

Cleaning dirty air risks costlier Arizona water

by **Shaun McKinnon** - Nov. 1, 2009 12:00 AM

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- Sharon Megdal

Director of the University of Arizona's
Water Resources Research Center

The [Navajo](#) Generating Station, the huge coal-fired power plant outside Page, supplies a fraction of Arizona's electricity demand, but its role in moving water to the state's [largest cities](#) has thrust it into a growing battle over the cost of cleaning up air pollution. In the two months since the U.S. Environmental Protection Agency proposed rules that would require costly new air-scrubbing equipment at the plant, the debate has escalated into a war of increasingly dire predictions: Tribal economies could collapse. The plant itself could close. The price of water sold to [Phoenix and Tucson](#) could quadruple.

Environmental groups have targeted Navajo and the nearby Four Corners Power Plant for years because of the emissions-related haze that builds up over the Grand Canyon and other fragile landscapes. The EPA ranks Navajo as the nation's third-largest emitter of nitrogen oxides, pollutants created when coal is burned. Four Corners is the second-largest.

The new EPA rules, if adopted by the agency, would force owners of the two plants to install complex new air scrubbers that use ammonia to break down the pollutants. Navajo's owners say the systems cost [too much money](#) and could push power rates out of reach for the plant's users. They also argue that the added scrubbers would produce visibility improvements imperceptible to human eyes.

One reason tempers have flared is the unusual role the generating station plays, both in its own backyard and in the state's population centers.

The coal burned to produce electricity is mined on the nearby [Hopi and Navajo](#) Indian reservations, and tribal members supply much of the labor needed to keep the plant running. If the plant closed, the tribes would lose the jobs and millions of dollars in revenue from the coal.

Although the tribes have long sided with environmentalists on resource issues, leaders condemned the Sierra Club and other groups for supporting the EPA plan, creating schisms within the tribes.

The plant, owned by five utilities and the U.S. Bureau of Reclamation, powers the state's largest conveyor of water, the Central Arizona Project Canal, supplying electricity cheaply enough to pump water 3,000 feet uphill, from the Colorado River to Phoenix and Tucson.

That link between water and energy has raised anew doubts about subsidizing cheap water with cheap electricity, but CAP officials say there's little question that the EPA plan would result in higher prices for water users.

"What we do can't be done without water or power," said David Modeer, general manager of the Central Arizona Water Conservation District. "Power is the biggest expense related to the price of our water. I can't think of any bigger threat to us other than the Colorado going dry."

Opposing proposals

The EPA outlined its proposal to require the tighter pollution controls at Navajo in a densely worded document published in the Federal Register in August. The power plant's partners knew something was coming but expected federal regulators to consider a less-expensive option discussed late in 2008.

Powerful connections

The Navajo Generating Station near Page supplies electricity to pump water in the CAP Canal to Phoenix and Tucson. One of two large coal-fired power plants in the region, it provides hundreds of mining-related jobs on the Navajo and Hopi Indian reservations.



*Proposed. **Closed December 2005.
Source: Central Arizona Project, Salt River Project, Republic research THE ARIZONA REPUBLIC

"We were quite surprised that it departed so much from what we had proposed," said Richard Hayslip, an associate general manager at Salt River Project, the plant's managing partner. "The signals were pretty positive that they were agreeing with what we talked about. It was a little disappointing."

SRP had submitted an alternate proposal late last year, one aimed at trying to reduce pollution from the plant in what the utility believed was a more cost-effective way.

That plan included ongoing work to install more-efficient burners that would reduce the emission of nitrogen oxides, one of the chief sources of pollution from coal burning. The low-NO_x burners, as they're called, would cost about \$43 million to install and would not raise operating costs significantly.

The EPA proposed a more advanced air-scrubbing system that uses ammonia to reduce pollutants. The system, known as Selective Catalytic Reduction, could cost \$600 million to \$1 billion to install, according to SRP estimates, and would add about \$13 million a year to the plant's operating budget, expenses that would be passed on to users.

The ammonia must be injected into the system after the coal is burned. The chemical would be delivered to Flagstaff by railroad and then trucked to Page, where the only rail service is a direct line from the Kayenta coal mine that feeds the plant. The process could require additional measures to get rid of sulfuric acid mist produced with the system.

"It would be a very significant capital investment and challenging to do the work," said Glenn Reeves, SRP's manager of power generation. "We would have issues just getting approval from all the owners. There are a lot of uncertainties around coal plants right now."

The Los Angeles Department of Water and Power, which holds a 21 percent interest in Navajo, faces strict rules under California law about investing money in coal-fired plants and could decide to walk away from Navajo if the expenses rise too high.

Partners in the Mohave Generating Station near Bullhead City did just that at the end of 2005 amid issues with air-quality rules and the supply of coal. That closure eliminated about 300 jobs at the plant site and 240 jobs filled mostly by coal miners from the Navajo Reservation.

The Navajo Generating Station partners have enlisted Gov. Jan Brewer and have appealed to the state's congressional delegation, but they still fear the EPA is on track to require the costly upgrades.

The agency will accept public comments through the end of the year before making a final decision, which is likely by the middle of 2010.

If the EPA adopts its proposed rules, SRP would have five years to complete the upgrades.

Navajo's owners or its users, such as CAP, could challenge the final ruling or even take the agency to court. All say they are preparing to respond quickly when the decision is made.

Costly consequences

What makes this case more than another fight over utility regulations is Navajo's unusually close ties to the CAP Canal. A spike in power prices at the plant would result in significantly higher water rates for CAP users and could affect the state's ability to [store](#) water for future use.

The Navajo Generating Station was built to provide a power supply for the canal, which snakes 336 miles from the Colorado River near Lake Havasu City to Phoenix and Tucson. The power feeds a series of pumps that move 1.5 million acre-feet of water a year - almost 500 billion gallons - as much as half the water used by cities and farms in Maricopa, Pinal and Pima counties.

The canal must lift the water a total of almost 3,000 feet in elevation, a task that consumes 2.8 million megawatt-hours of electricity, enough to supply about 200,000 homes.

That makes the CAP the largest single electricity user in Arizona, and it raises the stakes if Navajo's operations are put at risk.

"We do not have an alternative," said Susan Bitter Smith, president of the elected board that oversees the canal. "This is a survival issue for us. We need the EPA to work with us in a rational, logical way that takes into consideration all of the consequences."

CAP officials are suggesting two possible outcomes if the EPA adopts its proposed rules:

One, the power plant stays open, but the price of electricity spikes by 50 to 100 percent, depending on how many years the cost of the upgrades are amortized. The higher prices would hit all the plant's users, which include utilities in Arizona, Nevada and California.

Two, the partners decide to abandon the plant, and CAP is forced to buy electricity off the grid. In the worst-case scenario, officials believe costs to move water could quadruple.

In either case, CAP would have few options except to pass along the higher costs to its customers - the cities and water companies that buy water from the canal wholesale - and to property-tax payers in the three counties.

Phoenix and other cities have written letters urging the EPA to consider the effects of its proposal beyond air quality, to look at the potential for higher water costs.

"We're just asking them to weigh the equities as they look at protecting the visibility around the plant," said Tom Buschatzke, water adviser for the city of Phoenix. "We're trying to make EPA understand the importance of the issue, the way regional and local economies are suffering right now."

The CAP Canal accounts for 43 percent of Phoenix's water supply, so the city probably couldn't absorb the higher charges, Buschatzke said, meaning at least some of the cost would be passed down to ratepayers.

The long-term effects could grow worse. Phoenix and other cities rely on the state Water Banking Authority to help store water as a hedge against future droughts. The Legislature already has slashed the bank's budget, and if the bank can't buy water, the cities would lose that backup supply.

Higher costs also would affect agricultural users, who now pay below-market prices for CAP water as part of a deal that will make their supplies available to cities by 2030.

And the loss of the plant would deprive the CAP of a critical source of revenue used to help repay the federal government the state's share of the canal's construction costs. Under an agreement with the Bureau of Reclamation and the plant's partners, CAP is allotted a certain amount of power and can sell whatever it doesn't need.

If the power isn't there or if it's so expensive no one will buy it, CAP officials would have to raise the needed revenue elsewhere, and their only options are water rates and property taxes.

Environmentalists counter

One of the arguments SRP, CAP and others have made in recent weeks is that the expensive controls proposed by the EPA wouldn't improve air quality enough to justify the huge price tag. SRP suggests that the change in visibility might not even be noticeable to the human eye.

Environmental groups don't buy that argument. They say any improvement will move the plant closer to visibility rules that allow no haze over national parks and other protected lands.

"The standard is no impairment," said Roger Clark, who follows the issue for the Flagstaff-based Grand Canyon Trust. "Every increment along the way improves visibility, and that's what the law requires."

The EPA disagreed with SRP's analysis and argued that the utility and its partners overestimated the cost and underestimated the benefit.

Environmental groups also say the EPA plan is just the first of a one-two punch the power plant will likely face in the coming years. If Congress passes a climate-change bill that includes a cap-and-trade plan to reduce pollutants, Navajo will get hit with the equivalent of a carbon tax.

Clark and others say CAP should invest in alternative energy. Cover the canal with solar panels, for example, and connect them to the transmission lines that already supply the pumping stations along the route.

Covering the canal also would help reduce evaporation from the channel. CAP estimates that it loses about 16,000 acre-feet, or about 5 billion gallons, a year to canal evaporation.

CAP's Modeer acknowledges that renewable energy will play a role in the canal's future, but "the power that can be generated out of solar under the most advanced technology today still could not provide our base load of power."

Clark and others say one of the most important questions bubbling up from the dispute is the cost of water in the West.

Water providers and customers don't really pay for the water; they pay for its delivery and treatment. The largest component of CAP's wholesale rate is the cost of energy. That water-energy link is as old as the West's oldest water projects, but it's likely to surface more often as energy prices rise and water resources tighten.

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