



P.O. Box 43020 • Phoenix, AZ 85080-3020  
23636 North Seventh Street • Phoenix, AZ 85024  
623-869-2333 • www.cap-az.com

December 18, 2009

Ms. Colleen McKaughan  
Associate Director, Air Division Region IX  
United States Environmental Protection Agency  
75 Hawthorne Street  
San Francisco, CA 94105

RE: Assessment of Anticipated Visibility Improvements at Surrounding Class I Areas and Cost Effectiveness of Best Available Retrofit Technology for Four Corners Power Plant and Navajo Generating Station: Advanced Notice of Proposed Rulemaking, Docket No. EPA-R09-OAR-2009-0598 – Your Letter of November 25, 2009.

Dear Ms. McKaughan:

On August 28, 2009, the Environmental Protection Agency published an Advanced Notice of Proposed Rulemaking (ANPR) on Assessment of Anticipated Visibility Improvements at Surrounding Class I Areas and Cost Effectiveness of Best Available Retrofit Technology (BART) for Four Corners Power Plant and Navajo Generating Station (NGS).<sup>1</sup> On October 28, 2009, the Central Arizona Water Conservation District (CAWCD) submitted detailed comments on the ANPR to EPA. By letter dated November 25, 2009, you requested further information from CAWCD about the cost impacts of EPA's BART determination on CAP water rates. Specifically, you asked:

What would be the effect on the cost of water from the CAP for the various BART retrofit options outlined in the ANPR?

We appreciate the opportunity to answer that question.

#### Introduction and Executive Summary

In assessing the impact of the BART control options on CAP water rates, we have used the cost estimates submitted to EPA by Salt River Project Agricultural Improvement and Power District (SRP) in December 2008.<sup>2</sup> Essentially, two control options for nitrogen oxide (NO<sub>x</sub>) emissions are at issue: low NO<sub>x</sub> burners and separated over fire air (LNB/SOFA) and selective catalytic reduction (SCR).<sup>3</sup> These two options define the end-points of cost impacts.

---

<sup>1</sup> 74 Fed. Reg. 44313-34.

<sup>2</sup> ENSR Corporation, Revised BART Analysis for the Navajo Generating Station Units 1-3, December 2008, EPA-R09-OAR-2009-0598-0010.1.

<sup>3</sup> We have ignored the option of installing ½ an SCR on Unit 2 because we believe that option to be infeasible. We have also ignored selective non-catalytic reduction as that appears not to be under serious consideration by EPA as a control option.

The installation of LNB/SOFA would have a negligible impact on CAP water rates, resulting in an estimated increase in CAP energy charges of about \$0.50 per acre-foot (a one percent increase in our 2010 energy rate of \$49 per acre-foot).

The installation of SCRs would necessitate an increase in CAP energy charges of at least \$9.85 per acre-foot, a 20 percent increase over our 2010 energy rate. It would also result in losses to the Development Fund on the order of \$175 million, plus interest, between 2016 and 2036 alone. This represents the *most favorable* result that we would expect from a requirement that SCRs be installed, because it assumes (a) that the participants would decide to install SCRs at a cost of approximately \$700 million despite several significant factors that mitigate against making such an investment at the present time and (b) that the participants would have at least 20 years to amortize that investment. A \$10 per acre-foot increase in CAP energy charges would be especially problematic for our Indian and non-Indian agricultural water users, for reasons discussed below. A loss of \$175 million in Development Fund revenues would be especially harmful to those Indian tribes that have negotiated final settlements of their water rights claims and benefit from the subsidy of fixed CAP OM&R charges that these revenues to the Development Fund would otherwise have provided.

Much more significant costs would be incurred by CAWCD and its water users if a requirement to install SCRs resulted in closure of the Plant, which is a significant risk in this rulemaking, in our view.

- First, CAWCD would have to acquire a substitute source of pumping energy at market price. This would require a 50 to 300 percent increase in CAP energy charges over those that would be expected if NGS continued to operate as it does today.
- Second, CAWCD would have to replace at least \$50 million in annual revenues that are projected to result from the sale of surplus NGS power. These revenues offset, dollar-for-dollar, the amount due from CAWCD each year on its construction cost repayment obligation for the CAP. The loss of these revenues would require substantial increases in water service capital charges for our municipal and industrial (M&I) water users, significant increases in our ad valorem tax rates, or both. If collected only in the form of increases in our water service capital charges to M&I water users, this would necessitate a water service capital charge to our M&I water users of about \$80 per acre-foot, levied against each M&I user's full contract entitlement to CAP water – an additional annual charge of about \$11.4 million to the City of Tucson and about \$9.6 million to the City of Phoenix. If not for this rulemaking, CAWCD has projected that, by the year 2012, M&I water service capital charges would be reduced to zero, given what we have expected to earn from sales of surplus NGS power.
- Third, the United States and those Indian entities that have entered into congressionally approved settlements of their water rights claims would lose tens of millions of dollars in revenues to the Lower Colorado River Basin Development Fund each year that are *over and above* the annual payments due from CAWCD on its repayment obligation for CAP – as much as \$60 million to

\$90 million *per year* between 2016 and 2023 alone. These revenues are pledged to the direct benefit of the United States and Indian tribes under the Arizona Water Settlements Act of 2004. CAWCD has assumed in its long-term financial plan that NGS would continue to operate through the end of the CAP repayment period in 2046, and thus that such revenues would continue to benefit CAWCD, the United States and Indian entities well beyond the 2023 timeframe.

Discussion

I. The Cost Impacts of a Requirement to Install LNB/SOFA

The participants in NGS are voluntarily installing LNB/SOFA on all three units at NGS at a total capital cost of approximately \$43 million. The costs of installing LNB/SOFA would have a negligible impact on CAP water rates. The impact of installing LNB/SOFA on CAP water rates may be estimated as follows:

Control Technology	Fixed Capital Costs (\$/yr) <sup>a</sup>	Total Annual Costs (\$/yr)	NGS Annual Production (mwh)	Additional Cost Per Unit (\$/mwh)	Additional Cost For CAP Pumping
LNB/SOFA (Units 1-3)	\$4,866,000	\$4,866,000	17,400,000	\$0.28 <sup>b</sup>	\$784,000 <sup>c</sup>
(a) Fixed capital costs based on CFR of 0.1159, assuming interest rate of 9.8% and amortization period of 20 years. (b) \$4,866,000 divided by 17,400,000. (c) \$0.28 per mwh multiplied by 2,800,000 mwh from NGS for pumping. (d) \$784,000 divided by 1,550,000 acre-feet annually. (e) Percent increase in Energy Rate 1 from 2010 rate of \$49 per acre-foot.					Additional Cost for CAP Pumping (\$/AF)  \$0.51 <sup>d</sup>  1% <sup>e</sup>

Since LNB/SOFA is currently being installed, and the costs to do so are included in the current NGS capital budget and established rates being paid by the NGS participants and their customers, the mechanics of financing these costs are not an issue.

II. The Cost Impacts of a Requirement to Install SCRs

The alternative control technology, SCR, would cost over 15 times more than LNB/SOFA – \$660 million in capital costs, plus \$13 million in annual operation and maintenance costs, according to estimates prepared by SRP. Because the installation of SCRs, if required, would be in addition to the installation of LNB/SOFA, the total capital costs of NO<sub>x</sub> controls would equal approximately \$705,000,000, under this control option. If downstream particulate controls were also required, total capital costs could balloon to \$1 billion. Nevertheless, for purposes of this analysis, we have assumed that no additional controls beyond SCR would be required.

A. NGS Continues to Operate At Least Through 2035

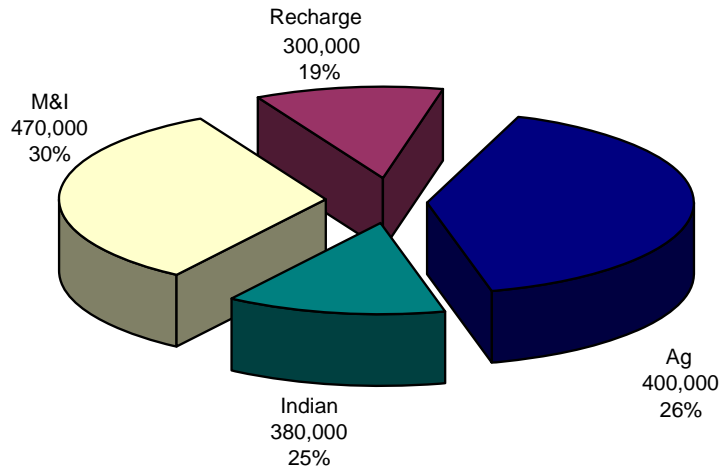
1. Impact on CAP Energy Charges

If one assumes that the remaining useful life of NGS is 25 years (promulgation of a final rule in 2010, a requirement to install the required controls by December 31, 2015, and an amortization period of 20 years thereafter), the impact on CAP energy rates may be estimated as follows:

Control Technology	Fixed Capital Costs (\$/yr) <sup>a</sup>	Total Annual Costs (\$/yr) <sup>b</sup>	NGS Annual Production (mwh)	Additional Cost Per Unit (\$/mwh)	Additional Cost For CAP Pumping
LNB/SOFA & SCR (Units 1-3)	\$81,681,000	\$94,848,000	17,400,000	\$5.45 <sup>c</sup>	\$15,260,000 <sup>d</sup>
(a) Fixed capital costs based on CFR of 0.1159, assuming interest rate of 9.8% and amortization period of 20 years. (b) Fixed capital costs plus \$13,167,000 in annual operation and maintenance costs. (c) \$94,848,000 divided by 17,400,000. (d) \$5.45 per mwh multiplied by 2,800,000 mwh from NGS for pumping. (e) \$15,260,000 divided by 1,550,000 acre-feet annually. (f) Percent increase in Energy Rate 1 from 2010 rate of \$49 per acre-foot.					Additional Cost for CAP Pumping (\$/AF)  \$9.85 <sup>e</sup>  20.1% <sup>f</sup>

While a \$10 per acre-foot increase in water delivery charges would be significant for our municipal and industrial (M&I) water users (it would increase annual water delivery charges to the Cities of Phoenix and Tucson, for example, by about \$1.4 million and \$1.3 million, respectively), the users most adversely affected by such an increase would be our non-Indian agricultural (Ag) and Indian water users. These users currently account for a major share of our water deliveries, as shown in the following diagram:

CAP Water Deliveries  
 Typical Water Year = 1,550,000 AF



Of the 380,000 acre-feet of Indian water shown in the above diagram, about 130,000 acre-feet has been leased by tribes to non-Indian M&I entities pursuant to Indian water rights settlements, and the increased costs of those deliveries would fall on M&I entities. We have also assumed that non-Indian agricultural water use will eventually decline as agricultural lands in the CAP service area urbanize and M&I uses increase. However, Indian uses of CAP water will increase as their federally-funded CAP distribution systems are completed and brought on line. About 47 percent of the total CAP water supply is dedicated to Indian use. Absent significant increases in CAP water rates, agricultural (including Indian) uses of CAP water will probably always comprise a major share of CAP water use.

Agricultural uses of CAP water are highly sensitive to CAP water rates. Indeed, pursuant to a comprehensive settlement of disputes among the United States, the State of Arizona and CAWCD regarding the costs of the CAP and the proper division of CAP water between Indian and non-Indian water users, water delivery charges for Indian and non-Indian agricultural water users are subsidized in order to facilitate CAP water use by these two categories of water users. It is important to emphasize from the outset that the establishment of CAP water delivery charges for our non-Indian agricultural and Indian water users was part of a comprehensive settlement of CAP water supply and cost disputes that culminated in the Arizona Water Settlements Act discussed below.

In 1972, CAWCD entered into a master contract with the Secretary of the Interior (Secretary) for repayment of CAP construction costs and delivery of the CAP water supply (the Repayment Contract). That contract was amended in 1988 to increase CAWCD's repayment obligation for the CAP. As a result of a subsequent dispute between the United States and CAWCD regarding CAWCD's repayment obligation, CAWCD filed suit against the United States in 1995. The United States also filed suit against CAWCD (the Repayment Litigation). On May 9, 2000, the litigation was settled, contingent upon the satisfaction of certain conditions within a specified time period (the Repayment Settlement). On April 28, 2003, the Repayment Settlement was amended to extend the time for satisfaction of the conditions necessary for entry of final judgment.

One of the conditions to entry of final judgment was that Congress enact legislation satisfactory to the Secretary that authorized the use of amounts deposited in the Lower Colorado River Basin Development Fund (Development Fund) and credited against CAWCD's repayment obligation to help fund the costs of Indian water rights settlements in Arizona. On December 10, 2004, the Arizona Water Settlements Act was enacted into law (the Settlements Act).<sup>4</sup> The Settlements Act facilitated final judgment in the Repayment Litigation by authorizing the actions that were necessary to satisfy the conditions of the Repayment Settlement. The Settlements Act included amendments to the Colorado River Basin Project Act of 1968 (the Basin Project Act),<sup>5</sup> that allow amounts deposited in the Development Fund and credited against CAWCD's repayment obligation to be applied toward the costs of Indian water rights settlements in Arizona.<sup>6</sup>

---

<sup>4</sup> Public Law 108-451.

<sup>5</sup> Public Law 90-537, 43 U.S.C. §§ 1501, et seq.

<sup>6</sup> See Section 107 of the Settlements Act, codified at 43 U.S.C. § 1543(f).

The Repayment Settlement also required that that there be a reallocation of CAP water supplies such that the total amount of CAP water allocated for federal (Indian) uses be increased to 667,724 acre feet, or approximately 47% of average annual CAP supplies. The remaining CAP supplies, 747,276 acre-feet, or approximately 53% of average annual CAP supplies, were required to be made available for non-Indian agricultural, municipal and industrial use.

This reallocation was required to be accomplished through the acquisition of the CAP water supplies of non-Indian agricultural CAP subcontractors and the eventual reallocation of those supplies to Indian and M&I water users. In return for the receipt of certain benefits, including the opportunity to purchase CAP water under short term contracts at energy-only rates through 2030, non-Indian agricultural CAP subcontractors were offered the opportunity to relinquish their rights to non-Indian agricultural CAP water under their long-term CAP subcontracts. All non-Indian agricultural CAP water users have now relinquished their long-term CAP subcontracts in return for these benefits.

For its part of the bargain, CAWCD has agreed, through 2030, to collect only the energy charges (what we refer to as "Energy Rate 1") associated with delivery of CAP water to those non-Indian agricultural water users that relinquished their long-term rights to CAP water. The relinquishment of these water supplies by our non-Indian agricultural contractors made subsequent Indian water rights settlements possible by providing a pool of settlement water supplies for reallocation by the Secretary of the Interior (a) to Indian entities as part of final Indian water rights settlements and (b) to non-Indian M&I CAP water users to supplement their existing supplies.

Despite the fact that our non-Indian agricultural water users pay only CAP energy charges, in recent years, they have objected even to increases in water delivery charges on the order \$1 per acre-foot, warning the CAWCD Board that even such modest increases in our energy rates threaten their ability to continue to use CAP water to meet their irrigation demand. If unable to use CAP water because of its cost, these water users would likely return to pumping groundwater water as the exclusive means of irrigating their lands, contrary to the purposes of the Basin Project Act and the Arizona Water Settlements Act.<sup>7</sup> It is our expectation that a \$10 per acre-foot increase in CAP energy charges, over and above that predicted as a result of normal increases in energy costs, would put many, if not all, non-Indian agricultural water users "out of the business" of using CAP water.<sup>8</sup>

The same can probably also be said of our Indian water users. They, like our non-Indian agricultural water users, use or will use their CAP water supplies almost exclusively for

---

<sup>7</sup> The legislative history of the Basin Project Act indicates that the principal purposes of the CAP were to reduce Arizona's overdraft of its dwindling groundwater supplies, maintain as much as possible Arizona's irrigated farmland, and provide additional water for future municipal and industrial growth. S. Rep. No. 408, 90th Cong., 2d Sess., at 27-28 (July 26, 1967). To these purposes has been added the facilitation of Indian water rights settlements in Arizona. See Arizona Water Settlements Act, *supra*, note 4.

<sup>8</sup> Absent a \$10 per acre-foot increase in CAP energy charges, agricultural water delivery charges are expected to increase by only \$1 per acre-foot, to \$50 per acre-foot, in 2011, and then by \$2 to \$3 per acre-foot per year through 2014. Even these modest increases may be difficult for our agricultural water users to absorb. A complete listing of CAP water rates for 2009-2010 is available on the CAP website: <http://www.cap-az.com/includes/media/docs/5-b-ii-Revised-Rate-Schedule-Combined.pdf>

agricultural purposes. Under the Repayment Settlement, CAWCD and the United States have agreed that Indian users of CAP water shall be charged both the energy costs and the non-energy fixed operation, maintenance and replacement (OM&R) costs of CAP water delivery. However, Congress has provided, in the Settlements Act, that monies deposited in the Development Fund established under the Basin Project Act may be used to pay the fixed OM&R costs of CAP water deliveries for those tribes that have entered into final settlements of their water rights claims. Many tribes have entered into final settlements of their water rights claims, accepting CAP water supplies in lieu of claims to other local water supplies, in the expectation of receiving this benefit.<sup>9</sup> The requirement that water delivery charges for Indian water users be subsidized in this manner is not an open-ended obligation, but lasts only so long as monies are available from the Development Fund to pay the fixed OM&R costs of Indian water deliveries. Nevertheless, at the current time, Indian customers of CAP water that have entered into congressionally approved water rights settlements pay only the energy charges (Energy Rate 1) associated with CAP water delivery.<sup>10</sup> Even so, they, like our non-Indian agricultural customers, would probably find it very difficult to pay an additional \$10 per acre-foot for CAP water, and they might view such an increase in costs as contrary to their reasonable expectations when they entered into final settlements of their water rights claims, and perhaps even a breach of the United States' trust responsibilities to them and their tribal members.

## 2. The loss of revenues from the sale of surplus NGS power

The installation of SCRs would also have a significant adverse effect on revenues accruing to the Development Fund from sales of surplus NGS power. NGS power not needed for CAP pumping is sold pursuant to federal law and policy to help repay the construction costs of the CAP and fund the costs of Indian water rights settlements in Arizona. This is authorized specifically by Congress.<sup>11</sup> Currently, revenues from the sale of surplus NGS power contribute about \$22 million per year toward CAWCD's \$55 million annual repayment obligation for the CAP. By the year 2012, however, revenues from the sale of surplus NGS power are expected to contribute tens of millions of dollars more each year toward CAP repayment, revenues that will also be used to help fund the costs of Indian water rights settlements in Arizona.<sup>12</sup>

---

<sup>9</sup> These settlements are described in detail in Appendix A to comments submitted by CAWCD to EPA on July 13, 2009 as part of this rulemaking.

<sup>10</sup> If it were not for the subsidy of water rates for Indian water use provided for in the Arizona Water Settlements Act, CAP water rates for Indian (federal) water use would be \$118 per acre-foot rather than \$49 per acre-foot in 2010, with similar, but escalating rates prevailing thereafter.

<sup>11</sup> The Basin Project Act authorized the Secretary of the Interior to dispose of power not needed for CAP pumping and required the Secretary to deposit the revenues from such power sales in the Lower Colorado River Basin Development Fund (Basin Development Fund) established under that Act. Basin Project Act, Sections 304(b) and 403(c)(1), 43 U.S.C. §§ 1523(b), 1543(c)(1). The Hoover Power Plant Act of 1984 authorized the sale of surplus power from NGS for the specific purpose of assisting in payment and repayment of CAP costs. See Section 107 of the Hoover Power Plant Act of 1984, Public Law 98-381, 98 Stat. 1333, 1339-1340 (August 17, 1984). In 2004, Congress expanded the use of revenues from sales of surplus NGS power by authorizing the use of revenues deposited in the Lower Colorado River Basin Development Fund to help fund the costs of Indian water rights settlements in Arizona after having been applied first against CAWCD's repayment obligation for the CAP. See Section 107 of the Arizona Water Settlements Act of 2004, Public Law 108-451, codified at 43 U.S.C. § 1543(f).

<sup>12</sup> Currently, most revenues from sales of surplus NGS power (all but about \$22 million a year) are pledged under a bond indenture to the payment of bonds issued by CAWCD to make an upfront contribution of \$175 million toward the costs of construction of New Waddell Dam, the CAP regulatory storage feature. That bond indenture terminates on September 30, 2011. Thereafter, all of the revenues from surplus NGS power sales will be applied to CAP

By the year 2015 at the latest, and perhaps as early as the year 2012, revenues from the sale of surplus NGS power are expected to reach levels that would be more than sufficient to fully pay the annual amount due from CAWCD on its construction cost repayment obligation for CAP (about \$55 million a year).<sup>13</sup> However, the installation and operation of SCRs would reduce revenues to the Development Fund from the sale of surplus NGS power by about \$9 million per year,<sup>14</sup> or by about \$175 million, not including interest, between the assumed date of their completion in 2016, and 2036, the end of the assumed 20-year amortization period. The operation of SCRs would reduce Development Fund revenues by about \$1.2 million per year thereafter.<sup>15</sup>

Among other things, this would mean that CAWCD's repayment obligation might not be fully covered by Development Fund revenues until significantly later than we have projected, based on forecasts of the value of surplus NGS power. This would necessitate increases in our water service capital charges, our ad valorem tax rates, or both, beyond those assumed in our current rate structure. It would also mean that revenues in excess of the payments due from CAWCD on its construction cost repayment obligation for CAP (excess revenues) might not begin to accrue to the Development Fund until significantly later than we have projected. Because excess revenues to the Development Fund contribute directly to the payment of the fixed OM&R charges of Indian CAP water deliveries for those tribes that have settled their water rights claims, the loss of these revenues would be especially harmful to such tribes. Currently, CAP delivery charges to Indian tribes that have settled their water rights claims are limited to energy charges only. The balance (the fixed OM&R charge of CAP water delivery) is being paid for by revenues from the Development Fund, as provided in the Arizona Water Settlements Act. The fixed OM&R charge for CAP water delivery is cost-based, but substantial. Under our 2009-2010 water rate schedule, for example, the fixed OM&R charge for Indian water delivery has been established at \$69 per acre foot for 2010 (the same fixed OM&R charge that applies to non-Indian M&I water deliveries).<sup>16</sup> This brings the total cost of Indian water deliveries to \$118 per acre-foot for 2010 (\$49 per acre-foot in energy charges plus \$69 per acre-foot in fixed OM&R charges). If, in addition to paying a \$10 per acre-foot increase in energy charges necessitated by a requirement to install SCRs at NGS, Indian water users were forced to pay all or part of the fixed OM&R charge for CAP water delivery, the impact on Indian water users would be even more catastrophic.

---

repayment and the costs of Indian water rights settlements. At that time, we expect surplus NGS power sales to generate \$50 million or more in annual revenues for these purposes

<sup>13</sup> The actual amount due from CAWCD to the United States each year on CAWCD's repayment obligation for the CAP is dictated by the amortization schedule in CAWCD's Repayment Contract and the schedule of annual payments set forth in the Repayment Settlement. The amount due from CAWCD varies somewhat from year to year, but is approximately \$55 million per year.

<sup>14</sup> \$5.45 per mwh multiplied by 1.6 million mwh of surplus NGS power.

<sup>15</sup> \$13,167,000 in annual operation and maintenance costs divided by 17,400,000 mwh of total NGS production multiplied by 1.6 million mwh of surplus NGS power.

<sup>16</sup> As noted above, a complete listing of CAP water rates for 2009-2010 is available on the CAP website: <http://www.cap-az.com/includes/media/docs/5-b-ii-Revised-Rate-Schedule-Combined.pdf>

3. The mechanics and feasibility of financing the CAP share of the capital costs of SCRs

While the financing costs of constructing SCRs have been included in the cost analysis, the mechanics and feasibility of financing the CAP share of those costs have not been addressed by either the Bureau of Reclamation or CAWCD. Had Reclamation not declared the CAP water supply system (including NGS) complete in 1993, CAWCD would have expected Reclamation to seek federal appropriations for the CAP share of the costs of controls under the authorization of appropriations contained in the Basin Project Act. CAWCD would then have repaid its share of the costs under its Repayment Contract and included those costs in its water and tax rates. However, that financing mechanism now appears to be unavailable. As a practical matter, the costs of financing SCRs, if required, could fall, at least initially, exclusively on CAWCD, despite the fact that 47 percent of the CAP water supply is dedicated to federal (Indian) water uses. How CAWCD would address such a financing requirement and subsequent cost recovery from Indian and non-Indian water users is unclear, but this is not a trivial problem.

B. NGS Ceases Operating On December 31, 2015

A \$10 per acre-foot increase in the CAP energy charges and losses in revenues to the Development Fund on the order of \$175 million or more is the *most favorable* result that we would expect from a requirement to install SCRs at NGS. The reasons are that it assumes that the NGS participants would make the decision to install SCRs, despite their enormous cost and in the face of other significant uncertainties now facing the Plant, and that they would have at least 20 years over which to amortize their investment. Several factors raise serious doubts about the willingness of the participants<sup>17</sup> to make substantial additional investments in emissions controls at the present time.

- The current term of the Plant's lease and right-of-way agreements with the Navajo Nation and the Section 323 Grants from the Secretary of the Interior that are necessary for the Plant's continued operation currently are due to expire in 2019 and have not yet been renewed or extended. If they are not renewed or extended, the remaining useful life of the Plant, beginning in the assumed control installation year of 2015, would be, effectively, as little as four years.
- While the term of the existing coal contract with Peabody was most recently extended to 2019, certain other terms and conditions of that contract must be renegotiated. SRP as Plant operator is actively pursuing such negotiations, but it is unclear whether or when those negotiations will be successfully concluded. The contract must then be further extended and renegotiated for the period beyond 2019.
- Because of restrictions imposed by California regulatory agencies on new investment in coal-fired power plants, one of the most significant participants in

---

<sup>17</sup> The NGS participants are the United States Bureau of Reclamation for CAP (24.3%), Salt River Project (21.7%), Los Angeles Department of Water and Power (21.2%), Nevada Power (11.3%), and Tucson Electric Power (7.5%). SRP is both an owner of a 21.7% share in the Plant and the operating agent of the Plant.

the Plant by percentage of entitlement to Plant output (21.2 percent), Los Angeles Department of Water and Power, has indicated its intention to withdraw from or dispose of its interest in the Plant by 2020.<sup>18</sup> How the remaining participants will deal with this very significant challenge is unclear.

- The prospect of carbon dioxide emission control regulation, either under new federal legislation or under the existing Clean Air Act, creates enormous uncertainty about the Plant's economic viability. The effects on the Plant cannot be predicted with any degree of certainty, but likely would be substantial and could jeopardize the Plant's continued operation well before the 2035 expiration date of the standard 20-year amortization period.
- Other prospective Clean Air Act regulations add to the difficulty of predicting the Plant's remaining useful life at this time. (For example, new EPA standards are widely expected to impose very stringent control limits for mercury emissions and possibly a range of other substances listed under section 112 of the Clean Air Act.) Again, the effects on the Plant cannot be determined with confidence at this time but could be very substantial and may call into question whether the Plant, or all its units, would continue to operate until as late as 2035, even apart from the other factors described above.

EPA might be tempted to conclude that these other factors are beyond its control or should not be taken into account in this rulemaking in any event. However, that would ignore the real world conditions under which the NGS participants must make decisions about significant capital expenditures. Until the Plant site agreements are renewed or extended beyond 2019, for example, and the other significant unknowns are resolved, the participants will naturally be loath to make investments in the Plant that entail the expenditure of hundreds of millions of dollars.

For these reasons, it may be more reasonable to assume that the Plant would cease operating if SCRs were required than it is to assume that the participants would invest \$700 million in additional emissions controls under current conditions. At the very least, there is a significant risk that that would occur. Thus, the real costs to CAWCD and its water users of a requirement that NGS install SCRs could well be the costs associated with purchasing an alternative power supply for CAP pumping and replacing the revenues associated with the sale of NGS power that is surplus to CAP's pumping needs. Accordingly, the following discusses the impact of Plant closure on CAP costs.

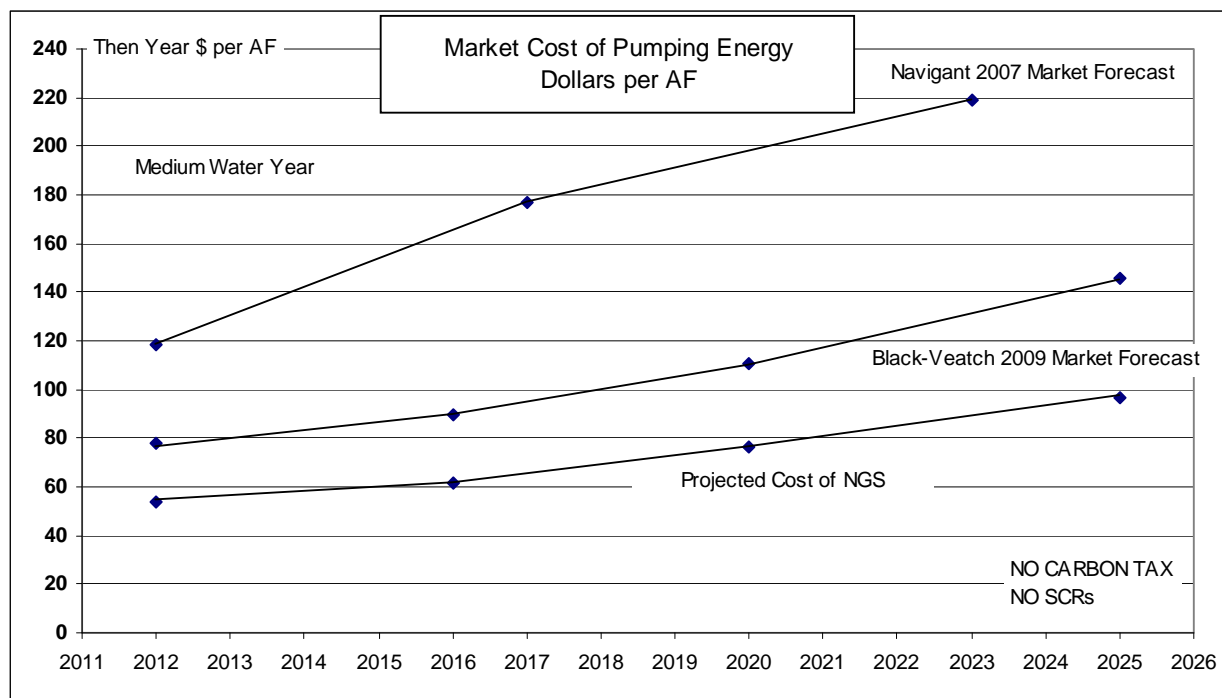
NGS has provided a low cost source of power for CAP pumping since 1985 when the first CAP water deliveries were made. In addition, because revenues from the sale of surplus NGS power are required by CAWCD's Repayment Contract and by federal law and policy to be applied against CAWCD's construction cost repayment obligation for the CAP, NGS has served to offset a substantial share of that obligation each year.

---

<sup>18</sup> See, e.g., Bernie Woodall, "Los Angeles Will End Use of Coal-Fired Power," Reuters, July 2, 2009, available at <http://www.reuters.com/article/GCA-GreenBusiness/idUSTRE56165X20090702>. This article reports that Los Angeles will eliminate the use of electricity generated from coal combustion by 2020, and that Deputy Los Angeles Mayor David Freeman said that the Los Angeles Department of Water and Power will continue to use power from the coal-fired 2,250-megawatt Navajo Generating Station in Arizona until 2019 when its current contract expires.

1. The projected cost of purchased power

CAWCD retained Navigant and Black and Veatch to prepare projections of the cost of purchased power and the value of surplus NGS power. Using the Navigant and Black and Veatch estimates of the costs of purchased power, we have estimated the range of CAP pumping energy costs under the assumption that NGS is out of service on December 31, 2015. At that point, CAP pumping energy costs are estimated using Navigant and Black and Veatch forecasts of electricity prices at the Palo Verde Hub. The following graph also shows the cost of NGS power, extrapolated from current costs, as a baseline for comparison. The Navigant estimate was prepared for CAWCD in 2007 at the "top" of the electricity market, and represents the "high end" of the range. The Black and Veatch estimate was prepared for CAWCD in 2009, at the "bottom" of the electricity market, and represents the "low end" of the range. One cannot say that one estimate is any better or more accurate than the other. The fact that they differ significantly reflects the fact that the market price of electricity can vary (and has varied) substantially over a relatively short period of time.



Thus, for example, in the year 2017, the cost of purchased power is expected to vary from a low of \$95 per acre-foot to a high of \$180 per acre-foot. This represents a very significant increase over the estimated cost of NGS power at \$65 per acre-foot (roughly a 50 to 300 percent increase in CAP energy charges). Under both forecasts, the spread between the costs of purchased power and cost of NGS power is expected to widen over time.

2. The loss of revenues from the sale of surplus NGS power.

An even more significant factor would be the loss of revenues from the sale of surplus NGS power that would result from closure of the Plant.

(a) The impact of Plant closure on CAWCD tax rates and water service capital charges

By the year 2015 at the latest, and perhaps as early as the year 2012, revenues from the sale of surplus NGS power are expected to reach levels that would be more than sufficient to fully pay the annual amount due from CAWCD on its construction cost repayment obligation for CAP (about \$55 million a year).<sup>19</sup> This is illustrated by the graph on page 13. Navigant and Black and Veatch estimates of the value of surplus NGS power were used to prepare this graph. If these revenues were unavailable for CAP repayment, CAWCD would be compelled to increase either its ad valorem tax rates, its water service capital charges to its M&I customers, or both.

To assist in payment and repayment of CAP costs, CAWCD is authorized to levy an ad valorem tax of up to ten cents per \$100 of assessed valuation on all taxable property within its three-county service area. CAWCD currently levies a tax of six cents per \$100 dollars of assessed valuation for these purposes. Most of the revenue from this tax is devoted to meeting water delivery costs, including the cost of subsidizing CAP water deliveries to those non-Indian agricultural water users that relinquished their long-term contracts for CAP water in return for energy only water delivery charges through 2030 and other benefits. CAWCD is also authorized to levy a tax of up to four cents per \$100 of assessed valuation for water storage, and currently levies such a tax at the maximum statutory rate and uses the revenues from that tax to store CAP water underground to help meet future needs in the event of a shortage of Colorado River water.

While CAWCD would have some ability to increase its ad valorem tax rates to help make up for a loss of revenues from sales of surplus NGS power (and the dollar-for-dollar increase in CAWCD's annual repayment obligation that would result), that ability is constrained by the statutory limits on CAWCD's taxing authority and the fact that revenues from CAWCD's tax collections are largely devoted to other purposes. As a practical matter, much if not all of the impact of the loss of revenues from surplus power sales would probably fall on our M&I customers.

Only our M&I water users are obliged to pay water service capital charges (these charges are not collected from non-Indian agricultural or Indian CAP water users). The charge is levied on each acre-foot of an M&I user's contractual entitlement to CAP water, whether that user takes delivery of any CAP water or not. In 2010, the M&I water service capital charge will be \$15 per acre-foot. By 2012, however, we have projected that the M&I water service capital charge will be reduced to zero, in consideration of the expected market value of surplus NGS power and our belief that revenues from the sale of surplus NGS power will be more than sufficient to fully meet our annual repayment obligation. If these revenues were unavailable, because the Plant was forced to close by 2016, the M&I water service capital charge would have to be increased to about \$80 per acre-foot to fully replace the lost revenues from sales of surplus NGS power.<sup>20</sup>

---

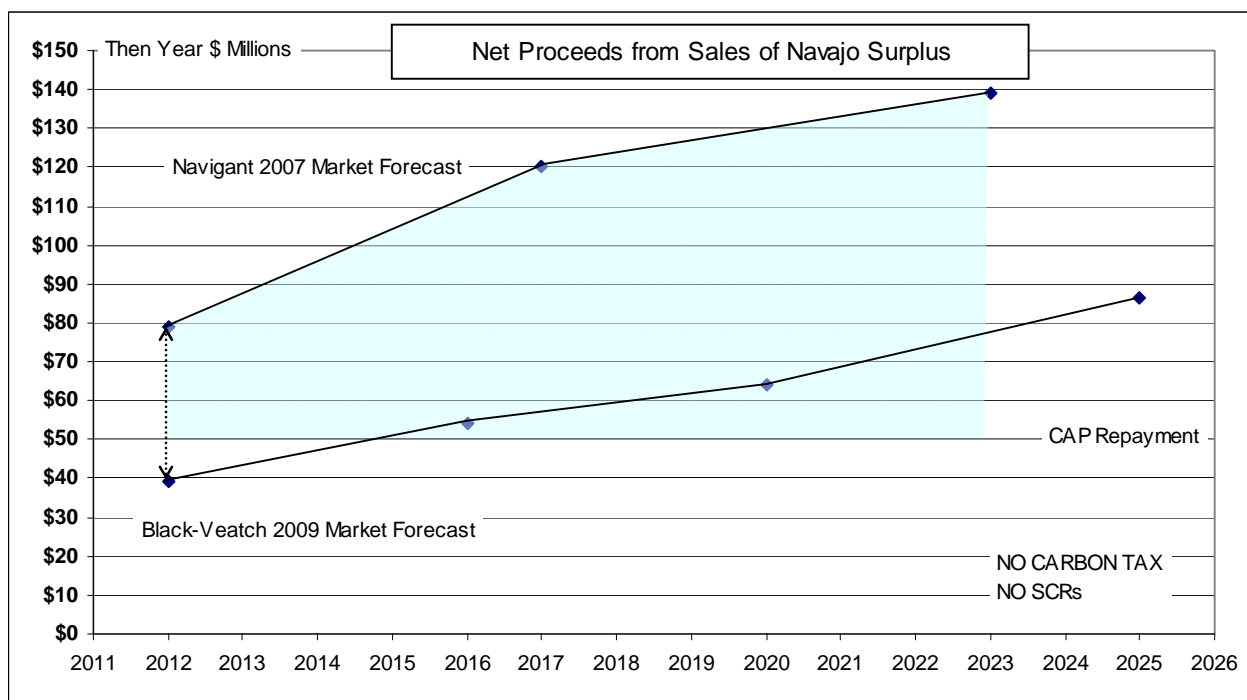
<sup>19</sup> The actual amount due from CAWCD to the United States each year on CAWCD's repayment obligation for the CAP is dictated by the amortization schedule in CAWCD's Repayment Contract and the schedule of annual payments set forth in the Repayment Settlement. The amount due from CAWCD varies somewhat from year to year, but is approximately \$55 million per year.

<sup>20</sup> \$55,000,000 (the annual payment due from CAWCD) minus \$6,000,000 in revenues to the Development Fund from sources other than surplus NGS power sales, divided by 620,678 acre-feet, the total, current M&I entitlement.

This would result in increased annual charges of about \$11.4 million to the City of Tucson and about \$9.6 million to the City of Phoenix.

(b) The impact of Plant closure on excess revenues to the Development Fund

When net revenues from surplus NGS power sales reach about \$50 million per year, they begin to exceed CAWCD's annual repayment obligation for the CAP.<sup>21</sup> This is expected to occur no later than the year 2015, according to Navigant and Black and Veatch estimates of the value of surplus NGS power. Thereafter, sales of surplus NGS power are expected to generate tens of millions of dollars in revenues in excess of the amount owed each year by CAWCD – as much as \$60 million to \$90 million *per year* between 2016 and 2023 alone. Under the Arizona Water Settlements Act of 2004, these revenues are pledged to the direct benefit of the United States and Arizona Indian tribes. CAWCD has assumed in its long-term financial plan that NGS would continue to operate through the end of the CAP repayment period in 2046, and thus that such revenues would continue to benefit CAWCD, the United States and Indian entities well beyond the 2023 timeframe.



As explained above, CAWCD's cash payments and the other revenues dedicated to CAP repayment are deposited each year in the Lower Colorado River Basin Development Fund where they become available for the purposes specified in the Arizona Water Settlements Act of 2004, after having been applied first against CAWCD's repayment obligation. The Repayment Settlement established a cascading flow of funds for monies deposited in the Development Fund.

<sup>21</sup> The reason is that miscellaneous revenues to the Development Fund (revenues other than from sales of surplus NGS power) contribute about \$6 million per year toward CAWCD's \$55 million annual repayment obligation for CAP.

The Settlements Act carried this flow of funds forward into amendments to Section 403 of the Basin Project Act.<sup>22</sup> This flow of funds is illustrated in the figure attached to this letter.

Given the fact that revenues to the Development Fund are currently only about half of the amount due from CAWCD each year, no monies are currently available in the Development Fund for the "second cascade" established by the Settlements Act, i.e., the cascade that applies to amounts deposited in the Development Fund that are in excess of CAWCD's annual payments. However, that is expected to change significantly after 2011. The analyses developed for CAWCD by Navigant and Black and Veatch of the value of surplus NGS power indicate that, by 2023, net revenues from the sale of such power, *that are in excess of CAWCD's required, annual payment*, are projected to fall between a low of about \$25 million and a high of about \$90 million a year. These amounts would be available for the second cascade under Settlements Act and would contribute very substantially to the payment of the fixed OM&R costs of delivering CAP water to Indian tribes, thereby relieving the tribes of those costs and limiting water delivery charges to tribes to energy charges only for a much longer period of time than if revenues to the Development Fund consisted only of CAWCD's annual payments. The loss of these excess revenues would constitute a substantial detriment to the United States and those Arizona Indian tribes that have or expect to have congressionally approved settlements of their water rights claims.

#### Summary and Conclusions

NGS provides a low cost source of power for CAP pumping that we cannot easily or inexpensively replace. While a requirement to install LNB/SOFA would not have a significant impact on CAP water delivery charges, a requirement to install SCRs would. At best, CAP energy charges would have to be increased by about \$10 per acre-foot (20 percent) simply to cover the increased capital and OM&R costs of the control technology. The installation and operation of SCRs would also reduce revenues to the Development Fund from the sale of surplus NGS power by about \$9 million per year,<sup>23</sup> or by about \$175 million in total between 2016 and 2036, not including interest. This assumes that installing SCRs would not be judged by the NGS participants to be cost-prohibitive and that the participants would have at least 20 years to amortize the costs of controls. A \$10 increase in our energy charges, over and above that which would occur as a result of normal cost escalation, would have a significant detrimental effect on agricultural users of CAP water supplies, non-Indian and Indian alike, and might all but eliminate deliveries to these classes of water users, contrary to the purposes of the Colorado River Basin Project Act and the Arizona Water Settlements Act. This problem would only be exacerbated for Indian water users because a reduction in Development Fund revenues would reduce monies available for the payment of the fixed OM&R charges for Indian water deliveries, making it necessary that Indian water users pay at least a portion of the fixed OM& charges of CAP water delivery sooner than they would otherwise have anticipated.

If, given the enormous costs of SCRs and the other uncertainties currently facing the Plant, the participants decided to close the Plant by 2016, the assumed completion date for SCRs, then the costs to CAWCD and its water users of the control technology would increase dramatically.

---

<sup>22</sup> See Section 107 of the Arizona Water Settlements Act of 2004, Public Law 108-451, codified at 43 U.S.C. § 1543(f).

<sup>23</sup> \$5.45 per mwh multiplied by 1.6 million mwh of surplus NGS power.

Ms. Colleen McKaughan

December 18, 2009

Page 15

Plant closure would necessitate increases in CAP energy charges on the order of 50 to 300 percent, as well as increases in M&I water service capital charges on the order of \$80 per acre-foot. Plant closure would also result in the loss of tens of millions of dollars in revenue to the Development Fund in excess of the annual payments due from CAWCD – losses on the order of \$25 million to \$90 million a year by 2023. These revenues would otherwise provide substantial benefits to the United States and Arizona Indian tribes by significantly reducing the costs to the tribes of CAP water deliveries.

As we said in our October 28<sup>th</sup> comments, CAWCD's greatest fear is that, under current conditions, the establishment of a NO<sub>x</sub> emission limit that requires the installation of SCRs could cause the participants to decide that the Plant is no longer viable economically. That would have disastrous consequences for the CAP and its water users. For this and the other reasons set forth in our comments, EPA should determine that a NO<sub>x</sub> emission limit of 0.24 pounds per million British thermal units (0.24 lb/MBtu), achieved using LNB/SOFA on Units 1-3 of NGS, is BART for NGS. EPA will have the ability in the future to consider using the "reasonable progress" provisions of its Regional Haze Rules to require more of NGS in subsequent planning periods, if necessary to meet the rules' requirements and objectives. It would make no sense for EPA to set a standard today that would risk the future of the Plant, particularly when another control option is available that does not entail that risk, yet achieves a calculable visibility benefit at a reasonable cost.

Thank you for the opportunity to submit this additional information. Please contact us if you have any other questions or need further information from us about this or any other aspect of CAWCD's comments.

Sincerely,

/s/

David. V. Modeer  
General Manager

## Lower Colorado River Basin Development Fund Flow of Funds Under Arizona Water Settlements Act

(\$ million in typical year)

