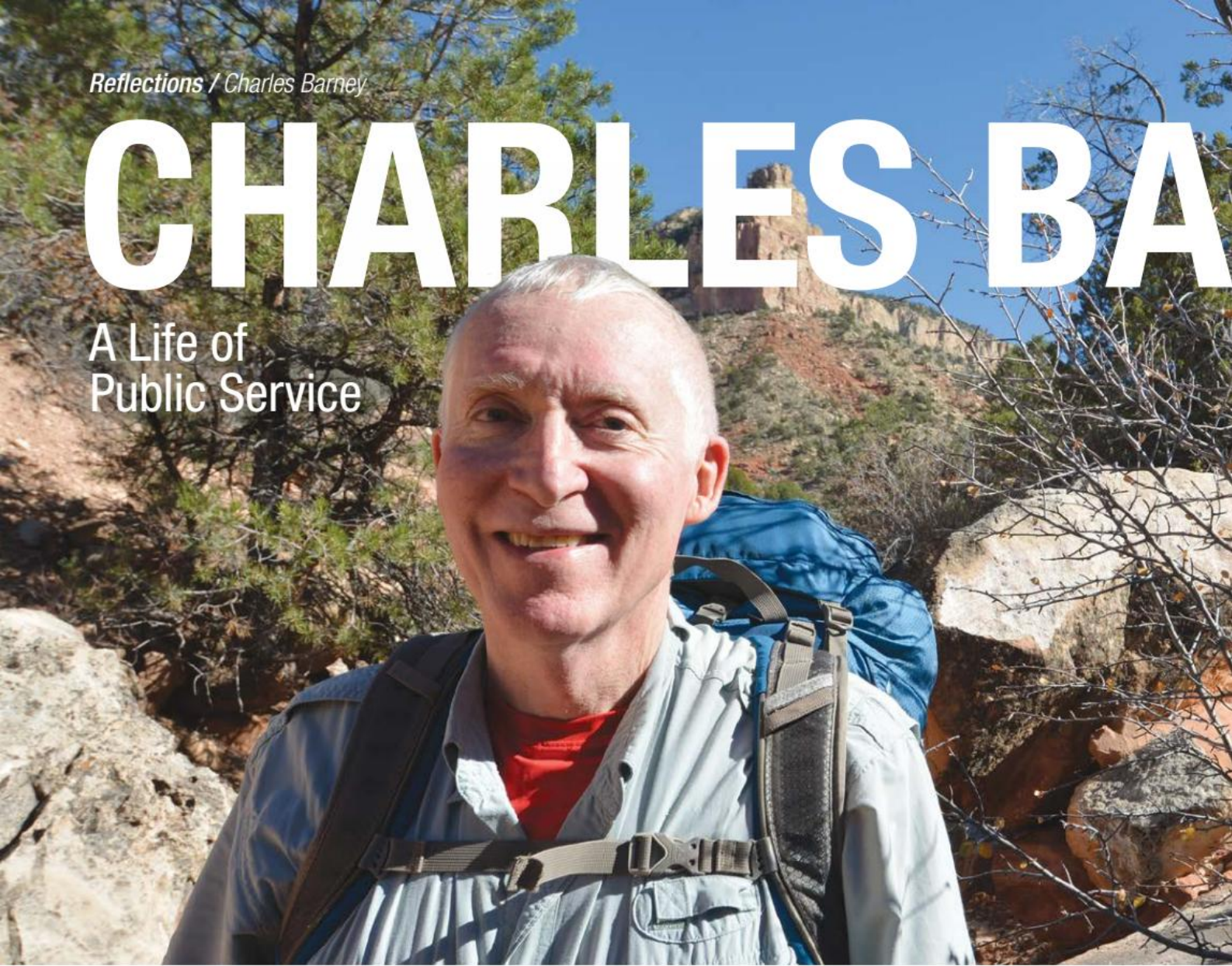


CHARLES BA

A Life of Public Service



When invited by NCTA to write a “Reflections” article, my first reaction was “no thanks, too busy.” I retired from Grand River Dam Authority (GRDA) two years ago but still have a full plate. To be happy, one needs reasonably good health and the time to do what one prefers. Upon reflection, GRDA’s membership in NCTA benefited both me and GRDA’s customers. The presentations we listened to and the people we met helped us. Writing this article is an opportunity to recognize NCTA and say thank you to our colleagues.

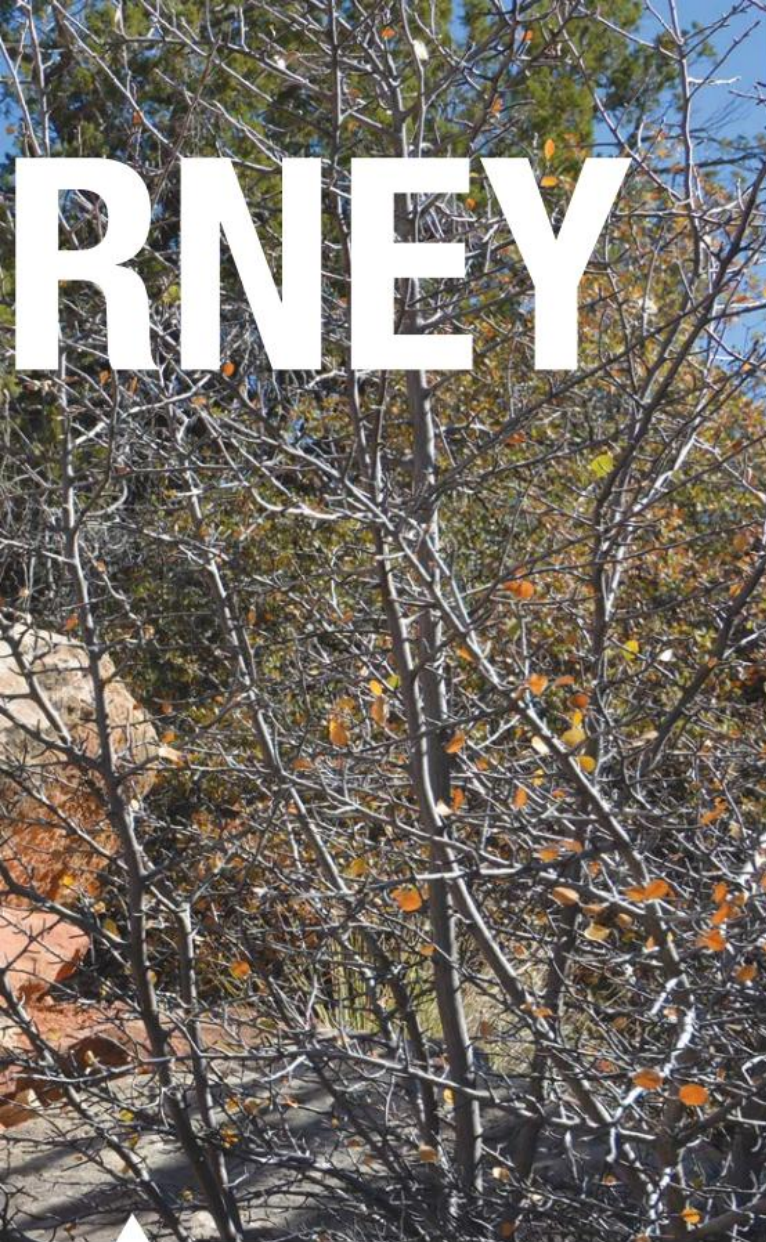
Relocation, Relocation, Relocation

I graduated from engineering school at the University of Arizona and stayed to complete a master’s program in energy system design. I was fascinated with the many technologies necessary to create a power plant and decided to make a career of it. Also, public service work appealed to me. I was hired by Arizona Public Service (APS) and worked on various engineering projects for the Four Corners and Cholla coal-fueled plants. It was a time of great flux in the electricity business. I was promoted to engineer at the Ocotillo plant in Tempe and later to superintendent of the Saguaro Power Plant near Tucson. I liked this plant management

work better than pure engineering, as one can achieve big things with a team, especially if you are the lead dog. I was then asked to relocate as superintendent of the West Phoenix Power Plant. This plant had steam turbines, gas turbines, and three GE combined-cycle units set up to burn No. 6 oil. As an engineer, I was in paradise! Economics were compelling to convert the combined-cycle units to gas firing. In short order, these units went from “never run” to “run all the time.”

Subsequently, my management again asked me to relocate to be Operations Superintendent for the Cholla coal-fueled plant in northern Arizona. It was explained to me that the energy future for APS was coal and nuclear, and the old oil/gas plants would soon be closed. (LOL—they are still operating today!) At Cholla we were later asked to do a test burn of PRB coal, as it was much lower cost than local coal. I was initially against it, as we were not set up for PRB coal and it had a reputation for plugging up boilers. Eventually, we agreed to do a train-load test burn on one of the four coal units. All went well for three days. Fortunately, I had instructed operators to always hide behind structure when starting or stopping a pulverizer. A pulverizer tripped and, upon restart, a violent explosion completely blew off the inlet duct work. The involved operator had hidden behind an I-beam column and

RNEY



Hiking at Monument Point in 2018

reported, “You said this was Black Thunder coal, but you didn’t say it was gunpowder.” This hard lesson led me to always be vigilant on safe practice with PRB coal.

APS soon reorganized itself to become a subsidiary of Pinnacle West Capital Corporation, with financial objectives to pursue non-regulated opportunities in real estate development and banking. Unfortunately, some of these ventures didn’t go well. For example, MeraBank was purchased and thereafter announced major losses. The federal government then required Pinnacle West to inject millions into this insolvent bank, as Pinnacle West was now deemed responsible. Other major investments had to be written off as their markets collapsed. Also, interest rates were rising, and the cost to build the Palo Verde nuclear plant escalated. To help with this financial situation, expenses were cut at APS. At Cholla we laid off 30% of our employees, including all training instructors. To make matters worse, an adversarial EPA relationship resulted in me spending one-third of my time responding to investigations.



The GRDA Board on a 1992 PRB tour

Opportunity Knocks

In 1988, an opportunity came up to manage the Coal Fired Complex for the Grand River Dam Authority in Oklahoma. What a change for the better! The GRDA is a state agency, but its Board of Directors is chosen to represent its various customer groups. Decision making was usually nimble and weighted toward keeping customer costs low. General Manager Ron Coker was an expert negotiator, and my boss Jack Marcy was equally astute. You would be unwise to get into a money poker game with Jack, and his only apparent “vice” was golf.

GRDA’s relationship with NCTA began around 1984. At that time, NCTA was still called the Western Coal Transportation Association (WCTA). A GRDA board member attended a WCTA event and heard a presentation by Mike Loftus of the rail specialist law firm Slover & Loftus. At the time, GRDA had concerns with its coal transportation costs, which were 80% of the overall delivered cost. Our board member suggested contacting Slover & Loftus. Over time, their advice helped GRDA negotiate an improved long-term rail delivery contract. To gain leverage, GRDA purchased rail track right of way and prepared engineering drawings. With such leverage, a new rail delivery contract was negotiated that over time saved GRDA customers many millions of dollars. GRDA learned that when railroads compete for business, customers get the best value, but you must have competition or alternatives. Since that initial referral, from time to time, Slover & Loftus attorneys have helped GRDA navigate a number of difficult rail transportation issues.

Jack Marcy attended most WCTA events. He worked with WCTA Executive Director Bob Kessler until 1994 and then with Tom Canter until Jack’s retirement in 1998. From 1989 to 2005, coal-fueled generation at GRDA was baseload and relatively routine. Occasional coal delivery issues arose due to flooding or extreme cold. Teamwork with coal mines and railroads was good. GRDA purchased coal from all of the PRB producers, but over time Peabody won GRDA’s business. Our Board of Directors made visits to the PRB mines and marveled at the amazing efficiencies of both the railroad and coal mines. Peabody’s mine superintendent, Dave Ott, is remembered as customer oriented, and Sales Manager Kim Roach was always reliable, honest, and accurate. Thank you, Kim! We encouraged our customer groups to take tours of GRDA’s Coal Fired Complex.



Peabody's Kim Roach (third from left) on a 2012 PRB mine visit



GRDA CEO Dan Sullivan in 2012

A common question was, "Why are we hauling coal 1,100 miles from Wyoming? Why not use local coal and natural gas?" I always bragged on the amazing efficiency of the railroads in moving massive amounts of low-cost coal to benefit Oklahomans.

During an NCTA event in Colorado Springs, I went on the NCTA-arranged bus tour of the Association of American Railroads' Transportation Technology Center in Pueblo, Colorado. On this trip I met photographer Lee Buchsbaum, who was taking photos of the event for NCTA. Lee had obvious artistic talents and terrific ideas for how to better communicate with GRDA customers on the value of PRB coal and railroad delivery. Subsequently, GRDA engaged him to design the visitor education room we used for customer tours. One of his panel board designs led off with, "Coal—America's Energy." Lee also took amazingly beautiful photos of all of our generating facilities. Today, the GRDA media department still uses the images he created. Thank you, Lee!

Many NCTA members know Nick Keys, currently working for DTE Energy. Nick was originally a geologist working on coal mine design, after which he migrated to working for coal companies. Nick and I became friends at NCTA through a shared interest in wilderness hikes, especially the Grand Canyon. Nick is a Ph.D expert on the Grand Canyon's geology, but he is even more skilled at predicting the behavior of coal company executives and coal pricing. Thank you, Nick, for your past advice and opinions. You are always right!

Negotiating with the Railroads

With the cost of diesel fuel rising, GRDA at one point was asked to add a new fuel surcharge to our long-term rail delivery contract, which already included indices that accounted for fuel cost increase. With this new fuel surcharge, GRDA would be charged twice for fuel cost increases. Negotiations were initially not successful. Delivery of coal to the plant began to slow and restricted its operation. Then, a friend of GRDA warned that a train set would soon receive special handling. Shortly after, the location

of one train set went dark. Telephone inquiries failed to find it. GRDA then searched all tracks starting in Oklahoma and found the train set in a Nebraska cornfield. A new rail delivery contract was eventually negotiated that was satisfactory to the parties. However, the ensuing rancor hurt what had been a great partnership. As many NCTA members will attest, a good partnership with railroads is needed but not always possible.

Part of the new contract with the railroads was to convert from steel cars to aluminum. Because we did our own railcar repairs, our steel cars had been kept in service longer than those of other utilities. We knew which railcar parts were reliable and which vendors took care of their customers. Our past experience was incorporated into the bid specifications. Reliable suppliers like Stucki, ASF, New York Air Brake, and Timken were included in our specifications. FreightCar America won the bid and we inspected their manufacturing. Their manager used to be in charge of producing Camaros for General Motors and he ran a first-class operation. GRDA had very strong warranty terms, but they were not needed, as all 775 cars ran almost flawlessly. FreightCar's Mike Kelly was the sales rep, and he did a great job getting these cars delivered for GRDA.

Two other GRDA projects are noteworthy. We had been searching for a used switch engine all over the country but found nothing worth purchasing. Eventually, we were able to locate and buy a 1957 GP-9 locomotive with refreshed wiring and actual maintenance records. We converted it to our switch engine with a makeover and "hot start" system. Our rotary car dumper had over one million cars through it, and that's a lot of accumulated metal fatigue! We visited other sites that had replaced their dumpers and adopted their "lessons learned." Our contractor was able to do the project with only a 17-day dumper outage.

With new, more stringent EPA regulations on coal units, GRDA found itself at a crossroad in 2013. Should we upgrade the two coal units to meet the new standards or consider other options? Economic evaluation showed our coal units were not the





July 2, 2016 - the day after catastrophe struck Unit 2



October 25, 2017 - Unit 2 is fully restored

best choice unless there was to be a substantial reduction in the long-term rate for coal delivery. Proposals were made, but railroads had become reluctant to make long-term agreements. We presented options to our Board of Directors and customer groups. After review, there was 100% customer support to build a new gas-fueled, combined-cycle unit and to upgrade our second coal unit with new fabric filter baghouse and mercury capture.

To accomplish these two projects, I turned over plant and fuel operations to others and focused on the upgrade and new construction. In late 2015 the coal unit upgrade was finished, and

construction on the new combined-cycle unit was underway. On July 1, 2016, catastrophe struck Unit 2. A main breaker failure led to tremendous damage to the turbine generator. It looked like the unit might be finished. However, with support from our Board of Directors, Siemens, General Electric, and FM Global, Unit 2 was fully restored in just 15 months. Many decisions had to be made, but our past experiences prepared us to make those decisions wisely. Furthermore, GRDA employees were never more motivated to work together! During these difficult times, our CEO, Dan Sullivan, was a rock of stability, courage, and good judgment.



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Nick Keys hiking in the Grand Canyon in 2014

It was our pleasure not to let him or GRDA down. When I retired, GRDA named the new control room after me. (Usually, you have to be dead to get such a plaque!)


Completion of the new Combined Cycle 3 allowed GRDA to merge its portfolio of wind, hydro, combined-cycle gas, and coal generation into the best value for our customers. Not everything went well with the new unit, but our major equipment supplier, Mitsubishi Hitachi Power Systems Americas, always honored its commitments and made things right. They demonstrated they wanted to be GRDA's partner for the long term. Driving by now, one can see the new unit runs most every day, while the restored coal unit does not run very often. A reduced coal transportation cost would likely help the coal unit be more competitive.

Over the years, GRDA worked with several account representatives with Union Pacific in Omaha. All were professional and supportive; however, Kelli Sweet was exceptionally effective. Thank you, Kelli, for the terrific support given GRDA!

A Busy Retirement

Retirement for me has been busy. I have done a few small projects for GRDA as a consultant engineer. (For the right project, I will work for someone else, too!) I have also had time to travel to Norway, Denmark, Germany, Poland, the Czech Republic, and Mexico. My wife and I also took the Amtrak Coast Starlight from Los Angeles to Seattle (36 hours, recommended). I am always glad to get back home and then wonder why I ever left. Progress on my two Datsun Z-car restoration projects has been unsatisfactory. My mother is in assisted living, and her decline reminds me that we are all headed there. I have had the time to do genealogy research in collaboration with others using the internet. Be assured that DNA testing will find your relatives! I have also had more time to pursue fitness goals and am at the gym three to five times per week. My part-time business investments have been successful, thanks in part to my experiences at GRDA. And I have continued to do occasional wilderness hikes, including the Grand Canyon with Nick Keys. My latest goal is to live to reach 100 years.

By the way, Robert Ladd now represents GRDA at NCTA events. Robert is a superstar, and you can count on him in any business arrangement. Best wishes to all at the NCTA, and thank you for the memories. ▲



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