the Missouri River as well as coal are our region's foundation resources for both water and power development. Therefore, further power development should be planned and carried out in unity with optimum development of the river on a Basin-wide basis; making optimum use of our water and fuel resources, protecting the integrity of the regional high-voltage transmission system and contributing equitably to further irrigation and other water development.

7. That the benefits of the development of our national resources should accrue to the people and that the federal government has the principal responsibility for establishing and maintaining programs and policies to protect the public interest in the multipurpose development, conservation, and use of our water and power resources.

8. That our Cooperative was established for all its members and the benefits of its operation should accrue to them on a consistent and uniform basis.

9. That people have the right to organize themselves to provide needed goods and services; that cooperatives and their associated entities can provide a yardstick of

costs which benefit all consumers; and that they are consistent and help preserve our private enterprise system.

To these ends, we pledge ourselves to the following objectives:

1. To provide our members with an adequate supply of wholesale electric power and high quality of service at the lowest possible cost by:

   a. Making optimum use of the federal hydroelectric generating plants and the integrated system so that these facilities continue to serve as the backbone of a region-wide power supply system.

   b. Planning jointly to meet the combined needs of all members of the integrated system to take full advantage of the economics of modern power technology by building feasible generating units at the most advantageous location and planning transmission lines on a coordinated, regional and national basis.

   c. Fully coordinating the operations of thermal generating plants with the federal hydro system to optimize the region's water and energy resources while maintaining an economic and adequate power supply.

   d. Developing mutually beneficial power pooling and interchange arrangements with other power supply systems.

   e. Encouraging prudent development of clean and efficient power technologies, and legislation and research in the fuels and energy fields as it affects our lives and our environment.

   f. Operating the Cooperative's energy production facilities in the most efficient, productive, and safe manner possible consistent with moral and legal obligations to protect civilization and the environment.

2. To maintain a competent staff of dedicated employees by establishing policies that provide challenging careers and fair compensation, and that recognize their rights and responsibilities.

3. To conduct the business affairs of the Cooperative as the trustee for the interest of the members on a basis of honesty and equity.

4. To help promote area development throughout the Cooperative's service area by working with our member systems in the planning and execution of programs to help develop the natural, human, and economic resources within the region, and to encourage conservative and efficient use of electrical energy.

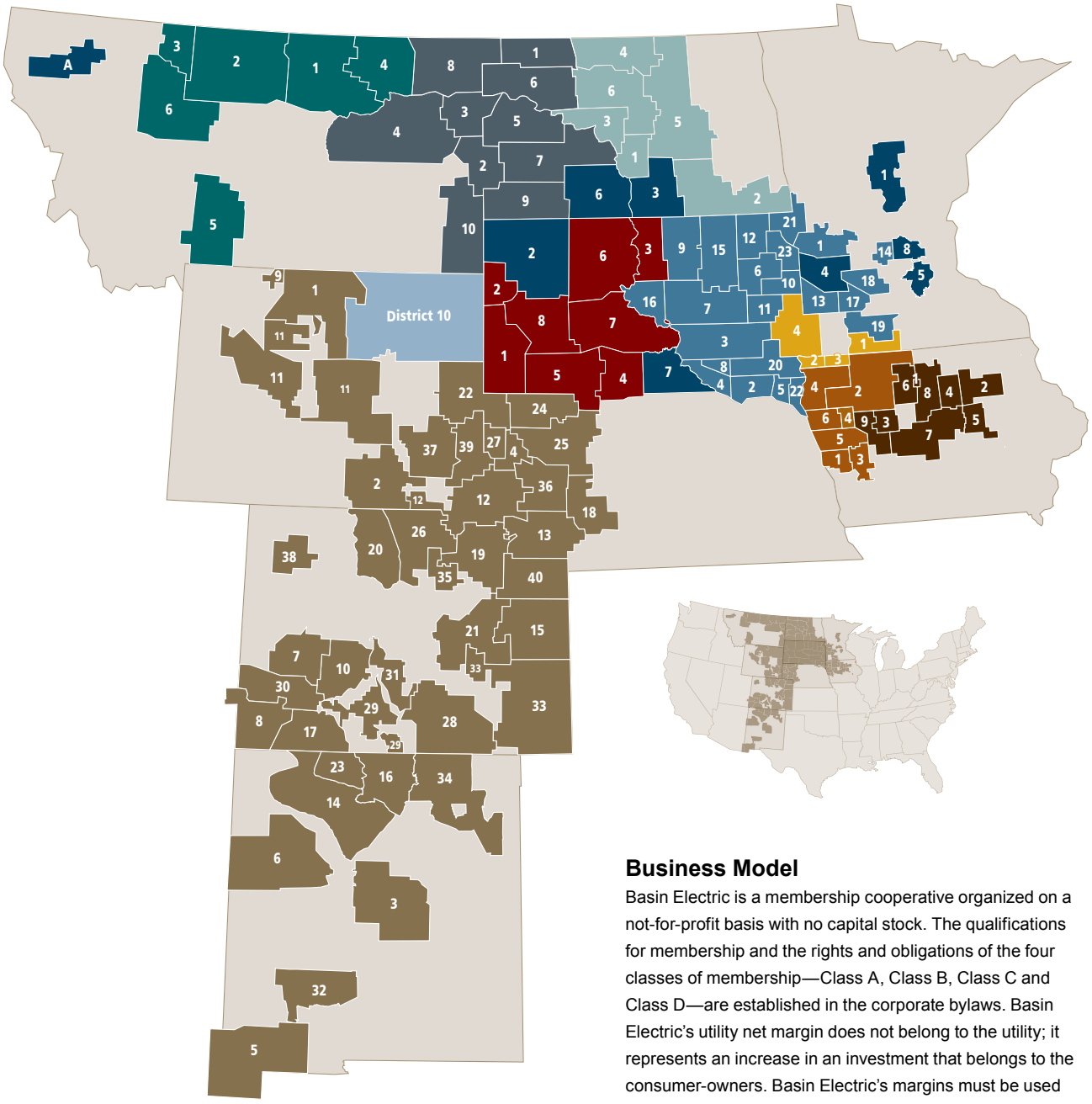
5. To conduct a vigorous communication and education program to promote the Cooperative's policies, plans, and progress among employees, members, and the general public.

6. Whenever requested and feasible, to aid other rural electric cooperatives, public agencies, and consumer-controlled organizations to obtain adequate wholesale power at the lowest possible cost.

7. To encourage development of and work with consumer-owned and other organizations having similar objectives.

Appendix J

Basin Electric Service Area Map



Business Model

Basin Electric is a membership cooperative organized on a not-for-profit basis with no capital stock. The qualifications for membership and the rights and obligations of the four classes of membership—Class A, Class B, Class C and Class D—are established in the corporate bylaws. Basin Electric's utility net margin does not belong to the utility; it represents an increase in an investment that belongs to the consumer-owners. Basin Electric's margins must be used to improve or maintain operations, set aside in reserves or distributed to the membership.

District 1 Kermit Pearson

East River Electric Power Cooperative
Madison, SD

1 Agralite Electric Cooperative
2 Bon Homme Yankton Electric Association
3 Central Electric Cooperative
4 Charles Mix Electric Association
City of Elk Point, SD
5 Clay-Union Electric Corporation
6 Codington-Clark Electric Cooperative
7 Dakota Energy Cooperative
8 Douglas Electric Cooperative
9 FEM Electric Association
10 H-D Electric Cooperative
11 Kingsbury Electric Cooperative
12 Lake Region Electric Association
13 Lyon-Lincoln Electric Cooperative
14 Meeker Cooperative Light & Power Association
15 Northern Electric Cooperative
16 Oahe Electric Cooperative
17 Redwood Electric Cooperative
18 Renville-Sibley Cooperative Power Association
Sioux Valley Energy
19 South Central Electric Association
20 Southeastern Electric Cooperative
21 Traverse Electric Cooperative
22 Union County Electric Cooperative
23 Whetstone Valley Electric Cooperative

District 2 Gary C. Drost

L & O Power Cooperative
Rock Rapids, IA

1 Federated Rural Electric Association
2 Lyon Rural Electric Cooperative
3 Osceola Electric Cooperative
4 Sioux Valley Energy

District 3 Cliff G. Gjellstad

Central Power Electric Cooperative
Minot, ND

1 Capital Electric Cooperative
2 Dakota Valley Electric Cooperative
3 McLean Electric Cooperative
4 North Central Electric Cooperative
5 Northern Plains Electric Cooperative
6 Verendrye Electric Cooperative

District 4 Don Applegate

Northwest Iowa Power Cooperative
Le Mars, IA

1 Harrison County Rural Electric Cooperative
2 Iowa Lakes Electric Cooperative
3 Nishnabotna Valley Rural Electric Cooperative
4 North West Rural Electric Cooperative
Western Iowa Municipal Electric Association
5 Western Iowa Power Cooperative
6 Woodbury County Rural Electric Cooperative

District 5 Wayne L. Child

Tri-State G&T Association
Denver, CO

1 Big Horn Rural Electric Company
2 Carbon Power & Light
3 Central New Mexico Electric Cooperative
4 Chimney Rock Public Power District
5 Columbus Electric Cooperative
6 Continental Divide Electric Cooperative
7 Delta-Montrose Electric Association
8 Empire Electric Association
9 Garland Light & Power Company
10 Gunnison County Electric Association
11 High Plains Power
12 High West Energy
13 Highline Electric Association
14 Jemez Mountains Electric Cooperative
15 K.C. Electric Association
16 Kit Carson Electric Cooperative
17 La Plata Electric Association
18 Midwest Electric Cooperative Corporation
19 Morgan County Rural Electric Association
20 Mountain Parks Electric
21 Mountain View Electric Association
22 Niobrara Electric Association
23 Northern Rio Arriba Electric Cooperative
24 Northwest Rural Public Power District
25 Panhandle Rural Electric Membership Association
26 Poudre Valley Rural Electric Association
27 Roosevelt Public Power District
28 San Isabel Electric Association
29 San Luis Valley Rural Electric Cooperative
30 San Miguel Power Association
31 Sangre De Cristo Electric Association
32 Sierra Electric Cooperative
33 Southeast Colorado Power Association
34 Springer Electric Cooperative
35 United Power
36 Wheat Belt Public Power District
37 Wheatland Rural Electric Association
38 White River Electric Association
39 Wyrulec Company
40 Y-W Electric Association

District 6 Roberta Rohrer

Central Montana Electric Power Cooperative
Great Falls, MT

1 Big Flat Electric Cooperative
2 Hill County Electric Cooperative
3 Marias River Electric Cooperative
McCone Electric Cooperative
4 NorVal Electric Cooperative
5 Park Electric Cooperative
6 Sun River Electric Cooperative

Cooperatives that buy power from two districts are identified by number in their voting district.

District 7 Roy Ireland

Rushmore Electric Power Cooperative
Rapid City, SD

1 Black Hills Electric Cooperative
2 Butte Electric Cooperative
3 Cam Wal Electric Cooperative
4 Cherry-Todd Electric Cooperative
5 Lacreek Electric Association
6 Moreau-Grand Electric Cooperative
7 West Central Electric Cooperative
8 West River Electric Association

District 8 Dean E. McCabe

Upper Missouri G&T Electric Cooperative
Sidney, MT

1 Burke-Divide Electric Cooperative
2 Goldenwest Electric Cooperative
3 Lower Yellowstone Rural Electric Association
4 McCone Electric Cooperative
5 McKenzie Electric Cooperative
6 Mountrail-Williams Electric Cooperative
7 Roughrider Electric Cooperative*
8 Sheridan Electric Cooperative
9 Slope Electric Cooperative
10 Southeast Electric Cooperative

District 9 Wayne Peltier

1 Crow Wing Power
2 Grand Electric Cooperative
3 KEM Electric Cooperative
4 Minnesota Valley Cooperative
Light & Power Association
5 Minnesota Valley Electric Cooperative
6 Mor-Gran-Sou Electric Cooperative
7 Rosebud Electric Cooperative
8 Wright-Hennepin Cooperative Electric Association

Class D Members

A Flathead Electric Cooperative
Wyoming Municipal Power Agency

District 10 Reuben Ritthaler

Powder River Energy Corporation
Sundance, Wyoming

District 11 Charles H. Gilbert

Corn Belt Power Cooperative
Humboldt, IA

1 Boone Valley Electric Cooperative
2 Butler County Rural Electric Cooperative
3 Calhoun Rural Electric Cooperative
4 Franklin Rural Electric Cooperative
5 Grundy County Rural Electric Cooperative
6 Humboldt County Rural Electric Cooperative
Iowa Lakes Electric Cooperative
7 Midland Power Cooperative
8 Prairie Energy Cooperative
9 Raccoon Valley Electric Cooperative
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