



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

DEC 12 2016

Sandra Eto
Bureau of Reclamation, Phoenix Area Office
6150 West Thunderbird Road
Glendale, Arizona 85306-4001

Subject: Navajo Generating Station-Kayenta Mine Complex Project Draft Environmental Impact Statement (EIS), Arizona [CEQ #20160218]

Dear Ms. Eto:

The U.S. Environmental Protection Agency (USEPA) has reviewed the above referenced document. Our review and comments are provided pursuant to the National Environmental Policy Act, the Council on Environmental Quality's NEPA Implementation Regulations at 40 CFR 1500 - 1508, and our review authority under Section 309 of the Clean Air Act. We have appreciated our ability to be involved in the preparation of this EIS as a cooperating agency.

The proposed project involves renewing the lease for the 2,250-megawatt coal-fired Navajo Generating Station (NGS), located on the Navajo Nation near Page, Arizona, to continue operations from 2019 through 2044. The proposed project also involves issuance by the Office of Surface Mining Reclamation and Enforcement (OSMRE) of a significant Life-of-Mine (LOM) permit revision for the Kayenta Mine, which is located on about 44,073 acres of land leased within the boundaries of the Hopi and Navajo reservations. The Kayenta Mine and the adjacent 18,857-acre Black Mesa Mine, both operated by Peabody Western Coal Company (PWCC), share numerous facilities. The LOM revision would incorporate the Black Mesa Mine, including all shared facilities, into a 62,930-acre Kayenta Mine Complex permit area and add one coal leasing area, which would allow mining of all remaining coal that PWCC currently has under lease with the Navajo Nation and Hopi Tribe. Based upon current production rates, mining would continue until about 2041.

In 2013, USEPA proposed a source-specific federal implementation plan (FIP) requiring NGS to reduce emissions of nitrogen oxide (NO_x) under the Best Available Retrofit Technology (BART) provision of the CAA in order to reduce visibility impairment resulting from NGS at 11 National Parks and Wilderness Areas. USEPA proposed requiring NGS to achieve a nearly 80 percent reduction of its current overall NO_x emissions, proposed an alternative to BART that would provide flexibility to NGS in the schedule for the installation of new control equipment, and encouraged the development and evaluation of additional alternatives or approaches to meet the FIP. These forthcoming reduced emissions are factored into the EIS impact analyses.

We have rated this Draft EIS as EC-2 – Environmental Concerns-Insufficient Information (see Enclosure 1: “Summary of Rating Definitions”) based on concerns about the proposed project’s

potential impacts and the need for additional information to ensure that impacts would be avoided. In light of the fact that the former Black Mesa Mine area is closed and no new mining would occur there under the proposed project, it remains unclear why the EIS does not evaluate an alternative that would allow operation and safe, timely maintenance of the shared mining facilities and all associated necessary access on the Black Mesa Mine *without* incorporation of the entire Black Mesa Mine into the LOM permit. We recommend that such an alternative be added to the proposed action and Partial Federal Replacement alternatives for evaluation in the Final EIS. Furthermore, EPA recommends analyzing foreseeable future actions in the Black Mesa lease areas and cumulative impacts associated with the proposed LOM revision.

We also recommend that the Final EIS discuss and commit to measures to protect against livestock and wildlife exposure to retention ponds that exceed relevant water quality standards or recommended guidelines, and include additional information on air quality, climate change and financial assurance to ensure that reclamation obligations at the Black Mesa Mine are met.

We appreciate the opportunity to review this Draft EIS. Please send one hard copy and one CD of the Final EIS to this office (mailcode ENF-4-2) when it is officially filed with USEPA's *e-NEPA*. If you have any questions, please call me at (415) 947-4161, or contact Jeanne Geselbracht, our lead NEPA reviewer for this project, at geselbracht.jeanne@epa.gov or (415) 972-3853.

Sincerely,



Connell Dunning, Acting Manager
Environmental Review Section

Enclosures:

- (1) Summary of EPA Rating Definitions
- (2) USEPA's detailed comments on the Navajo Generating Station-Kayenta Mine Complex Project Draft EIS

Copy via electronic mail:

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SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

USEPA DETAILED COMMENTS ON THE NAVAJO GENERATING STATION-KAYENTA MINE COMPLEX PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT, ARIZONA – DECEMBER 2016

Project Alternatives

The Draft EIS describes the purpose and need for the Kayenta Mine Complex (KMC) Life-of-Mine (LOM) portion of the project, under the Surface Mining Control and Reclamation Act of 1977 (SMCRA), as follows:

“OSMRE [Office of Surface Mining Reclamation and Enforcement] needs to respond to PWCC’s [Peabody Western Coal Company] SMCRA Kayenta Mine permit revision application and proposed Life-of-Mine Plan and determine whether to approve, approve with special conditions, or disapprove the application, in accordance with the requirements of SMCRA. OSMRE’s purpose for the Proposed Action is to implement the environmental protections, reclamation standards, and other permitting requirements under SMCRA, while balancing the U.S.’ need for continued domestic coal production with protection of the environment.”

Based on this statement, the underlying need (i.e., the problem to be solved) for the Kayenta Mine portion of the proposed project is stated as “continued domestic coal production with protection of the environment.” The purpose (i.e., the objective to satisfy that need) is “to implement the environmental protections, reclamation standards, and other permitting requirements under SMCRA.” In our scoping and Administrative Draft EIS comments, we recommended that, among alternatives analyzed for the LOM permit revision, the EIS include both an alternative that adds only the Black Mesa Mine support facilities to the KMC, and one that involves no addition of Black Mesa Mine lease areas or support facilities to the KMC. Only one alternative, however, is fully evaluated for the Kayenta Mine portion of the project. Page 2-19 states:

“Under the Proposed Action, the Kayenta Mine and former Black Mesa Mine areas would be combined into one permit area consisting of 62,930 acres; the proposed combined area would be called the KMC. The proposed KMC would have a LOM plan equivalent to the life of the NGS and would continue to supply coal to the NGS through the year 2044.”

The No Action Alternative in the Draft EIS represents no renewal of the Navajo Generating Station (NGS) lease, with a shutdown of NGS in 2019, which would also result in a shutdown of the Kayenta Mine. However, an alternative in which OSMRE disapproves the revised LOM permit application, but mining continues, is not evaluated in detail. The Draft EIS (p. 2-5) eliminates from detailed analysis an alternative that would incorporate into the Kayenta LOM 566 acres of shared support facilities located in the former Black Mesa Mine for the following reasons:

“This alternative has the same environmental impacts as the Proposed Action because the mine plan would not change. This alternative would not result in less environmental impacts than the Proposed Action. Mining and other land-disturbing activities anywhere on the mine leasehold would continue to be subject to review pursuant to NEPA, whether incorporated into the proposed KMC under this Proposed Action or evaluated under a separate NEPA process. However, this alternative would not allow for timely minor repairs to address operation, maintenance or other unplanned unsatisfactory environmental or safety conditions that occur within the entire mine leasehold, or arise from weather-related or other natural events. Required

access and response action approvals for minor land-disturbing activities located outside the permanent permit boundary require time-consuming administrative steps that are not required for similar actions within the permanent permit boundary. Thus, this alternative would allow potentially unsafe and unsatisfactory environmental conditions to persist and be left unattended for extended periods of time.”

The Draft EIS (p. 2-19) states that all mining through the LOM would occur within the existing Kayenta Mine area and no new mining would occur at the former Black Mesa Mine area. It is unclear, therefore, why the Draft EIS proposes to incorporate all of the Black Mesa lease areas into the LOM permit. The Draft EIS does not describe the benefits of incorporating the entire Black Mesa Mine into the LOM permit when compared to continuing to operate the shared facilities as they have been operated since 2006. It is also unclear why a permit alternative was not developed that would allow operation and safe, timely maintenance of the shared facilities and all associated necessary access on the Black Mesa Mine - without the entire Black Mesa Mine being incorporated into the LOM permit. Such an alternative is particularly relevant because new mining at Black Mesa is not included in the proposed project.

Recommendation: Evaluate in further detail in the Final EIS an alternative that incorporates into the Kayenta LOM the acres of shared support facilities located in the former Black Mesa Mine which would allow safe, timely operation and maintenance of these facilities and all associated necessary access on the Black Mesa Mine without the entire Black Mesa Mine being incorporated into the LOM permit.

Furthermore, while the proposed project does not include mining at Black Mesa Mine, it appears, based on Peabody Western Coal Company’s (PWCC) application to incorporate the entire Black Mesa Mine into the LOM, that mining here is a foreseeable future action. The Draft EIS (p. 2-19) states that any new land disturbance proposed in the former Black Mesa Mine area would be subject to compliance with NEPA in the future; however, the cumulative impacts associated with future mining there are not addressed in the Draft EIS.

Recommendation: Evaluate in the Final EIS the potential cumulative impacts of incorporating the entire Black Mesa Mine into the LOM permit, including potential impacts of foreseeable mining in the Black Mesa lease areas. Discuss the beneficial and adverse impacts of the proposed LOM permit revision vs. continuing to operate the shared facilities as they have been operated under a different permit. Address any differences in permissible activities under a revised LOM permit vs. under other permitting scenarios. For example, under a foreseeable future scenario in which Black Mesa coal is mined, could groundwater resources be affected differently depending on the type of permit that the Black Mesa leases are subject to (e.g., LOM permit vs. other permit)?

Water Quality

The Draft EIS indicates that retention ponds in the northern part of the leasehold would exceed selenium standards or recommended guidelines for sulfate and total dissolved solids, resulting in moderate temporary impacts during mining activities to livestock watering, aquatic life and wildlife designated uses. Since these ponds are used only for sediment and storm water retention, other uses would be incidental and other ponds nearby would provide water for livestock watering and habitat uses (p. 3.7-86). However, these ponds would exist for several years, and their potential impacts to exposed livestock

and wildlife should be avoided. The Draft EIS does not identify measures that could be implemented to exclude livestock and wildlife from the affected ponds and induce them to use other ponds nearby.

Recommendation: In the Final EIS, commit to measures that will protect against livestock and wildlife exposure to ponds that are anticipated to exceed relevant standards or recommended guidelines.

Air Quality

The Draft EIS (p. 3.1-34) states that selective catalytic reduction (SCR) would be installed on units to comply with an emissions cap for nitrogen oxide (NOx) for the period 2020-2029. As written, however, this statement is not consistent with what was anticipated with USEPA's final action. As described in the final action, SCR would be installed to comply with the 2009-2044 NOx Cap. We anticipate the date of SCR installation to be by 2030, although earlier installation is certainly allowable. The cap that ends in 2029 is associated with the closure of an NGS unit.

Recommendation: Please clarify in the Final EIS that under the final Best Available Retrofit Technology (BART) alternative, installation of SCR is anticipated by 2030 to comply with the 2009-2044 NOx Cap.

We note that recent (2014) data for ozone, NO2 and PM10 are missing from Table 3.1-8 of the Draft EIS and recommend that the updated data be included in the Final EIS.

Proponent-Sponsored Commitments

The Draft EIS (p. 2-25) states that, if USEPA-certified coal stoves are available, Salt River Project (on behalf of the NGS Participants), in coordination with PWCC and Navajo Nation Environmental Protection Agency, would establish a stove replacement and installation program to benefit residents within and surrounding the mine permit area. There currently are no USEPA-certified coal stoves. However, there currently are USEPA-certified wood stoves, and there may be USEPA-certified wood/coal combination stoves ("dual-fuel stoves") in the near future. Pilot testing of dual-fuel prototypes is just getting started and it remains to be seen if combination stoves will be able to pass USEPA certification.

Most households that use coal do so because their existing stove cannot keep the house warm through the night on wood alone. New, USEPA-certified wood stoves (and gas stoves) are much more efficient and can typically keep a house warm through the night.

Recommendations: Institute a stove change out program regardless of the outcome of the dual-fuel stove testing for those households willing to switch to wood or gas for heating. If dual-fuel stoves pass certification, then those can be offered as well for households that want the option to burn wood or coal.

We also recommend including weatherization in such a mitigation project. A weatherized home, coupled with a cleaner, more efficient stove, will require less fuel and will help households maintain a comfortable temperature through the night.

For additional information on the stove pilot testing program, you may wish to call Katie Stewart, in USEPA's Region 9 office, at 415-947-4119 or stewart.kathleen@epa.gov.

Climate Change

The Draft EIS (p. 3.2-19) states, "The consequences of any one action, even a major action, on global climate are impossible to predict." EPA disagrees that this is impossible and recommends deleting this sentence. The Draft EIS also compares the proposal's estimated greenhouse gas (GHG) emissions to global and national GHG emission levels. EPA does not recommend the approach of comparing GHG emissions from a proposed action to aggregated global, state, or U.S. emissions because such comparisons minimize the consideration of GHG emissions under NEPA. EPA recommends analyzing and disclosing GHG emissions totals for use in comparing each alternative's relative contributions to climate change.

The Draft EIS quantifies the fugitive methane emissions that would be liberated from coal seams during mining. Methane has a global warming potential more than 20 times greater than that of CO₂ for a 100-year period. In response to our comments on the Administrative Draft EIS, the Bureau of Reclamation has explained why methane capture is not feasible for the Kayenta Mine project. We were unable to find this information in the Draft EIS and recommend that it be added to the Final EIS.

The Draft EIS applies the U.S. Interagency Working Group's (IWG) estimates of the social cost of carbon dioxide (SC-CO₂) to monetize increases in CO₂ emissions under the alternatives. The Draft EIS contains multiple technical errors and some misleading statements in the characterization and application of the SC-CO₂ estimates. First, the Draft EIS appears to use outdated SC-CO₂ values, which were published in May 2013. The SC-CO₂ values have been updated and are presented in the August 2016 IWG Technical Support Document.¹ This section of the Draft EIS may have been drafted prior to the release of that document, and we recommend updating the values in the Final EIS. Second, the Draft EIS incorrectly paraphrases guidance from the IWG's Technical Support Document. For example, page 361 incorrectly states that the four IWG recommended values "capture virtually the entire range of high and low values of the long-term results produced by the 45 scenarios evaluated..." and that the 95th percentile SC-CO₂ estimate accounts for "higher degrees of uncertainty" than the other three estimates. USEPA recommends quoting directly from the IWG TSD to discuss the four SC-CO₂ estimates. Third, the selective quotes from a non-governmental report about the SC-CO₂ is misleading because it suggests the application of SC-CO₂ in a NEPA analysis may not be appropriate. The quoted report, however, does not examine application of the SC-CO₂ in a NEPA context. Finally, the Draft EIS states that the alternatives would affect methane (CH₄) and nitrous oxide (N₂O) emissions but does not monetize these changes using the IWG's estimates of the SC-CH₄ and SC-N₂O, respectively. USEPA recommends either explaining why these impacts have not been monetized or expanding the analysis to value CH₄ and N₂O impacts.

Financial Assurance

Appendix 1D indicates that, because the Initial Program regulations did not include bonding for reclamation, no bond is currently held by OSMRE for Black Mesa Mine reclamation (p. 1D-20). Page 2-22 of the Draft EIS, however indicates that the reclamation bond for the proposed LOM permit would be

¹ Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis (August 2016), https://www.whitehouse.gov/sites/default/files/omb/inforeg/scc_tsd_final_clean_8_26_16.pdf

revised to include the Black Mesa Mine shared facilities. It is unclear how much this would add to the bond amount, and whether this would be added to the \$245,192,000 OSMRE Kayenta Mine corporate surety and reduce the \$47,862,000 Bureau of Indian Affairs (BIA) Black Mesa Mine lease bond (p. 3.14-2) by the same amount. It is also unclear whether the existing BIA lease bond is a corporate guarantee that could become unavailable, in the case of PWCC's bankruptcy, for the remaining approximately 20 percent of disturbed area at Black Mesa Mine that has yet to be reclaimed (Table 1D-12).

This information is important in characterizing the affected environment and understanding the project's potential direct, indirect, and cumulative impacts, as well as the effectiveness of measures meant to ensure resource protections in the event that PWCC were unable to meet future reclamation obligations backed by a corporate guarantee. We note that CEQ's "40 Questions" guidance states that, to ensure that environmental effects of a proposed action are fairly assessed, the probability of the mitigation measures being implemented should be discussed.² CEQ guidance views a discussion of funding for implementation of mitigation commitments as critical to ensuring informed decision making, and has stated that agencies should not commit to mitigation measures if it is not reasonable to foresee the availability of sufficient resources to ensure the performance of the mitigation.³

Recommendation: Include the following additional information in the Final EIS:

- The amount that would be added to the Kayenta Mine corporate surety to cover reclamation obligations under the proposed action (e.g., new lease areas and shared facilities);
- The type of financial instrument that the BIA Black Mesa Mine lease bond comprises;
- Whether and how PWCC's recent bankruptcy filing could affect the availability of funds to meet its reclamation obligations at the Black Mesa Mine, and the potential direct, indirect or cumulative environmental impacts of any such unmet obligations; and
- If the availability of funds to meet any Black Mesa reclamation obligations is at risk, a discussion of the options that BIA, the tribes or OSMRE may have to reduce that risk.

² CEQ, *Memorandum for Federal NEPA Liaisons, Federal, State and Local Officials and Other Persons Involved in the NEPA Process*, Question 19b, March 16, 1981.

³ CEQ, *Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact*: 76 Fed. Reg. 3843, 3848-3849 (Jan. 21, 2011).