

NETWORK

Fall 2011



Hands-on learning at Tri-State



TRI-STATE GENERATION AND TRANSMISSION ASSOCIATION, INC.

A Touchstone Energy® Cooperative





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Fall 2011

Network Magazine is a quarterly publication that tells the stories of the people and communities of Tri-State Generation and Transmission Association and our 44 member rural utilities. Tri-State is a wholesale power supplier serving electric cooperatives in Colorado, Nebraska, New Mexico and Wyoming.

Tri-State and our member cooperatives are powering rural residences, farms, ranches, businesses and industries. While we operate the power plants and maintain the power lines that deliver electricity, it is the member-consumers who provide the energy and spirit that sustain our communities. To learn more about Tri-State, visit www.tristategt.org.



A Touchstone Energy® Cooperative



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General Manager's message

Securing resources for a solid future

Ken Anderson
Executive Vice President/General Manager

The shared success that Tri-State and our member co-ops have experienced over the past six decades can be attributed to many factors, not the least of which is the proven stability and effectiveness of the cooperative business model.

There are many characteristics that provide strength to cooperatives, including the willingness to work together toward mutual goals, develop innovative solutions to various challenges and maintain a strong sense of self-reliance and resiliency. In fact, those are some of the key cornerstones on which electric co-ops were originally formed.

One area that particularly illustrates Tri-State's self-reliance has been our ability to secure and maintain an efficient and stable electric generating resource portfolio to effectively serve our member systems' long-term power requirements. Our strategy in doing so over the years has been primarily twofold: to serve adequately the member loads as they have continued to grow while managing the numerous risks that are inherent in the electric utility marketplace.

Toward that end, earlier this fall we entered into agreements to acquire two major resources that are aimed at providing our members with future long-term certainty.

In mid-September, Western Fuels-Colorado — our fuel supply cooperative of which Tri-State is the majority owner — agreed to purchase the Colowyo Mine in northwest Colorado. Western Fuels-Colorado already delivers coal produced at Colowyo to our nearby Craig Station under contract with the mine's former owner, Rio Tinto. But owning the facility itself will ensure a reliable and affordable, not-for-profit supply of fuel for the power plant to the extent of its useful life.

The acquisition of Colowyo has an impact greater than just on Tri-State's operations. In the larger scheme, it also strengthens the energy economy in northwest Colorado with high-value jobs and significant property tax payments, during a time

when the state's coal mining industry has fallen out of favor in the eyes of many legislators and special interest groups.

In fact, a recent economic impact study of the power plant and area mines identified a \$428 million annual direct and indirect economic output value of Craig Station that supports 752 direct and indirect jobs with a payroll of nearly \$55 million. Those are powerful numbers that energize the economy as well as our member-consumers at the end of the line.

Shortly after the Colowyo purchase was made public, we announced the purchase of a 272-megawatt natural gas-fired combined cycle generating facility in Fort Lupton, Colo. This is the same facility from which Tri-State has been buying 150 megawatts of power under a tolling agreement since July of 2009. We'll continue to provide Xcel Energy with 122 megawatts of capacity from the station through 2019.

The plant, which originally came online in 1994, helps meet our need to add intermediate generation to Tri-State's fleet and provides us with important load-following capabilities in a high-growth part of our system. The workforce of approximately 23 plant personnel currently works under an operations and maintenance agreement with a third party that runs through June of 2012. It is our intention to explore the best scenario and timing to transition them into Tri-State's workforce.

Tri-State's board and management staff view both of these opportunities as a means to further strengthen and diversify our resources while managing against future risk and volatility. Credit is due to our directors for their leadership, as they thoroughly reviewed and made important decisions that will positively impact our member systems, their member-owners and those who live and work near these facilities.

Going forward, we will continue to explore and develop future resource opportunities, while keeping open our fuel and technology options to pursue projects that ultimately provide the most benefit to our membership.

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Dry Fork powers up

Dry Fork Station, a 385-megawatt facility owned and operated by Basin Electric Power Cooperative (Bismarck, N.D.), began cranking out kilowatts in August from its location six miles north of Gillette, Wyo.



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New HQ on Wyoming's High Plains

After nearly 60 years at the same location, Tri-State member High Plains Power (Riverton, Wyo.) has a new home.



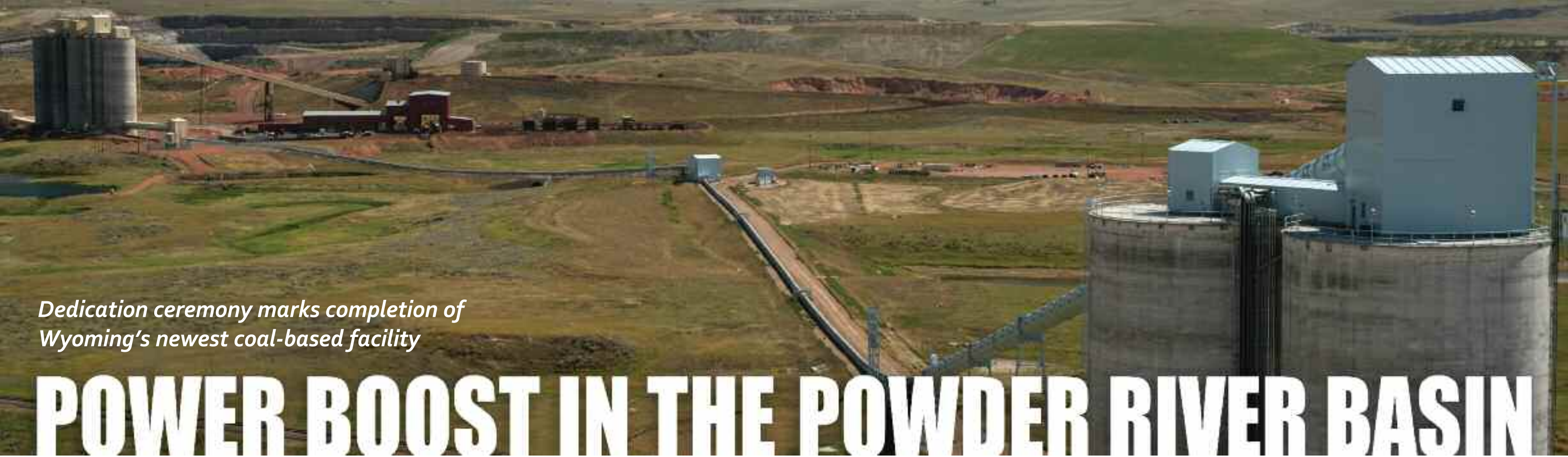
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Teachers in training

Tri-State partners with its member co-ops and the Keystone Center for Education to provide training to co-op area teachers on the subject of climate change.



Cover: Jean Davis, a teacher at Cloudcroft High School in Cloudcroft, N.M. (Otero County Electric Cooperative) and Lea Leyba, a teacher at Chama Elementary School in Chama, N.M. (Northern Rio Arriba Electric Co-op) participate in a greenhouse science experiment during Tri-State's teachers conference.



Dedication ceremony marks completion of Wyoming's newest coal-based facility

POWER BOOST IN THE POWDER RIVER BASIN



Lab technicians at Dry Fork Station remove coal samples to be used in a mercury optimization study.

Right: Wyoming Gov. Matt Mead addresses a crowd of nearly 1,100 at the Dry Fork Station dedication ceremony that took place in August.

*Story by Nicole Carlson
Photos by Stephen Collector*

The Cowboy State is now home to one of the cleanest coal-based power plants in the country. Dry Fork Station, a 385-megawatt facility owned and operated by Basin Electric Power Cooperative (Bismark, N.D.), began cranking out kilowatts in August from its location six miles north of Gillette, Wyo.

More than \$336 was invested in environmental controls during construction of Dry Fork Station and about \$5 million will be spent annually to operate those controls, which include a reflux circulating fluid bed dry scrubber — the largest of its type in the nation.

In addition to touting state-of-the-art environmental controls, Dry Fork Station utilizes an extremely efficient method of fuel delivery. A conveyor belt approximately one mile in length delivers sub-bituminous coal from the nearby Dry Fork Mine, also partly owned by Basin Electric. The proximity of the adjacent mine is ideal for this unique delivery system, eliminating the need for costly rail transportation, which will significantly cut operating costs at the plant.

Another distinctive feature of the operation is Dry Fork Station's steam cooling mechanism — an air-cooled condenser — which differs from traditional cooling towers typical of steam-driven generators. The system acts like a giant radiator, lower-

ing the temperature of the steam to create water without losing volumes to evaporation.

The light-blue power plant — a color known as “Basin blue” — is the G&T's first coal-based power plant to begin operation in 25 years. The 385 megawatts of baseload power generated from the plant will power the equivalent of about 300,000 homes. Tri-State is a Class-A member of Basin Electric and, as a result of the additional capacity provided by Dry Fork Station, will purchase 75 megawatts from Basin under a long-term power purchase agreement.

As a testament to the importance of Dry Fork Station, nearly 1,100 gathered in August for the facility's dedication ceremony. Gov. Matt Mead and other national and state dignitaries were in attendance for this milestone event and Basin Electric's CEO and general manager Ron Harper emceed.



Harper acknowledged that the completion of Dry Fork Station was a major accomplishment and stated the organization is “quite proud of that.”

During the construction of Dry Fork Station, the workforce peaked at more than 1,300 construction workers from more than 36 states. Impressive is the fact that these workers invested 6 million man-hours without one lost-time accident. The facility now employs 83 full-time workers.

Speaking at the dedication, Gov. Mead said that Dry Fork Station provides low-cost electricity that helps maintain a quality of life. “Megawatts fuel the American dream,” he said. “Coal from Wyoming has fueled many American dreams.”

Wyoming is the number one coal-producing state and provides 41 percent of the nation's coal. “Coal is part of our past, present and most absolutely part of our future,” said Mead. “Our country needs our coal.”

Mead recognized the timing of the completion of Dry Fork Station, which coincides with the closing of a number of U.S. coal plants. “It's grand to see a power plant up and running in the midst of other coal plants across the country being shut down,” he said. “We hope this is a sign of many more to come.”

The need for the power plant was first identified in 2002. Studies projecting Basin Electric's long-term power requirements showed a need for additional electrical generation by 2011. After an extensive analysis of the region's transmission grid, alternative sources of fuel and water and workforce



Dry Fork Station Facts

- Coal-based electric generating station located near Gillette, Wyo.
- Fueled by adjacent Dry Fork Mine
- Construction began in October 2007
- Operational in 2011
- 83 permanent employees
- Owned by Basin Electric Power Cooperative and the Wyoming Municipal Power Agency
- One unit, 385-megawatt net capacity
- Project cost: \$1.35 billion
- \$345 million invested for environmental controls

availability, the G&T selected a plot of land north of Gillette as the preferred location for the new generating facility. The project was announced in December 2004 and a groundbreaking ceremony took place on Nov. 2, 2007.

“As the Wyoming governor, it's a wonderful thing to see this type of thing happening,” said Mead of the completion of Dry Fork Station. “Things are being built, things are being done and things are being produced.”

Top: A conveyor belt, nearly one mile in length, delivers coal to Dry Fork Station from nearby Dry Fork Mine. The unique delivery system eliminates the need for costly rail transportation.

High Plains' new HQ eases growing pains

Story and photos by Nicole Carlson

After nearly 60 years at the same location, Tri-State member High Plains Power, Inc. (Riverston, Wyo.) has a new home. The co-op's employees spent the first days of fall settling into their new building, just three miles south-east of the previous office location.

The new facility provides much needed additional space for the employees and equipment, according to Jeff Hohn, general manager of High Plains Power.

The 47,000-square foot building sits on a 17-acre parcel of land purchased years ago by the co-op's board of directors with the intention of someday housing the co-ops' main office. With 18,000-square feet for the administrative building, the facility alleviates the issues with the former location.

"We outgrew our current facility," said Hohn. "Some offices had multiple occupants and we just didn't have enough space here for all of our employees."

Space limitations of the previous office site forced the co-op to house its pole yard at an alternate location, five miles outside of Riverston. The new building eliminates the need for the separation, improving efficiency, travel time and costs.

Additionally, the 29,000 square-foot warehouse provides enough room to house the co-op's entire fleet of vehicles.

"The new site allows us to have our materials stored at the same location as our administration building," Hohn said. "And, with more space, the mechanics are able to perform maintenance that was previously done out-of-house due to space constraints."



"The new site allows us to have our materials stored at the same location as our administration building."
— Jeff Hohn



High Plains Power customer interaction includes a choice of inside or outside at the new facility.



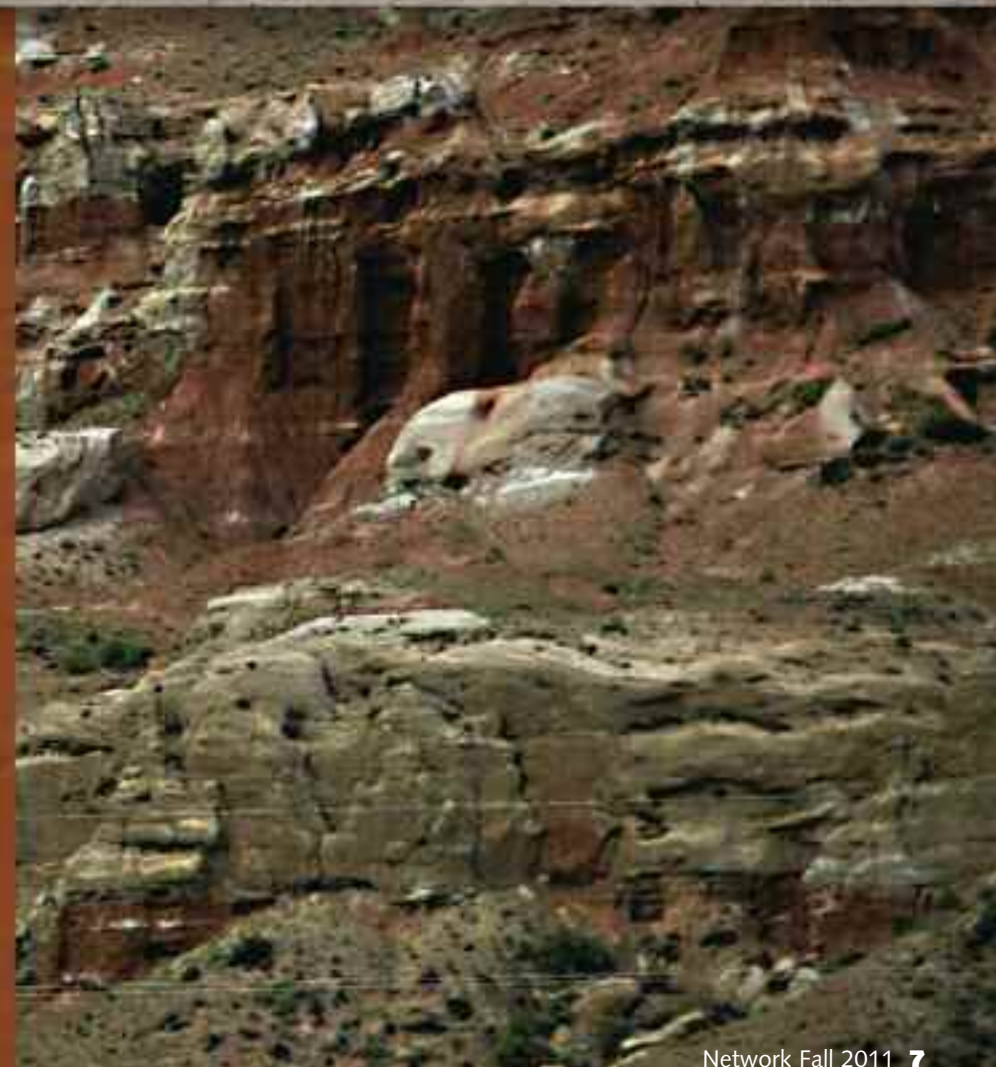
In addition to more space, the new facility includes the addition of a new endeavor for the co-op: drive-through service. A drive-up window will allow the co-op's members to conduct business from the comfort of their drivers' seats.

Additional building features include an employee break room (something that was missing from the old location), an outside patio area, enhanced security features and motion-censored lighting. With the addition of a new, larger board room, the co-op will also be able to provide a meeting space for area non-profit groups.

High Plains Power also has offices in Dubois and Thermopolis. The cooperative has a 12,500-square-mile service territory, serving approximately 12,700 members. The majority of its members are industrial (68 percent) and of those, the primary loads served by the co-op power oil and gas operations.

Left: A contractor puts the finishing touches on lights in the new warehouse building.

Above: Members of High Plains Power now have the option of doing business from their vehicles with the addition of a drive-up window at the rear of the co-op's new building. Of course, members are still welcome to come inside.



Teachers make the grade at Tri-State

Story by Mary Peck

Photos by Mary Peck and Stephen Collector

Driven by their inherent quest for knowledge and mission to provide high-quality education to students within their co-op communities, more than 25 middle and high school teachers descended upon Tri-State's Westminster headquarters this past summer for a multi-day training event presented by the Keystone Center for Education and sponsored by Tri-State.

The nonprofit Keystone center provides teachers and students with original opportunities to gain skills that help them excel in their professional and civic endeavors and provide innovative and practical benefits to society. One of the center's many program offerings is an interdisciplinary middle-level curriculum designed to explore the issue of global climate change.

"In today's unprecedented era of environmental awareness and seemingly endless flow of information, we wanted to provide an unbiased, valuable educational opportunity for teachers in our co-op member service areas to investigate the many factors related to climate change," said Ken Anderson, Tri-State executive vice president and general manager.

Tri-State's member managers helped identify

"With the issue of climate change, I was impressed that they covered the data on both sides and encourage people to form their own conclusions,"

— Rob Taylor

and recruit interested teachers, and every state in the association's service territory was represented at the conference. Participants traveled from as far away as High Plains Power in northern Wyoming and Otero County Electric Cooperative in southern New Mexico.

"The hands-on training that the teachers received was accepted with such enthusiasm and appreciation . . . one for the opportunity of professional development and two, for the connection to their local coop and the generosity of their support," said Gigi Dennis, Tri-State's senior manager of external affairs.

The one-of-a-kind professional development institute, titled "CSI: Climate Status Investigations," was developed with the U.S. Department of Energy and National Energy Technology Laboratory to equip teachers with the knowledge, skills and confidence to investigate global climate change with their students. A handful of teachers outside Tri-State's member system family and interested rural cooperative professionals also took advantage of the educational opportunity.

"With the issue of climate change, I was impressed that they covered the data on both sides and encourage people to form their own conclusions," said Rob Taylor of Mountain Parks Electric.

The program addresses national educational standards from multiple disciplines and integrates



Co-op educators schooled in climate change

science, math, social studies and language arts subjects.

"This is a great combination of education and industry," said Lisa Hart, a math and science teacher from Crested Butte, Colo.

The curriculum was presented by five professional Keystone Center staff from across the U.S. and involved a great deal of interaction and hands-on lab activities, including:

- identifying the hypotheses of others as they relate to an environmental problem
- analyzing an environmental issue from the viewpoints of a variety of interested parties
- gathering and interpreting data
- using technologies to process information
- identifying ways to take action on environmental issues

"The caliber of the teachers here is impressive," said Alex Buhayar, who attended as a volunteer consultant with member Mountain Parks Electric (Granby, Colo.). "With the concern over

A tour of the National Renewable Energy Lab located in Golden, Colo., was a highlight of a two-and-a-half day teacher conference sponsored by Tri-State G&T and presented by the Keystone Center for Education.

Below: The teachers began the conference with a group opinion activity, during which they learned how to provide a safe environment for students to share opinions about controversial topics and to understand the opinions of others.





schools budgets, it's also noteworthy that the industry is doing something good."

The training material was relevant and timely, and will enable teachers to help their students understand current events that affect them every day. "They're excited by the topic and because many are teaching different levels and different subjects in smaller rural schools, the interdisciplinary unit is really helpful," said Elusia Andrus, event coordinator for the Keystone Center.

The gathering itself provided valuable opportunities for the educators to share best practices and form professional connections with teachers from other rural communities. It concluded with a tour of the National Renewable Energy Laboratory in Golden. Teachers left the conference with background information related to the lessons and ready-to-use materials for students to use in the classroom. "What I'll do is go back and share this with my colleagues," said Jerry Wonderly, an 8th grade science teacher from Alliance, Nebraska. "I just wish we had more time," he said.

"This group is upbeat, positive and good problem solvers. They're open to the material and are already talking about how to apply it to their lesson plans," said Carman Mason, a Keystone instructor and 7th grade teacher from Keller, Texas.

The Keystone staff will be available to the attendees year-round to answer questions and the teachers will have access to online support from the facilitators and their colleagues. Each teacher's represented co-op contributed \$250, which Tri-State matched with another \$250, for the purchase of classroom lab supplies. Tri-State also sent new safety glasses home with the teachers for their students to wear when conducting lab experiments.

"Science supplies are expensive and my budget for next year is already spent. The generosity of Tri-State and my co-op is incredible," Hart said.

Left: Teachers from across Nebraska, Wyoming, New Mexico and Colorado took part in engaging hands-on lab experiments that incorporated social studies, science, math and language arts curriculum.

Right: In the "Let the Chips Fall Where They May" activity, teachers learned how to teach students to apply the concepts of ice core analysis to measure atmospheric CO₂ concentrations from 1006 A.D. to 1978 A.D.

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— Carman Mason



Focus on community



G&T 'steers' toward supporting youth in agriculture

For the sixth consecutive year, Tri-State, several of its Colorado Touchstone Energy member co-ops and CREA (Colorado Rural Electric Association) teamed up to sponsor the Junior Livestock Sale at the Colorado State Fair, which took place Aug. 26 - Sept. 5 in Pueblo.

This year's auction raised nearly \$415,000, with the top spot going to 13-year-old Cody Huwa and his 1,359-pound grand champion steer, Rooster, which brought in \$53,000. Cody is an active third-generation farmer/rancher living outside of Roggen, Colo., in Weld County, where both his father (Brent) and grandfather (Richard) are long-time consumers of Tri-State member co-op Morgan County REA (Fort Morgan, Colo.).

The Junior Livestock Sale is the largest 4-H and FFA event of its kind in Colorado. The sale is instrumental in supporting the future of Colorado's agribusiness as it demonstrates to youth the importance of raising quality livestock and the work required of those who pursue careers in agriculture.

WINTER

In our next issue . . .

Tri-State member Poudre Valley REA (Fort Collins, Colo.) is well along in a multi-year major project to convert its entire system to a smart meter network that will bring major savings and efficiency benefits to its 36,000 consumers at the end of the line. The new metering system, scheduled for completion in 2014, will also allow consumers to access their energy use and billing data. Learn more about this cutting-edge technology in the next issue of Network magazine.

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Co-op Country

The 9th Annual National Radial Engine Exhibition took place earlier this fall at the Colorado Plains Regional Airport in Akron, Colo. The area's largest air show attracted roughly 5,000 spectators and featured a display of radial engine aircraft from the 1920s to the 1950s, the U.S. Army parachute team, a pyrotechnic show, car show, radio-controlled airplanes and more. The area's local electric co-op, Y-W Electric Association, and Tri-State were among the event's many sponsors.