

## 4 Affected Environment, Impacts, and Mitigation

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### Approach to Environmental Analysis

In the environmental analysis, each environmental resource is addressed in its own section. Each section includes the description of affected environment for that resource, the environmental consequences of the Proposed Action and alternatives on that resource, and proposed mitigation for any identified major environmental consequences.

Many of the environmental effects of the Project analyzed in this EIS are attributed to the continued operation of existing facilities (Navajo Mine, FCPP, transmission lines). These continuing operations are described in Section 2. The EPA provides guidance on this approach:

*The current condition is frequently used as the benchmark for comparing the environmental effects of the alternatives. However, in cases of continued operations, the current condition may not adequately represent how actions have impacted resources in the past, are currently impacting resources, or how resources might respond to future impacts. Designating existing environmental conditions as a benchmark may focus the environmental impact assessment too narrowly, overlooking cumulative impacts of past and present actions or limiting assessment to the Proposed Action and future actions. For example, if the current environmental condition were to serve as the condition for assessing the impacts of relicensing a dam, the analysis would only identify the marginal environmental changes between the continued operation of the dam and the existing degraded state of the environment. In this hypothetical case, the affected environment has been affected for more than 50 years with accompanying declines in flows, reductions in fish stocks, habitat loss, and disruption of hydrologic functions. If the assessment took into account the full extent of continued impacts, the significance of the continued operation would more accurately express the state of the environment and thereby better predict the consequences of relicensing the dam (EPA 1999a).*

Following this guidance, for each environmental resource, the analysis of the effects of continuing operations (described in Section 2) and of the alternatives including the Proposed Action (described in Section 3), are measured relative to environmental benchmarks specific to each resource category. The analysis identifies environmental impairments, either existing or ongoing, that would be addressed through mitigation measures or other means. These evaluations are included in the discussion of the existing environment.

There have been two completed Federal Actions that may affect the continuing operations at FCPP and Navajo Mine. At FCPP, the EPA has made its ruling with respect to BART to control air emissions (Section 2.4.2). For Navajo Mine, OSMRE has approved the Navajo Mine SMCRA permit transfer from BNCC to NTEC (Section 2.4.1). These completed Federal Actions form part of the environmental baseline to which the effects of continuing operations and the Proposed Actions are compared. In each description of the environmental setting, the measured current conditions (prior to 2014) are described first. The EIS analyzes the consequences of historic operations by evaluating the effects of the past 50 years of operations of the FCPP and the Navajo Mine through comparison of current conditions to environmental benchmarks, e.g., NAAQS, water quality standards, and current BMPs for environmental protection. This description is followed by the expected conditions as a result of BART compliance or as a result of the SMCRA (interim period: 2014-2018) permit transfer. Environmental consequences are then determined relative to this baseline condition.

In addition to evaluating the environmental consequences of continued operations by evaluating the effects of historic operations, the EIS analyzes the physical changes to the environment that would result from the Proposed Action, relative to the baseline. Specifically, there would be a total of 134,439 million tons of coal would be extracted over the 25-year permit period, with a total area of soil disturbance of 4,100 acres. The coal would be transported to and combusted at the FCPP at rates determined by the capacity of the units: prior to their shutdown in December 2013, at full load, Units 1, 2, and 3 burned approximately 9,000 tons of coal per day, and Units 4 and 5 at full load burn approximately 19,000 tons of coal per day. These are maximum potential rates; the actual rates would be less based on the capacity factor (approximately 80 percent operation). The environmental effects of mining, power production, atmospheric emissions and deposition including mercury, and the effects to all relevant environmental resources of these actions are explicitly considered in this EIS, including the cumulative effects of these activities for the 25-year Project duration. The results are provided for each environmental resource category, and in the cumulative impact assessment.

In some cases, the two completed Federal Actions do have long-term consequences to continuing operations that are considered in this EIS. For example, installation of SCR equipment on Units 4 and 5 requires the transport of large quantities of ammonia to FCPP; the environmental consequences of the ammonia transport, storage, and use are analyzed in the EIS as the continuing operations of FCPP, even though this requirement has not yet commenced. Further, the transfer of the SMCRA permit to NTEC may have long-term socioeconomic effects to the Navajo Nation, the state of New Mexico, and San Juan County. These long-term effects are analyzed in this EIS.

The environmental consequences would vary in duration and significance among the environmental resources. At the Navajo Mine SMCRA Permit Area and Pinabete SMCRA Permit Areas, short-term impacts would occur during and/or immediately following construction activities (i.e., Burnham Road realignment in 2022) and mining operations and would persist up to the reclamation phase. Based on historic operations at the Navajo Mine, a mined area is typically disturbed for 5 years prior to reclamation. Long-term impacts persist for the duration of the mining permit period (through 2041) and reclamation phase (through 2051) and account for post-reclamation activities, including monitoring (through 2061). Permanent impacts persist beyond or occur after reclamation (post 2051). For the FCPP and transmission lines, short-term impacts are those that would occur immediately following approval of the lease renewals plus a reasonable period afterwards (i.e., a total of about 5 years). Long-term impacts are those that would persist beyond or occur after the 5-year period.

The levels of significance of impacts are classified as major, moderate, minor, negligible or “no impact.” An impact is considered major if it would result in a substantial adverse change to the environment. An impact is considered moderate or minor if it would not result in substantial adverse environmental effects but could still have some effect. The determination of whether an impact is moderate or minor is described within each resource category. In contrast to “no impact,” a negligible impact could occur but at the lowest limits of detection of an effect. In cases where no impact would occur, this conclusion is noted. Quantitative thresholds are applied, where appropriate, to determine the level of significance (for example, quantitative thresholds are commonly used to determine impact levels in the areas of noise and air quality). Other issues are assessed qualitatively based on context and intensity. A summary of unavoidable adverse impacts is provided following the analyses of individual resource areas.

CEQ guidance states, “[a]ll relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the lead agency or the cooperating agencies, and thus would not be committed as part of the RODs of these agencies (Sections 1502.16(h), 1505.2(c)). This will serve to [46 FR 18032] alert agencies or officials who can implement these extra measures, and will encourage them to do so. Because the EIS is the most comprehensive environmental document, it is an ideal vehicle in which to lay out not only the full range of environmental impacts but also the full spectrum of appropriate mitigation.” As part of its SMCRA permit application, BNCC included measures to reduce or avoid potential impacts. These measures are incorporated into the description of the Proposed

Action and mine alternatives. These measures, as well as compliance with environmental regulations, are therefore not considered to be mitigation measures in this EIS. These measures were evaluated when considering the significance and duration of impacts, and, in some instances, the EIS identifies additional measures that would be necessary to avoid or further reduce potential impacts. Mitigation measures are agency-determined protections beyond those already proposed by the applicants or required by regulatory compliance.

The scope of the EIS was developed based on input from many sources, including the SMCRA permit applications; the cooperating agencies; open houses and public scoping and comment meetings; letters received from the public; and field inspections, research, and analyses. Conclusions and recommendations in this EIS are subject to the following assumptions:

- Project proponents would comply with all applicable laws and regulations;
- The proposed Project facilities would be constructed and operated as described in Sections 2 and 3 of this EIS;
- Project proponents would implement the measures included in the respective applications; and
- Project proponents would implement the recommendations and mitigation measures included in this EIS.

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