

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP)
Public Workshop on Proposed Amendments to NAC 445B
Air Controls: Air Pollution

April 23, 2012

Nevada Dept. of Transportation
Room 301
1263 South Stewart Street
Carson City

Teleconference to
NDEP Red Rock Conference Room
2030 E. Flamingo Road, Ste. 230
Las Vegas

MEETING SUMMARY

ATTENDEES:

Workshop Chair: Adele Malone, Supervisor, Bureau of Air Quality Planning

NDEP Staff: Mike Elges, Deputy Administrator, NDEP; Larry Kennedy, Bureau Chief-BAPC;
Rob Bamford, Bureau Chief-BAQP; and Paul Williams, Environmental Scientist III, BAQP

Public:

Carson City:

Starla Lacy, NV Energy
Stephen McKay, US Navy
Tara Hess, Washoe Tribe of NV & CA
Tansey Smith, Inter-Tribal Council of NV
Joe Johnson, Private Citizen
Allen Baggi, Nevada Mining Association
Patrick Ruetur, Granite Construction
Kerensa King, US Fish and Wildlife Service
Dan Galpern, Western Environmental Law Center
D. Wendell Osbey, V.T. Gold

Las Vegas:

Jane Feldman, Sierra Club
Lynn Davis, National Parks Conservation Association
Alan O'Neill, O'Neill Consulting
Vernon Lee, Moapa Band of Paiutes
Chris Roller, American Heart Association
Lynn Goya, Sierra Club
Elspeth Cordua, Sierra Club
Vinny Spotleson, Western Clean Energy Campaign

CALL TO ORDER:

Ms. Malone called the Workshop to order at 9:34 a.m. She introduced herself and asked each person in the audience to state their name and affiliation both in Carson City and Las Vegas. She explained the purpose of the Workshop was to solicit public comment on two regulations being proposed by the Nevada Division of Environmental Protection (NDEP):

1. LCB File No. R038-12, which updates:
 - NAC 445B.22097, the federal standards side of the table of ambient air quality standards, and
 - NAC 445B.221, which adopts federal regulations by reference; and
2. LCB File No. R051-12, which revises the determination of best available retrofit technology (BART) for nitrogen dioxide (or NO_x) at the Reid Gardner Generating Station (RGGS) in southern Nevada.

Ms. Malone said she would present the first proposed regulation and Mr. Bamford would present the second.

She asked if there were any questions about the agenda. There being none, she then reviewed the timeline for the adoption of these regulations. They would be heard by the State Environmental Commission (SEC) at their Regulatory Hearing on June 12, 2012 in Carson City.¹ There will be a thirty day comment period prior to the hearing. If adopted, the regulations will be reviewed by the Legislative Commission or the Subcommittee to Review Regulations within approximately four to six weeks after the SEC Hearing. They become effective upon approval by the Legislative Commission or Subcommittee.

LCB File No. R038-12

Ms. Malone outlined the changes proposed under LCB File No. R038-12. The regulation proposes to update two provisions in the Nevada Administrative Code (NAC). First, NAC 445B.22097 contains a table of both state and federal ambient air quality standards. It was last revised in 2004. Since 2004, the U.S. Environmental Protection Agency (USEPA) has revised most of the national ambient air quality standards; we are, therefore, proposing to update the federal side the standards table to align it with the current national standards. The regulation updates the national standards for:

- *Ozone*, revised by USEPA in 2008;
- *Nitrogen dioxide*, revised by USEPA in 2010;
- *Sulfur dioxide*, revised by USEPA in 2010;
- *Particulate matter*, revised by USEPA in 2006; we are adding the PM_{2.5} or fine particle standard, which USEPA established in 1997, but is not yet in the table. A definition of PM_{2.5} is added, also; and
- *Lead*, revised by USEPA in 2008.

¹ After the workshop, R051-12 was removed from the June 12, 2012 SEC Hearing agenda and moved to the October 10, 2012 SEC agenda.

The explanatory notes in the table are also revised to coordinate with the revision of the standards levels.

The second update in this regulation is to NAC 445B.221, which adopts federal regulations by reference. Two updates are proposed:

- a) Adoption of USEPA's July 20, 2011 rule that defers accounting for carbon dioxide (CO₂) emissions generated from bioenergy and other biogenic sources under the Prevention of Significant Deterioration (PSD) and Title V permitting programs. Nevada implements these federal permitting programs. In order to implement any federal amendments to these programs, we have to adopt them by reference into the state regulations. It is necessary to adopt this federal rule so that Nevada sources will not have to take emissions of CO₂ into account for a period of three (3) years for PSD and Title V permit actions.
- b) The regulation also proposes to adopt the federal amendments that revise EPA-approved methods for measuring filterable PM₁₀ and PM_{2.5} and condensable particulate matter emissions from stationary sources. (Part 51 Appendix M) This will provide consistency with federal procedures for Nevada's regulated industry.

Ms. Malone asked if anyone had any questions about these proposals.

Mr. Baggi wanted the record to reflect that the changes to the ambient air quality standards table are all to the federal side of the table only, and the regulation will not add any new permit requirements or any modified modeling requirements. Ms. Malone said that was correct. This is simply an update to the federal standards. The state standards, which are what permit actions are based on, are not being revised.

Mr. Johnson made an early comment on the BART regulation (LCB File No. R051-12). He said that NV Energy is presently balancing their supply between the north and south, and they are proposing to consolidate rates at some future date. Therefore, the BART regulations may have an economic impact on residential customers in the north in the future. He stated that as a residential customer in the north, he was willing to pay more to get the stricter standards at the RGGGS. He went on to ask whether the state could adopt stricter standards than what USEPA was proposing. It was not clear if Mr. Johnson was referring to the BART regulation or the ambient air quality standards table. Since the BART regulation had not been presented yet, Ms. Malone responded that Nevada could revise the Nevada side of the standards table, but that would be in a future action.

LCB File No. R051-12

Moving on to R051-12, Ms. Malone made a clarification. There had been an error in what was posted on the SEC website initially for just a few days: the required installation date for the BART controls erroneously read April 30, 2016. The correct date is June 30, 2016 and has been changed on the web site.

Mr. Bamford presented R051-12. The proposed regulation reduces the emission limit on unit 3 at RGGGS from 0.28 to 0.20 lb/MMBtu and changes the averaging period for all 3 subject-to-BART

units from a 12-month rolling period to a 30-day rolling period, averaged across all three units. It also revises the control technology from rotating opposed fire air (ROFA) with Rotamix to low NO_x burners with overfire air and selective noncatalytic reduction (SNCR). The change in the control technology is based on a year of operational experience with ROFA with Rotamix on unit 4 at RGGGS. After a year of operation, NV Energy discovered that the control technology was not working as the vendor guaranteed. So, the NDEP had to reevaluate control options to find one that would meet the emissions limits more readily. The proposed regulation also changes the installation/operating date from January 1, 2015 to June 30, 2016 because of the revision to the selected technology.

Mr. Lee, representing the Moapa Band of Paiutes, expressed concern regarding the major health problems on the reservation, which is right next to the power plant. The tribe favors the most stringent controls possible. They cannot secure any type of funding to do exposure studies. Mr. Bamford thanked Mr. Lee for his comments and noted that the NDEP's analysis to determine the appropriate controls for RGGGS is on NDEP's website; and recently USEPA did an independent analysis as well, which is available on their sites. Mr. Lee was unaware of any consultation with the tribe on this matter. Ms. Malone stated that there has been an outreach as a part of a regional process through the Western Regional Air Partnership and the tribes are a part of that process. Also, the tribe is on the NDEP's distribution list for notice of regulatory amendments. Ms. Smith, the State Tribal Liaison Officer indicated that she had worked with the chairman and environmental officer of the Moapa Band on this matter.

Mr. Galpern, representing the Moapa tribe and the Sierra Club gave a lengthy presentation; a written copy is attached to this meeting summary.

Ms. Davis, speaking for the National Parks Conservation Association, supported Mr. Galpern's proposal that the NDEP delay action on the proposed regulation until USEPA has completed their rulemaking, because they believe USEPA will require more stringent controls; or alternatively, the NDEP should take a leadership role and require the more stringent SCR controls.

Mr. O'Neill cited his 34 years working for the National Park Service as Superintendent at Lake Mead National Recreation Area, as well as public land work in the Las Vegas area. He discussed the Clean Air Act (CAA) and the Regional Haze Rule and Nevada's impact on nearby Class I areas. He mentioned the value of the federal Prevention of Significant Deterioration of air quality permit program. He encouraged the NDEP to take a leadership role in requiring the most stringent control requirements at RGGGS. He noted that there are major benefits from national recreation areas and other public lands to Nevada's economy. He pointed out that many of the public lands in the Las Vegas area, including Lake Mead, Valley of the Fire State Park and the world class Neon to Nature trail system, are affected by RGGGS. He urged the NDEP to do the "right thing" and require the best retrofit technology (SCR) at RGGGS. He pointed out that SCR is already being required for other power plants throughout the southwest.

Mr. Lee indicated that the Moapa Band is a national treasure, and the 300 remaining members' lives are at risk. He said all kinds of toxic chemicals are being emitted from the RGGGS, and they

are in very close proximity. The tribe has been averaging one death every two months this last year. He said the power plant had grown significantly over the years, and contributes seriously to the health risks.

Mr. Galpern said that EPA's decision to hold a public hearing on the reservation follows a communication from the tribe to Lisa Jackson at USEPA citing the Agency's Environmental Justice Plan and how it applies to the Moapa Band. He further pointed out that in the materials on the SEC's web site relating to this regulation, the NDEP states that the regulation would not have an immediate short or long term impact on the company because the costs would be passed on to the ratepayers. He felt the same would be true if the NDEP were to require SCR as BART. He suggested that there is nothing to stop the NDEP from delaying action on this regulation until USEPA has completed its work and made its final determination.

Mr. Bamford said that the State is required to have its regulations mirror the federal regulations for BART. Because USEPA proposed these limits, we are proposing to match them. If USEPA were to come up with something different, we would change our regulations to match their final determination. We are trying to be timely about getting our regulations adopted. He pointed out that USEPA's hearings for the tribe and the public will describe how USEPA derived these limits and the control technology, and those would be the best venues to talk about the technology and emission limits.

Mr. Galpern objected, because he does not see anywhere in state law a requirement to mirror federal requirements. He believes that the CAA directs the federal government to establish a floor for standards, and that states can (and should) do more. He pointed out that several years ago Clark County went beyond the federal minimum in its SIP for carbon monoxide and the courts upheld the standard. The state, in his judgment, has an independent responsibility to protect its citizens and can require SCR as BART. Ms. Malone pointed out that the state is responding to USEPA's regional haze rule, which is not designed to protect health.

Mr. Johnson sees this as a better regulation, but not the best. Other units throughout the nation are required to install SCR and the state has the obligation under state law to do better, because the technology is there. As a ratepayer, he is willing to bear the minimal additional cost from the installation of the most stringent technology.

Ms. Goya, speaking as a concerned citizen, reviewed the health effects of coal power plants. She noted that SCR is used at over 200 coal-fired units at power plants throughout the United States, and there is no reason Nevada should subject its population to less stringent controls than other states. There is no need to rely on the federal government to protect our citizens. In addition, Nevada has lots of potential for clean energy, and there is no need to import dirty coal creating serious pollution issues. She urged a delay in moving on the proposed regulation or go for the higher standards. She said **Chris Roller** from the American Heart Association was here, but had to leave. Speaking for him and the American Heart Association, they believe that pollution from coal power plants have a direct impact on people's heart health and increases morbidity.

Ms. Feldman, speaking for the Sierra Club, said that the mission of the Sierra Club is to explore, enjoy and protect the natural resources, the natural places on the planet. One of their priority campaigns nationwide is to clean up pollution from coal-fueled power plants. Because of the size of RGGGS at 612 megawatts, it releases 4,000 tons of NO_x into the air every year. She referred to a report called “The Toll from Coal,” which states that RGGGS contributes \$28 million to public health costs every year. She also reviewed nationwide health impacts from soot; NO_x is a precursor to soot. She said soot or fine particulate material is responsible for 60,000 pre-mature deaths every year. Second rate standards and technology to clean up RGGGS are just not good enough. SCR is used throughout the southwest, and we should expect it here. The Sierra Club is advocating for stricter emission limits and SCR.

Ms. Cordua said that the NDEP has a responsibility to protect the environment, visibility and the residents of Nevada, particularly those close to the source. The BART standards proposed by the NDEP are not acceptable and do not meet the requirements of the CAA. Because of the Tribe’s proximity to RGGGS, she would hope that no decisions occur before the Tribe is heard.

Mr. Spotleson stated he was here to support what others have said. The NDEP needs to take a leadership role in addressing the issues at RGGGS. There is a lot of evidence of frequent violations that have occurred there. They have not seen a lot of corrective actions by the NDEP, except for actions that allow the plant to expand and continue operation. If you continue to expose people to this toxic pollution, then you should put on the best control protection possible. He emphasized the corrective action powers the state has and asserted that EPA would follow the State’s action.

Ms. Hess said the Washoe Tribe is fortunate to live in a fairly clean area, but that they do support their neighbor tribes.

Adjournment:

There being no further questions or comments, Ms. Malone adjourned the meeting at 10:41am.

Respectfully submitted,

Paul A. Williams

Testimony of Dan Galpern
Before the Nevada Division of Environmental Protection
April 23, 2012

Good morning. I represent the Moapa Band of Paiutes and the Sierra Club.

These comments apply to NDEP's proposed state rule to limit Reid Gardner NOx pollution to a limit of 0.20 lb/106 Btu averaged over Reid Gardner units 1---3 over a 30---day rolling average, as opposed to adopting a standard 3 to 4 times more restrictive as has been adopted or mandated elsewhere, including recently for the San Juan Generating Station.

Introduction:

The Moapa Band of Paiutes is a federally recognized Tribe whose Reservation and center of living are in the shadow, within the plume, and described by summer-prevailing wind Roses of the RG coal-fired power plant, its mountain of coal ash, and its edifice of wastewater ponds.

The Tribe receives a maximum of the pollution and a minimum, at best, of benefits deriving from Reid Gardner. Instead, on a number of days per year, pollution from the facility renders impossible the traditional way of life on the Reservation. The Tribe is developing solar resources on the Reservation as part of its efforts to set a good example of the clean energy path that should be pursued by the state, the nation, and the company, instead of continued reliance on coal that is in dis-proportionate part responsible for the present environmental and public health crisis.

The Sierra Club is the nation's largest and most effective environmental organization, with members in Nevada and every state. Its mission includes defending the right to clean air and clean water of Members of the Tribe and other persons impacted by the emissions from Reid Gardner and other coal plants.

In Re.: Prematurity

As an initial matter, we note that it is premature, at best, for the state to adopt EPA's presently proposed limits on NOx at this time, before the dust is settled on EPA's proposal.

The Tribe and the environmental community are presently undertaking analysis of EPA's proposal, and the comment deadline for that is May 14. EPA intends to make a decision by July, and has committed to the Tribe that it will seriously consider its views and the impacts of EPA's proposed limits.

It is at best a waste of state resources for NDEP to proceed to amend the SIP pursuant to a proposed standard that, under the law, must be altered or that may well be challenged. We accordingly request that NDEP delay consideration of the SIP until the federal process is final.

In turn, the Tribe and the Sierra Club can commit to providing NDEP with substantive and technical comments by the end of next month.

Summary of Extant Concerns Pending Additional Analysis

Reserving the right to supplement after further analysis of the assumptions and methodology utilized by EPA in its recent BART determination, we offer several points at this juncture:

(1) Stricter Limits are Required

EPA's proposal is the end result of a process that fails to appropriately account for the rate of pollution control that would be realized by adoption of SCR-achievable limits. It also fails to appropriately analyze the cost effectiveness of SCR, fails to eliminate SCR as BART under factors fairly contemplated by the relevant provisions of the CAA, and fails adequately to explain why SCR is not proposal for adoption for Reid Gardner when it has been mandated elsewhere. Attached as Exhibit 1 to this letter, please find the Aug. 11, 2011 comments to EPA from an Environmental Consortium of which Sierra Club was a member. We hereby incorporate those comments as relevant here, including the expert technical comments to which the Consortium comments refer, and emphasize again our Intention to submit additional technical and legal comments by the end of May (in time For NDEP to reconsider its recommendation to the State Environmental Commission (SEC)).

(2) The Tribe Counts

EPA's analysis asserts that the proposed rule "does not have direct tribal implications as Specified by Executive Order 13175 (65 FR 67249, November 9, 2000)." This is simply false, and seems intended to convey nothing but a position in preparation to litigation, rather than a fair reading of obligations to an community that is overburdened by the pollution from the polluter next door. To the extent that NDEP also subscribes to the view that the Tribe's proximity to Reid Gardner warrants no attention, then NDEP will have adopted EPA's proposed rule without minimal reflection of the impact of adoption upon persons who are so situated geographically as to bear the brunt of the too-lax standards.

(3) Discretion under the law

Even if, contrary to a plain meaning of federal law, NDEP had discretion to adopt a range of limits, under Nevada law NDEP still must exercise its discretion so as to "protect human health and safety, prevent injury to plant and animal life, prevent damage to property, and preserve visibility and scenic, esthetic and historic values of the State," and otherwise fully utilize "reasonably available methods to prevent, reduce or control air pollution throughout the State of Nevada." NRS 445B.100. Put another way, state law does not give you the option to require lax controls that will lead to needless injury and death where there are "reasonably available methods" that would effectively control smog-forming emissions and associated poisons from the facility.

To the extent, moreover, that Nevada law compels protection of the public health to a greater extent than the minimum required under federal law, that is consistent with the Structure of the CAA itself. Indeed, Congress made clear in the CAA that prevention of air pollution is primarily the responsibility of states. 42 USC § 7401(a)(3). This means that federal law sets a minimum standard, and that states may do more to protect the public health of their residents. *Cf.* 42 USC §§ 7412(d)(7), 7416, and 7515.

(4) Economic Viability

NDEP has already taken the position, in advising the SEC and public, in anticipation of the SEC's June 12, 2012 scheduled hearing on the NDEP proposal, that its proposed regulation:

“will not have an immediate or long-term adverse economic impact on the public or the business community. NV Energy places the costs of environmental compliance into its rate base. This proposed regulation was developed using cost effective technology choices aimed at achieving optimized environmental benefit. Therefore, the impact on the public is expected to be minimal. There will be no additional costs to the NDEP for enforcement of The proposed regulation and the regulation does not overlap, duplicate or conflict with any Regulations of other government agencies.”

http://www.sec.nv.gov/main/hearing_0612.htm

The same points would govern if NDEP determined that SCR represented BART. The company would not be disadvantaged, the air would be cleaner, persons on the Reservation and elsewhere would breath easier, and the impact on the public is expected to be minimal.

Conclusion:

EPA has acknowledged that breathing ozone reduces lung function, inflames the lining of the lungs, and permanently scars lung tissue. Accordingly, failure to impose the most stringent cost effective controls will consign persons on the Reservation and elsewhere to unnecessary disease and early death, as Moapa Tribal Chairman William Anderson noted to EPA Administrator Lisa Jackson earlier this month. William Anderson to Lisa Jackson, April 3, 2012, attached hereto as Exhibit 2 to this letter. The Chairman noted, that “this failure itself constitutes a renewed environmental injustice, one that compounds the damage of decades of preventable pollution imposed on my people. Alternatively, you can choose to act firmly to meet Congress's visibility goals with the notable co-benefit of protecting public health and honoring your Agency's long-standing environmental justice commitments.”

Precisely the same considerations attach to NDEP's decisions to amend, and how to amend, the SIP with respect to the Reid Gardner coal-fired power plant. Your agency may elect to establish firm requirements for the control of NOx (and other) pollution, and thereby require the company to internalize some of the costs that it now imposes on persons downwind of the plant through impaired health and early death.

Thank you for your consideration of these remarks to which, again, we reserve the right to supplement by the end of May. Please let me know if you have any question about the position of the Moapa Band of Paiutes and the Sierra Club with respect to your proposed SIP revisions.

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For the Moapa Band of Paiutes and the Sierra Club

SIERRA CLUB
NATIONAL PARKS CONSERVATION ASSOCIATION
CITIZENS FOR DIXIE'S FUTURE
DEFEND OUR DESERT
FRIENDS OF GOLD BUTTE
GRAND CANYON TRUST
WESTERN RESOURCE ADVOCATES

VIA ELECTRONIC MAIL

August 22, 2011

Mr. Thomas Webb
U.S. Environmental Protection Agency, Region 9
Planning Office, Air Division
75 Hawthorne Street
San Francisco, CA 94105
Email: webb.thomas@epa.gov

RE: Approval and Promulgation of Air Quality Implementation Plans; State of Nevada; Regional Haze State Implementation Plan (Docket ID No. EPA-R09-OAR-2011-0130)

Dear Mr. Webb,

The undersigned organizations submit the following comments on the United States Environmental Protection Agency's ("EPA's") proposed approval of Nevada's Regional Haze SIP ("Proposed SIP"), as published in the Federal Register on June 22, 2011. U.S. EPA [EPA-R09-OAR-2011-0130, FRL-9320-5]; *Proposed Rule: Approval and Promulgation of Air Quality Implementation Plans; State of Nevada; Regional Haze State Implementation Plan* (76 Fed Reg. 36450). On July 22, 2011, EPA extended the comment period on the Proposed SIP to August 22, 2011. 76 Fed. Reg. 43963. These comments hereby incorporate the comments of our technical experts, Bill Powers, P.E., Petra Pless, D.Env and Dr. Andrew Gray, which are being submitted along with this letter.

The undersigned organizations represent a consortium of environmental groups with thousands of members in the western United States. These groups and their members include hikers, road and mountain bikers, recreational fisherman, backcountry campers, National Park Service and Forest Service staff, naturalists, biologists and others who enjoy and depend on the Class I area airsheds and other environmental resources affected by EPA's Proposed SIP.

I. Background on Regional Haze

The requirements of the Clean Air Act

Congress declared as the national goal, the “prevention of any future, and the remedying of any existing, impairment of visibility in the mandatory class I Federal areas which impairment results from manmade air pollution.” 42 U.S.C. §7491(a)(1). “Manmade air pollution” is defined as “air pollution which results directly or indirectly from human activities.” 42 U.S.C. §7491(g)(3). Congress adopted the visibility protection program to protect the “intrinsic beauty and historical and archeological treasures” of specific public lands.¹ To protect these treasures, the regional haze program establishes a regulatory floor and requires states, tribes, and EPA (where no state or tribal implementation plan exists) to design and implement programs at least as stringent as the national floor to curb haze-causing emissions located within their jurisdictions. In order to meet this goal, the relevant entity is required to design an implementation plan to reduce, and ultimately eliminate, haze from air pollution sources that may reasonably be anticipated to cause or contribute to visibility impairment for any protected area located within or beyond that state’s or tribe’s boundaries. In creating and implementing the plan, the implementing entity has an unparalleled opportunity to protect and restore regional air quality by curbing visibility-impairing emissions from some the nation’s oldest and most polluting facilities.

More specifically, states and tribes are required to submit state implementation plans (“SIPs”) or tribal implementation plans (“TIPs”) that “contain such...measures as may be necessary to make reasonable progress toward meeting the national goal” if they host federally protected areas or if the emissions of a facility located within a state “may be reasonably be anticipated to cause or contribute to any impairment of visibility” for a protected area located beyond their borders. 42 U.S.C. §7491(b)(2).

Each SIP/TIP must provide emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress towards meeting the national visibility goals. 42 U.S.C. § 7491(b)(2). Two of the most critical features of a SIP/TIP are requirements for (1) the installation of Best Available Retrofit Technology (“BART”) for delineated major stationary sources of air pollution and (2) a long-term strategy for making reasonable progress towards the national visibility goal. 42 U.S.C. § 7491(b)(2)(A) &(B).

Adopted in 1990, Section 169B of the Clean Air Act expresses a broadened concern with deteriorating visibility, instructing EPA to research visibility impairment in certain national parks and wilderness areas. 42 U.S.C. § 7492(a)(1). In response to § 169B of the CAA, EPA promulgated the Regional Haze Rule (Haze Rule), 40 C.F.R. §§ 51.308-309, which sets out requirements for SIPs/TIPs to achieve natural visibility conditions in the nation’s Class I areas

¹ See H.R. REP. NO. 95-294, at 203–04 (1977).

by 2064. 40 C.F.R. § 51.308(d). The rule lays out two approaches to achieving this goal, outlined in Sections 308 and 309. Section 308 is a path for fulfilling obligations under the Haze Rule that is available to all states and tribes; Section 309 is an alternative path open to a limited number of states and tribes.

Section 308 describes the requirements imposed upon most states and tribes for the development of regional haze plans, and includes, *inter alia*, the development of reasonable progress goals towards the extinction of man-made haze in Class I areas by 2064; calculations of baseline and natural visibility conditions; a long-term strategy for regional haze; monitoring strategy; periodic reports and revisions; and determination of BART limits. BART is defined as an emission limitation that is:

... based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by an existing stationary facility. The emission limitation must be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

40 C.F.R. §51.301. BART limits are required for major stationary sources that were in existence on August 7, 1977 and began operating after August 7, 1962 and emit air pollutants that may reasonably be anticipated to cause or contribute to any impairment of visibility in a Class I area. 42 U.S.C. § 7491(b)(2)(A). The term “major stationary source” is defined as a source that has the potential to emit 250 tons or more of any pollutant and falls within one of 26 categories of industrial sources defined by the Act. 42 U.S.C. § 7491(g)(7). A BART-eligible source is one that meets the above criteria and is responsible for an impact on visibility in a Class I area of 0.5 deciview or more. 40 C.F.R. Part 51, Appendix Y. BART must be installed and operated no later than five years after the SIP/TIP/FIP² approval. 40 C.F.R. §51.302(c)(4)(iv).

EPA has adopted BART Guidelines establishing the methodology to be used for arriving at BART determinations. This methodology involves a 5-step process. The five steps for determining BART are:

STEP 1 -- Identify All³ Available Retrofit Control Technologies,

² “Federal Implementation Plan”

³ In identifying “all” options, you must identify both the most stringent option and a reasonable set of options for analysis that reflects a comprehensive list of available technologies. It is not necessary to list all permutations of available control levels that exist for a given technology –

- STEP 2 -- Eliminate Technically Infeasible Options,
- STEP 3 -- Evaluate Control Effectiveness of Remaining Control Technologies,
- STEP 4 -- Evaluate Impacts and Document the Results, and
- STEP 5 -- Evaluate Visibility Impacts.

Section IV.D. of the BART Guidelines at 40 C.F.R. Part 51, Appendix Y. Although it was subject to a December 17, 2007 deadline, Nevada submitted its regional haze SIP to EPA on November 18, 2009.

Visibility and regional haze impacts

Regional haze results from small particles in the atmosphere that impair a viewer's ability to see long distances, color, and geologic formations. While some haze causing particles result from natural processes, most result from anthropogenic sources of pollution. Haze-forming pollutants, including sulfur dioxide (SO₂), nitrogen oxides (NO_x), particulate matter (PM), volatile organic compounds (VOCs), sulfuric acid (H₂SO₄) and ammonia (NH₃), contribute directly to haze or form haze after breaking down in the atmosphere. These air pollutants contribute to the deterioration of air quality and reduced visibility in our national parks and wilderness areas. Visibility impairment is measured in deciviews ("dv"), which is a measure of the perceptible change in visibility. The higher a deciview value is, the worse the visibility impairment. Emissions from coal plants, such as the Reid Garder Generating Station ("RGGs") can travel long distances in the atmosphere and contribute to interstate visibility impairment in national parks beyond the borders of state boundaries.

As noted by the Western Regional Air Partnership, "seventy five percent of the nation's Class I areas are in the West. Today, the average visual range in Western national parks and other Class I areas is about one-half to two-thirds of what would exist without human-caused impairment. This haze is only one of the effects of air pollution in the West."⁴

Public health impacts

The same pollutants that contribute to visibility impairment also harm public health. The fine particulates that cause regional haze, PM_{2.5}, are a major public health concern because they can be inhaled deep into the lungs. Fine particulates can cause decreased lung function, aggravated asthma, and premature death in people with heart or lung disease. NO_x and VOCs can also be precursors to ground level ozone, or smog.

the list is complete if it includes the maximum level of control each technology is capable of achieving.

⁴ http://www.wrapair.org/forums/cc/projects/handouts/0612_WRAP_Flyer.pdf

According to EPA, the total annual cost of implementing the Regional Haze Rule will range from 1.4 – 1.5 billion dollars.⁵ However, based on the attendant reductions in air pollution, EPA determined that in 2015, enforcement of the Regional Haze Rule will provide health benefits valued at \$8.4 – \$9.8 billion annually – preventing 1,600 premature deaths, 2,200 non-fatal heart attacks, 960 hospital admissions, and over 1 million lost school and work days every year.⁶

While the Regional Haze Rule was designed to provide redress for visibility impairment, the BART Guidelines expressly provide for the consideration of non-air quality environmental impacts. This consideration includes the environmental impact on human health.

Ecosystem impacts

Consideration of non-air quality impacts also extends to impacts on wildlife and habitat as well as natural and cultural heritage. The same haze-causing emissions also harm terrestrial and aquatic plants and animals, soil health, and moving and stationary waterbodies – entire ecosystems – by contributing to acid rain, ozone formation, and nitrogen deposition. Nitrogen deposition, caused by wet and dry deposition of nitrates derived from NO_x emissions, causes well known adverse impacts on ecological systems.

For example, scientific investigations have already demonstrated that nitrogen is saturating the soil, plants and water of Rocky Mountain National Park at levels at least twice the “critical load” the ecosystem can tolerate. According to EPA, “[a]cid rain causes acidification of lakes and streams and contributes to the damage of trees at high elevations (for example, red spruce trees above 2,000 feet) and many sensitive forest soils. In addition, acid rain accelerates the decay of building materials and paints, including irreplaceable buildings, statues, and sculptures that are part of our nation's cultural heritage.”

Further, haze-causing pollutants are precursors to ozone. Ground-level ozone formation impacts plants and ecosystems by: “interfering with the ability of sensitive plants to produce and store food, making them more susceptible to certain diseases, insects, other pollutants, competition and harsh weather; damaging the leaves of trees and other plants, negatively impacting the appearance of urban vegetation, as well as vegetation in national parks and recreation areas; and reducing forest growth and crop yields, potentially impacting species diversity in ecosystems.”

⁵ EPA, Fact Sheet, Final Regional Haze Regulations for Protection of Visibility in National Parks and Wilderness Areas (June 2, 1999) at http://www.epa.gov/visibility/fs_2005_6_15.html

⁶ <http://yosemite.epa.gov/opa/admpress.nsf/a4a961970f783d3a85257359003d480d/a7f12f6cb64426885257022004fbd26!OpenDocument>.

Economic impacts

In rigorously addressing visibility and, more specifically, visibility-causing pollutants, western Class I areas stand to reap significant benefits and avoid serious consequences. Visibility causing pollutants have far-reaching impacts on local economies, human health, and the well-being of waterways, soils, plants, and wildlife – in other words, an entire population and ecosystems. Decreasing these pollutants will benefit all of these important areas of concern; failing to do so will cause or continue adverse impacts.

Tourism is critical to the economy of the western states. The national parks and landmarks potentially impacted by the Proposed SIP include Grand Canyon, Zion, and Joshua Tree. The towns surrounding these parks, monuments and landmarks are economically dependent on excellent air quality. In 2009, these three parks alone were responsible for hundreds of jobs.⁷ Parks attract businesses and individuals to the local area, resulting in economic growth in areas near parks that is an average of one percent per year greater than statewide rates over the past three decades.⁸

National parks also generate more than four dollars in value to the public for every tax dollar invested.⁹ Because of pollution, visitors to western parks now can only see around 60 miles away on bad days, where naturally they would be able to see double or triple that distance.¹⁰ Studies have shown that visitors value clean air in our national parks, are able to tell when it is hazy, and enjoy their visit less when haze is bad. Moreover, visitors are willing to alter their length of stay based on their perception of air quality.¹¹ Shorter park visits, or none at all, mean less time and money spent in gateway communities. An additional economic incentive behind protecting air quality is the necessary investment in pollution control technologies as their installation is a job-creating mechanism in itself. Each installation creates short-term construction jobs as well as permanent operations and management positions. Thus, installation of additional and upgraded pollution controls will result in jobs and revenue for the local workforce.

⁷ National Park Visitor Spending and Payroll Impacts, 2008. Daniel J. Stynes, Michigan State University, October 2009. (<http://web4.msue.msu.edu/mgm2/parks/MGM2System2008.pdf>)

⁸ Id.

⁹ Hardner and Gullison, "The U.S. National Park System, An Economic Asset at Risk" (November 2006) [prepared for the National Parks Conservation Association].http://www.npca.org/park_assets/NPCA_Economic_Significance_Report.pdf

¹⁰ Id.

¹¹ <http://cfpub.epa.gov/eroe/index.cfm?fuseaction=detail.viewInd&lv=list.listByAlpha&r=231326&subtop=341>

II. The Proposed SIP Fails to Implement BART for the Reid Gardner Generating Station

RGGS is a coal-fueled, steam-electric generating plant with four operating units. The first two nearly identical generating units went into service in 1965 and 1968. A third similar unit was added in 1976. Each of these three units produces 100 megawatts with Foster Wheeler boilers and GE turbine-generators. With a capacity of 257 megawatts, the fourth unit is the plant's largest.

Emissions from Nevada sources, including RGGS, are within the airshed of five prized Western Class I national parks and wilderness areas spanning three states outside of Nevada: Joshua Tree National Park in California, Grand Canyon National Park and Sycamore Canyon Wilderness Area in Arizona, and Bryce Canyon and Zion national parks in Utah. The administrative record includes NV Energy's 2009 BART analysis which finds impacts from RGGS alone to cause visibility impairment at Grand Canyon NP and contributes to visibility impairment at Joshua Tree and Zion national parks. The power plant also sits directly adjacent to the Moapa Band of Paiutes reservation. EPA's proposed BART determination for this facility is not only significant from the perspective of visibility, but also from the perspective of public health, especially for the Moapas, who bear the burden of the facility's pollution, but do not benefit from the facility's power generation. In this environmental and social justice context, the fatal flaws in EPA's analysis are of particular concern. Those flaws include, among other things, failure to require the "degree of reduction achievable through the application of the best system of continuous emission reduction" for NO_x, failure to consider readily-available technology, failure to accurately analyze the costs of compliance, improper analysis of the energy and non-air quality environmental impacts of compliance, failure to consider any pollution control equipment in use or in existence at the source, failure to consider the remaining useful life of the source, failure to require compliance as expeditiously as practicable, and failure to consider the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

With respect to BART for RGGS, one of the Proposed SIP's most pervasive defects is the lack of internal consistency and factual support. As explained by Drs. Pless and Gray and Mr. Powers, and as described below, the administrative record is rife with contradictory facts and evidentiary gaps. As a result, many of the Proposed SIP's ultimate findings, and consequently its conclusion, lack a logical basis. Just a few examples of the docket's factual deficiencies are: the failure to include the design parameters used to evaluate the BART controls, the failure to include the underlying data and modeling files supporting the state's modeling results,¹² the failure to include the equipment list and supporting costs underlying the cost analysis, and the failure to include documentation to support its cost analysis.

¹² Because the federal docket for the Proposed SIP lacked the requisite data to support Nevada's modeling, Dr. Gray requested this information independently from the state. After nearly six weeks, Dr. Gray finally gained access to this supporting data, which was crucial to informed and meaningful comment on the modeling that underlies the Proposed SIP's findings.

The Proposed SIP further fails to follow EPA's BART Guidelines. *U.S. EPA: Regional Haze Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations; Final Rule*, 70 Fed. Reg. 39104 (July 6, 2005); 40 CFR Part 51, Appendix Y. Although commenters, including the National Park Service, raised this issue to the State of Nevada, and more recently to EPA in their comments on the Proposed SIP,¹³ the Proposed SIP fails to cure this defect. The Proposed SIP finds that "BART determinations were conducted in a manner consistent with ... the EPA's BART Guidelines," 76 Fed. Reg. 36462. As explained by our experts in the attached technical comments, this finding lacks a factual basis. In fact, the Proposed SIP's analysis inexplicably and irrationally deviates from the BART Guidelines in many significant ways. For this reason, the Proposed SIP's claim of compliance with those Guidelines is insupportable. *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29 (1983) (holding that a rule is "arbitrary and capricious" where the agency has considered impermissible factors, failed to consider important aspects of the problem, offered an explanation for its decision that is contrary to the record evidence, or is so irrational that it could not be attributed to a difference in opinion or the result of agency expertise.)

A. The Proposed SIP Fails to Require BART for NOx

To control RGGGS's NOx emissions, the Proposed SIP proposes emission limits of 0.20 pounds per million British thermal units ("lb/MMBtu") for Units 1 and 2 and 0.28 lb/MMBtu for Unit 3 based on a 12 month rolling average. These emissions, which contemplate the use of rotating opposed overfire air ("ROFA") with Rotamix, do not represent BART for those units. Instead, as explained by Dr. Pless, BART for these units is an emission limit of 0.05 lb/MMBtu on a 30-day rolling average based on a boiler operating day.

The Proposed SIP's erroneous BART determination is based on a number of legal and technical flaws. Most importantly, the Proposed SIP fails to consider a NOx removal efficiency of 90%, which represents "the most stringent emission control level," that SCR by itself is capable of achieving. 70 Fed. Reg. at 39166. Dr. Pless bases her feasibility analysis on an SCR control efficiency of 90% in addition to combustion controls (a combination of low-NOx burners and overfire air). As explained in the attached report, modern SCRs are routinely designed and operated to achieve 90% NOx control. Based on this well-accepted industry standard, SCR control of at least 90% combined with low NOx burners and overfire air are BART. 70 Fed. Reg. at 39165 ("In general, a commercially available control option will be presumed applicable if it has been used on the same or a similar source type.").

The lower 0.05 lb/MMBtu limit proposed by Dr. Pless is also consistent with EPA's own determinations elsewhere. For example, the Texas Commission on Environmental Quality

¹³ We hereby incorporate, by reference, the National Park Service's comments on the Proposed SIP as well as the agency's comments to the State of Nevada on the Proposed SIP. We further incorporate by reference the environmental consortium's 2009 comments to the State of Nevada on the Proposed SIP.

found a NO_x limit of 0.03 lb/MMBtu to be technically feasible. 70 Fed. Reg. at 39166 (Urging consideration of “recent regulatory decisions... when identifying an emissions performance level” that can be achieved by available pollution-reduction methods.) For the San Juan Generating Station, which is subject to BART, EPA Region 6 proposed a NO_x limit of 0.05 lbs/MMBtu based on a 30-day rolling average. And, significantly, the Desert Rock final permit imposed an even lower limit of 0.035 lbs/MMBtu based on a 365-day rolling average. An EPA-issued permit containing a lower NO_x limit creates a presumption of technical feasibility for purposes of BART. 70 Fed. Reg. at 39165 (“[I]f there is a permit requiring the application of a certain technology or emission limit to be achieved for such technology, this usually is sufficient justification for you to assume the technical feasibility of that technology or emission limit.”). In light of the above, the Proposed SIP erroneously rejects SCR as a feasible control option based on a fatally flawed cost analysis, as explained below.

When the most stringent emission control level is not chosen (as is the case here), the BART Guidelines require “a showing of differences between the source and other sources that have achieved more stringent emissions limits . . .” 70 Fed. Reg. at 39166. The Proposed SIP fails to even attempt to identify the unique characteristics of RGGS that prevent it from meeting the same limits being achieved by other power plants. Instead, it rejects the best system of continuous NO_x reduction based on a legally and factually flawed cost argument. The Proposed SIP is both legally and technically inadequate for this reason alone.

B. The Proposed SIP Overestimates the Cost of SCR

The Proposed SIP incorrectly rejects SCR for RGGS as too costly. As explained in the accompanying comments from Powers Engineering, this erroneous conclusion is based on a flawed cost effectiveness analysis. A foundational problem with the cost analysis is its lack of evidentiary support in the administrative record. It further fails to account for multiple unit discounts, incorrectly includes allowance for funds during construction and owner’s costs, incorrectly calculates capital recovery and improperly inflates costs using various contingencies and surcharges.

With respect to estimating the lifetime of SCR, the cost analysis incorrectly assumes a lifetime of 20 years, even though the actual life of the technology is commonly understood to be 30 years. The Proposed SIP’s shorter lifetime estimate is apparently based on a projected shutdown date of 2023 for Units 1-3. Because this projection lacks any enforceable legal commitment, it cannot be used to artificially inflate the cost of SCR in the Proposed SIP’s cost analysis. As clearly defined by the BART Guidelines, the “the remaining useful life” of a facility is the difference between the date controls are installed and the date the facility permanently ends its operations. 70 Fed. Reg. at 39169. The Guidelines further explain that with respect to the latter, “this date should be assured by a *federally- or State-enforceable restriction* preventing further operation.” *Id.* (emphasis added). Because RGGS is not subject to any enforceable commitment to shutdown in 20 years, the Proposed SIP’s use of this assumption in its cost analysis is contrary to law.

Next, the Proposed SIP incorrectly concludes that a cost of \$2,386 and \$3,045 per ton of NO_x removed is not cost effective. Putting aside that these costs are improperly inflated (as discussed above), they nonetheless fall well within the average cost effectiveness range for purposes of BART, as evidenced by BART determinations elsewhere in the country, including Oregon, New York, Colorado, New Mexico, North Dakota, and Wisconsin as well as Region 9 in its proposed Four Corners Power Plant BART determination. The Proposed SIP inexplicably ignores consideration of the standard cost-effectiveness methodology in favor of a “clear break” cost theory that appears to be manufactured out of whole cloth. Aside from being devoid of any technical merit (as discussed in the accompanying Powers Engineering report), the Proposed SIP’s “clear break” theory only considers incremental costs. This approach violates the BART Guidelines, which require consideration of both average and incremental costs.

In fact, in 2002, EPA’s Environmental Appeals Board (“EAB”) roundly rejected a cost analysis that failed to consider both average and incremental costs. In so doing, the EAB stated that the state offered “no explanation of how it considered average cost-effectiveness. Therefore, the Board concludes that the cost-effectiveness analysis is incomplete and [the state] has failed to provide an adequate explanation on the record of its decision to reject the top control alternatives.” *In re General Motors Inc., Permit No. MI-209-00*, 10 E.A.D. 360 (EAB 2002), 2002 WL 373982 (E.P.A.), 1. Although this decision discusses cost effectiveness as it relates to Best Available Control Technology (“BACT”) under the Clean Air Act’s Prevention of Significant Deterioration provisions, its holding is equally applicable to BART cost-effectiveness, which is virtually identical to that for BACT. In sum, the “clear break” theory not only ignores one of the two required prongs of a BART cost-effectiveness evaluation (average cost), but also a misapplies the other prong of the test (incremental cost). For this reason, the Proposed SIP’s cost effectiveness conclusion for SCR is “arbitrary and capricious.”

C. The Proposed SIP’s Emission Limits Are Unenforceable

Under the Clean Air Act, emission limits, including BART limits, must be met on a continuous basis. 42 U.S.C. §7602(k). The Act further requires practical enforceability of those limits. Consistent with this statutory mandate, the BART Guidelines state that “[t]o complete the BART process, you must establish enforceable emission limits that reflect the BART requirements and require compliance within a given period of time.” 70 Fed. Reg. at 39172. Practical enforceability means that the source must be able to show continuous compliance with each limitation, which requires monitoring, recordkeeping, and reporting. The BART Guidelines further specify that, “emissions limits must be enforceable as a practical matter (contain appropriate averaging times, compliance verification procedures and recordkeeping requirements).” The Proposed SIP does not require any monitoring, recordkeeping or reporting. It further fails to provide a technical or legal justification for disregarding the 30-day averaging period required by the BART Guidelines for electric generating units. 70 Fed. Reg. at 39172. Thus, the Proposed SIP’s emission limits are not enforceable and do not constitute

BART. The proposal's BART determination is "arbitrary and capricious" for this additional reason.

D. The Proposed SIP's Claim of Non-Air Quality Environmental Impacts from SCR Is Irrational and Lacks Evidentiary Support

In rejecting SCR, the Proposed SIP further claims that the ammonia needed to operate SCR could carry non-air quality environmental impacts. These alleged impacts include the salability and disposal of fly ash due to ammonia levels, creation of a visible stack plume,¹⁴ and the transport of ammonia to the site in the event of an accidental release. However, as explained by Dr. Pless in her attached comments, the Proposed SIP's selected technology actually uses more ammonia than SCR. Furthermore, the administrative record lacks evidentiary support for these impacts. For these reasons, the Proposed SIP's conclusions with respect to ammonia-related impacts are irrational.

1. ROFA/Rotamix Has a Higher Ammonia Slip than SCR

From the perspective of non-air quality impacts from ammonia, the Proposed SIP's selection of ROFA/Rotamix over SCR lacks a logical basis. This is because the Proposed SIP's selected technology uses more ammonia than SCR. As explained by Dr. Pless, SNCR, including ROFA with Rotamix technology would permit at least twice as much ammonia emissions as SCR technologies, and likely more, with the resulting environmental problems. In other words, the selected BART option, ROFA with Rotamix, would have more severe negative non-air quality environmental impacts associated with ammonia use as compared to the rejected SCR control options. Because it failed to "consider important aspects of the problem" and provided an explanation for this issue that is "so irrational that it could not be attributed to difference in opinion or result of agency expertise," the Proposed SIP's non-air quality impact findings are "arbitrary and capricious." *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29 (1983).

2. The Proposed SIP's Discussion of Ammonia-Based Impacts Lacks Legal and Evidentiary Support

The Proposed SIP's discussion of non-air quality related impacts does not pass legal muster. The BART Guidelines provide the following framework for a legally-supportable discussion of non-air quality impacts:

In general, the analysis of impacts starts with the identification and quantification of the solid, liquid, and gaseous discharges from the control device

¹⁴ Although a visible plume may also result from excessive conversion of sulfur dioxide to sulfur trioxide, as explained by Dr. Pless, this alleged impact also lacks evidentiary support in the record. In fact, this phenomenon has not been reported for facilities firing Western bituminous coals, such as RGGS.

or devices under review. Initially, you should perform a qualitative or semi-quantitative screening to narrow the analysis to discharges with potential for causing adverse environmental effects. Next, you should assess the mass and composition of any such discharges and quantify them to the extent possible, based on readily available information. You should also assemble pertinent information about the public or environmental consequences of releasing these materials.

The Proposed SIP's bare and conclusory statements with respect to non-air quality impacts from ammonia lack the above-described analytical rigor. Specifically, the Proposed SIP does not quantify potential ammonia (the presumed basis for the claimed ammonia-related impacts) nor does it assemble pertinent information to support its claims. *Id.*

Furthermore, non-air quality impacts only "become important . . . when the incremental emissions reductions potential of the more stringent control is only marginally greater than the next most effective option." *Id.* Here, as explained by Dr. Pless, the incremental emissions reduction potential of the top control options, i.e., the two SCR technology combinations, is considerably greater than the next-most effective option, i.e., ROFA with Rotamix, which was selected as BART. Specifically, according to Nevada's own analysis, NO_x control efficiencies for the SCR technologies range from 78.2% to 82.2% for the three units, whereas control efficiencies for ROFA with Rotamix are expected to be only 38.3% to 59.0%. Given the high degree of variability as well as the dramatic difference in control efficiencies between the two technologies, the non-air quality impacts associated with SCR should not be used as a basis to eliminate this technology in the BART determination for RGGS. Instead, they lend support to requiring SCR as the appropriate control option for BART.

Finally, because SCR has been required elsewhere, the Proposed SIP carries the additional burden of providing the unique circumstances surrounding RGGS that distinguish it from other sources already using this technology.¹⁵ 70 Fed. Reg. at 39169 ("Where you or the source owner can show that unusual circumstances at the proposed facility create greater problems than experienced elsewhere, this may provide a basis for the elimination of that control alternative as BART.") The Proposed SIP fails to identify any unusual circumstances with respect to RGGS that distinguish its ammonia-related impacts from other sources where SCR has been required. For these reasons, the Proposed SIP's non-air quality environmental impact findings are "arbitrary and capricious."

¹⁵ "However, the fact that a control device creates liquid and solid waste that must be disposed of does not necessarily argue against selection of that technology as BART, particularly if the control device has been applied to similar facilities elsewhere and the solid or liquid waste is similar to those other applications." 70 Fed. Reg. at 39169.

E. The Proposed SIP's Emission Limits Do Not Represent the Best Achievable Emission Rate for the Selected Control Technology

The Proposed SIP proposes NO_x emission limits of 0.20 lb/MMBtu for Units 1 and 2 and 0.28 lb/MMBtu for Unit 3. These emission rates purport to be based on control efficiencies for ROFA/Rotomix, however, as explained by Dr. Pless, not only do these rates not represent the best achievable overall, they do not even represent the best achievable rate for this technology. The BART Guidelines state that “it is important, however, that in analyzing the technology you take into account the most stringent emission control level that the technology is capable of achieving.” 70 Fed. Reg. at 39166. As explained by Dr. Pless, the Proposed SIP arrived at these limits by calculating values that are specific to the selected baseline year rather than being an intrinsic numeric parameter of the ROFA with Rotamix control technology. This approach has no basis in law or science. Moreover, these emissions limits are inexplicably higher than the vendor-guaranteed NO_x limits of 0.16 lb/MMBtu for Units 1 and 2 and 0.20 lb/MMBtu for Unit 3. The vendor-guaranteed limits are significant, because, as explained by the BART Guidelines, “[v]endor guarantees may provide an indication of ... the technical feasibility of a control technique” 70 Fed. Reg. 39165.

Adding to the confusion, the Proposed SIP proposes a considerably higher NO_x emission limit as BART for Unit 3 (0.28 lb/MMBtu) than for Units 1 and 2 (0.20 lb/MMBtu). The Proposed SIP provides no explanation for choosing a higher NO_x limit for the newer Unit 3 (1976) than for Units 1 and 2 (1965 and 1968, respectively). This discrepancy is particularly perplexing given that all three units are the same size (100 MW) and would be using on the same BART control technology, i.e., ROFA with Rotamix, under EPA's proposal. Putting aside its improper rejection of SCR as BART (discussed above), the Proposed SIP's failure to apply the best achievable emission rate even for its selected technology (ROFA/Rotomix) constitutes an independent basis for rejecting the Proposed SIP.

III. The Proposed SIP Fails to Develop an Adequate Long-Term Strategy for Regional Haze

As explained by EPA's RPG Guidance, “The long-term strategy is the compilation of ‘enforceable emissions limitations, compliance schedules, and other measures as necessary to achieve the [RPGs],’ and is the means through which the state ensures that its RPG will be met.” *Id.* at 1-4; 40 CFR § 51.308(d)(3). The Proposed SIP's long-term strategy does not comply with federal regional haze requirements because it does not contain evidence showing full and effective consultation with other states, does not “ensure that it has included all measures needed to achieve its apportionment of emission reduction obligations agreed upon” through that consultation process and further fails to “document the technical basis, including modeling, monitoring and emissions information,” on which it relies to determine its apportionment of emission reduction obligations agreed upon through that process. 40 C.F.R. § 51.308(d)(3)(i)-(iii).

A. The Proposed SIP Does Not Impose Adequate Emissions Limitations to Meet Reasonable Progress Goals

As discussed above, the Proposed SIP fails to require BART for RGGGS. This is particularly problematic from the perspective of reasonable progress because according to regional modeling that is based on the 2018 WRAP inventory projections, additional emission reductions are needed to achieve the Uniform Rate of Progress (“URP”) goals and to achieve the “glide path” for visibility improvement to natural conditions by 2064 at Grand Canyon, Zion, and Bryce Canyon National Parks.

With respect to long-term strategy, Nevada’s own modeling shows that implementation of the Proposed SIP’s emission controls for RGGGS will have only minimal impact on reducing visibility impacts. We question whether the modeled inventory accurately reflects the post-BART emissions at RGGGS, and likewise question whether the modeling results reported in the SIP are correct. We further question whether Nevada accurately documented the changes in visibility attributable to the proposed BART emission controls.

Furthermore, according to Nevada’s modeling, the “post-BART” impact of RGGGS would still be at or above the “cause or contribute” threshold under the federal visibility rules at Grand Canyon (98th percentile extinction at or above 0.5 dv). Assuming its modeling results for RGGGS are accurate (which may not be the case based on the above analysis), Nevada’s own modeling results clearly demonstrate the need for a more stringent BART determination. The modeling results summarized in Nevada’s draft regional haze SIP suggest that the proposed BART emission limits for RGGGS fail to provide any significant visibility improvement at Class I areas outside Nevada. Nevada should select BART technologies and associated emission limits that significantly reduce the impact of RGGGS’ emissions on visibility degradation at the Grand Canyon and other Class I areas and properly document the actual effect of these changes on visibility.

Nevada’s modeling also underestimates the visibility improvement to Grand Canyon resulting from SCR at RGGGS. According to Dr. Gray in his accompanying comments, SCR would reduce the visibility impact of RGGGS’s three units below the threshold level at all Class I areas. In addition, the number of days each year in which delta dv exceeds 0.5 would be almost completely eliminated in these areas. Furthermore, the visibility impact in Grand Canyon NP from all three RGGGS units would reduce the 98th percentile delta dv in the Grand Canyon by 1.79, which would result in a noticeable change to the majority of park visitors. The Proposed SIP fails to account for this expected visibility improvement from all three units combined.

The Proposed SIP rejected SCR as BART for RGGGS based, in part, on cost considerations. As addressed elsewhere in these comments, the Proposed SIP’s cost analysis for SCR as applied to RGGGS is fundamentally flawed. With respect to the SCR cost analysis as it relates to out-of-state Class I areas, however, we further note that the Proposed SIP fails to evaluate cumulative visibility by using a supplementary dollar per deciview calculation to complement the dollar

per ton metric. As the BART program has evolved, the Federal Land Managers, as well as some states including Alaska, Massachusetts, North Dakota, Oregon and South Dakota, have developed and applied the dollars per deciview approach since 2006. This approach incorporates an assessment of visibility improvements. When properly and rationally applied, it assists states and EPA in ascribing a dollar value to visibility improvement.

Nevada's post-BART visibility modeling shows that emissions from RGGGS would continue to "cause or contribute" to visibility impairment at nearby Class I areas, including Joshua Tree, Zion and Grand Canyon National Parks. Even based on Nevada's own modeling, EPA should require more stringent BART emission levels that further reduce or eliminate visibility impairment caused by these sources and even consider emission reductions that are "beyond BART" (such as securing additional reductions at RGGGS's Unit 4) as other states have done when BART has provided insufficient emission reductions to achieve "reasonable further progress" toward the national visibility goal.

B. The Proposed SIP Fails to Demonstrate Reasonable Progress for Class I Areas Outside the State of Nevada

As EPA's own regulations make clear, a central goal of the Clean Air Act's regional haze program is "to require States to develop programs to assure reasonable progress toward meeting the national goal of preventing any future, and remedying any existing, impairment of visibility in mandatory Class I Federal areas which impairment results from manmade air pollution." 40 C.F.R. 51.300 (emphasis added). As a "core requirement" in furtherance of this goal, each state must address regional haze in "each mandatory Class I Federal area located within the State and in each mandatory Class I Federal area located *outside the State* which may be affected by emissions from within the State." 40 C.F.R. 51.308(d) (emphasis added). A key piece of a state's long-term strategy includes full and effective consultation with other states "to develop coordinated emission management strategies." 40 CFR § 51.308(d)(3)(i).

As a threshold matter, it is undisputed that Nevada contributes to visibility impacts to out-of-state Class I areas. Dr. Gray's analysis clearly confirms these impacts. Although the Proposed SIP implies that Nevada consulted with the Western Regional Air Partnership ("WRAP") in determining its apportionment of visibility impacts to Class I areas outside of the State of Nevada, the administrative record does not support the legally-required level of consultation. To the contrary, the Federal Register notice states that that "Nevada is not a formal member of WRAP...." 76 Fed. Reg. at 36452. And, despite its claim that "State representatives participated fully in the WRAP,"¹⁶ there is no evidence supporting any "agreed upon" apportionment of Nevada's out-of-state visibility obligations among the WRAP members, as required by law. 40 C.F.R. §51.308(d)(3)(ii). The Proposed SIP thus fails to show adequate consultation.

¹⁶ *Id.*

C. The SIP Fails to Provide the Legally-Required Technical Basis to Support Reasonable Progress in Out-of-State Class I Areas

Because WRAP did not apportion any out-of-state contribution to Nevada, there are no “technical analyses developed by” WRAP and “approved by all state participants” to support that apportionment. *Id.* at §51.308(d)(3)(iii). Although Nevada claims to have relied on WRAP’s technical analysis, there is no technical basis to support the Proposed SIP’s apportionment of zero to Nevada.

WRAP’s failure to apportion Nevada’s contribution does not save Nevada from its independent obligation to require adequate BART determinations and a long-term strategy to reduce haze-causing pollutants in out-of-state Class I areas from its pollution sources. 40 CFR §51.308 (d)(3)(ii)-(iv). “Where other States cause or contribute to impairment in a mandatory Class I Federal area, the State must demonstrate that it has included in its implementation plan all measures necessary to obtain its share of the emission reductions needed to meet the progress goal for the area.” *Id.* at §51.308(d)(3)(ii). Because Nevada failed to conduct any independent analysis, it further failed to “document the technical basis, including modeling, monitoring, and emissions information” on which it relied to “to determine its apportionment of emission reduction obligations necessary for achieving reasonable progress in each mandatory Class I area it affects. *Id.* at §51.308(d)(3)(iii).

Given that source emissions within Nevada are shown to “cause and contribute” to visibility impairment at Class I areas outside of the state after 2018, Nevada must revisit its draft regional haze SIP and craft an emissions reduction plan that helps achieve the Uniform Rate of Progress (“URP”) goals for Class I areas outside of Nevada. Achieving the national visibility goal and meeting the 2018 URP milestones will require aggressive actions from all states in the region, including Nevada. While Nevada has established BART emission limits in the draft SIP that provide a degree of visibility improvement, even greater improvement is warranted. The Proposed SIP allows Nevada’s emissions sources to continue to “cause or contribute” to visibility impairment; the better control option, SCR, would substantially reduce visibility impairment. These findings demonstrate that the Proposed SIP fails to meet its primary objective of providing the initial step toward meeting the national visibility goal. It is therefore incumbent on EPA to issue a Federal Implementation Plan in place of the inadequate Proposed SIP.

D. The Proposed SIP Fails to Address Cumulative Impact of RGGS on Out-of-State Class I Areas

Nevada’s modeling found that, on a unit-by-unit basis, the 98th percentile extinction from Reid Gardner was less than 0.5 dv at Zion and Bryce Canyon. On this basis, the Proposed SIP concluded that the individual units do not “cause or contribute” to visibility impairment at either Zion or Bryce Canyon, even under the baseline condition. However, the modeling results as presented in the Proposed SIP do not provide for a determination of the cumulative impact

from Reid Gardner Units 1, 2, and 3. Such a cumulative impact assessment is not only warranted, but required by the BART guidelines. 70 Fed. Reg. at 39105, 39107. The cumulative impact of a source's emissions on visibility as well as the cumulative benefit of emission reductions must be considered as part of the fifth step in the BART analysis.

When Dr. Gray corrected this omission and conducted the required cumulative impact analysis in his attached report, he found that SCR would reduce the cumulative delta dv impact from 3.96 (for all three units) to 0.83. This would result in a cumulative visibility improvement of 3.12 dv within the five Class I areas (Grand Canyon, Zion, Bryce, Sycamore, Joshua Tree).

Particularly in light of Dr. Gray's cumulative impact modeling results for SCR at RGGGS, we support the National Park Service's reasoning as articulated in the agency's comments on Salt River Project's proposed BART determination for Navajo Generating Station, July 24, 2009:

...[I]t is appropriate to consider both the degree of visibility improvement in a given Class I area as well as the cumulative effects of improving visibility across all of the Class I areas affected. It simply does not make sense to use the same metric to evaluate the effects of reducing emissions from a BART source that impacts only the one Class I area as for a BART source that impacts multiple Class I areas. And, it does not make sense to evaluate impacts at one Class I area, while ignoring others that are similarly significantly impaired. If we look at only the most-impacted Class I area, we ignore that the other Class I areas are all suffering from impairment to visibility "caused" by the BART source. It follows that, if emissions from the BART source are reduced, the benefits will be spread well beyond only the most impacted Class I area, and this must be accounted for.

By failing to account for RGGGS's current cumulative impairment to Class I areas, as well as the future cumulative visibility benefit to those same areas from BART, the Proposed SIP fails to recognize the regional approach to reducing haze. The Proposed SIP thus fails to pass legal and technical muster and must be corrected to consider the current cumulative impacts as well as the future cumulative benefits from BART, as well as other measures to improve visibility in Class I areas.

IV. CONCLUSION

In light of the above deficiencies, the undersigned respectfully request that EPA disapprove the Proposed SIP and prepare a legally-adequate FIP in its place. Thank you for the opportunity to submit comments on the Proposed SIP.

Sincerely,

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Accompanying Reports:

- 1) Expert Report by Dr. Petra Pless and Mr. Bill Powers ; Exhibits 1-116 thereto;
Attachments 1-5c thereto
- 2) Expert Report by Dr. Andrew Gray



MOAPA BAND OF PAIUTES

MOAPA RIVER INDIAN RESERVATION

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April 3, 2012

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Washington, DC 20460
Email: jackson.lisa@epa.gov

Re: EPA's Unjust Proposal with Respect to Reid Gardner Pollution

Dear Administrator Jackson,

I speak for the Moapa Band of Paiutes, a federally recognized Tribe within the plume and downwind of NV Energy's Reid Gardner coal-fired power plant and associated facilities.

Let me note, at the outset, that the land and the air and water here were relatively clean before the coal plant. But with NV Energy's arrival in our ancestral lands we have, for nearly six decades, suffered from the unrelenting air, water, and dust pollution generated by this facility, including the blowing coal ash and hydrogen sulfide gas pollution stemming, respectively, from the Reid Gardner coal ash landfill and wastewater ponds.

Yesterday, Region 9 of EPA proposed a Best Available Control Technology (BART) determination for Reid Gardner NOx pollution, pursuant to the Regional Haze Rule under the Clean Air Act, that is inconsistent with the law, inconsistent with EPA's strong decisions elsewhere (such as at the San Juan Generating Station in New Mexico), and contrary to the environmental justice principles to which you have nominally given support. In particular, EPA's proposed NOx limits allow pollution concentration levels several times greater than the limits you have approved elsewhere.

It is clear now that Region 9 will not, on its own, grasp the opportunity to impose stringent, cost-effective controls that will protect visibility in the region and, as a critical ancillary benefit, protect public health.

The Reid Gardner facility – including its coal ash landfill and its collection of wastewater ponds – is adjacent to the Tribe, within a mile of its community center, and within a ½ mile of the closest homes of Tribal Members. The facility generates significant quantities of regional haze pollution in Nevada and it imposes on Tribal members an overwhelming environmental and public health burden. The impacts of the coal plant, coal ash dump, and the wastewater ponds, on our community and on our way of life cannot be fully understood without coming to our community and speaking with Tribal Members. Because of this, in September 2011, we invited you to visit the Reservation and see for yourself. We hereby renew that invitation, in the hope that you will visit well before making a final decision on BART.

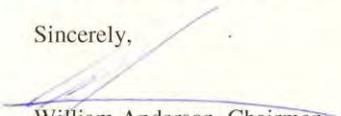
We appealed to you late last year out of concern that Region 9 would not do the right thing. Now, in the wake of the Region's submission to the coal plant and its rejection of the minimal demands of public health, we again seek your engagement. As you stated in your letter that commenced your Agency's Environmental Justice Plan 2014, "every American deserves clean air, water and land in the places where they live, work, play and learn."¹ We must ask you, now: Are we, the Moapa, within your scope of concern? If so, then for EPA to "[lead] by... working for environmental justice,"² it is necessary for you to take back this proposed determination.

Your Agency has acknowledged that breathing ozone reduces lung function, inflames the lining of the lungs, and permanently scars lung tissue.³ Accordingly, failure to impose the most stringent cost effective controls will consign my people to unnecessary disease and early death. This failure itself constitutes a renewed environmental injustice, one that compounds the damage of decades of preventable pollution imposed on my people. Alternatively, you can choose to act firmly to meet Congress's visibility goals with the notable co-benefit of protecting public health and honoring your Agency's long-standing environmental justice commitments.

We urge you take strong action, at long last. Please intervene to ensure that your Agency, in crafting your final determination, upholds the law, protects the environment, and protects our people fully.

Thank you for your consideration. We look forward to hearing from you soon. Should you have any question, or should you wish to accept our invitation to visit the Reservation, please contact our attorney, Dan Galpern, at 541-359-3243, or galpern@westernlaw.org.

Sincerely,



William Anderson, Chairman
Moapa Band of Paiutes

¹ Message from Administrator Jackson in *Plan EJ 2014*, found at <http://www.epa.gov/compliance/ej/plan-ej/index.html>.

² *Id.*

³ <http://www.epa.gov/glo/health.html>