

Executive Summary

Background and Overview

The Office of Surface Mining Reclamation and Enforcement (OSMRE), Western Region, is preparing an Environmental Impact Statement (EIS) on the Four Corners Power Plant and Navajo Mine Energy Project. The review is conducted in accordance with the National Environmental Policy Act of 1969 (NEPA) as amended, 42 United States Code (USC) 4321–4347; the Council on Environmental Quality's (CEQ's) regulations for implementing NEPA, 40 Code of Federal Regulations (CFR) Parts 1500 through 1508; and the U S Department of the Interior's NEPA regulations, 43 CFR Part 46.

This EIS analyzes the impacts of implementing the following four primary and related actions:

1. Approval of Navajo Mine's application for a new Surface Mining Control and Reclamation Act (SMCRA) permit for the Pinabete Permit Area, which is located within the existing Navajo Mine Lease Area, to begin operations in 2016 and continue through 2041 in 5-year permit renewal intervals
2. Renewal of Navajo Mine's existing SMCRA permit for Areas I, II, III, and portions of Area IV North of the Navajo Mine Lease Area for 5 years beginning in 2014
3. Approval of Arizona Public Service Company's (APS') Proposed Four Corners Power Plant (FCPP) lease amendment and right-of-way (ROW) renewals, located on the Navajo Reservation in San Juan County, New Mexico, for continued operation through 2041
4. ROW renewals for portions of four transmission lines associated with the FCPP

These actions are collectively referred to as the "Project." The Proposed Action addressed in this EIS also includes the completion of the various lease renewal approval and permit processes by the cooperating agencies with jurisdiction over the Project.

Two Federal actions were completed prior to the Draft EIS: OSM's approval of a SMCRA permit transfer associated with the equity sale and merger of Navajo Mine Coal Company (NMCC) with the Navajo Transitional Energy Company (NTEC), including all assets formerly held by BNCC, and the US Environmental Protection Agency's (EPA's) issuance of a Federal Implementation Plan (FIP) for the installation of Best Available Retrofit Technology (BART) at the FCPP. These completed actions are not considered part of the Proposed Action, but part of the environmental baseline. The changes to the pre-2014 baseline as a result of these actions are described in this EIS as the Interim Period (2014 to 2018).

Navajo Mine

The Navajo Nation granted a 24,000-acre coal lease (Navajo Tribal Coal Lease 14-20-603-2505) in July 1957 to Utah Construction and Mining Company (subsequently BHP Navajo Coal Company [BNCC]). Through a series of subsequent lease revisions and amendments, the lease area was increased to approximately 33,600 acres. The lease agreement granted BNCC the right to mine within the lease area; however, mining cannot occur until a SMCRA permit is obtained, and all permitted areas must be located within the larger lease area. The Navajo Nation owns the surface and mineral rights of the entire lease area and the permit areas located within it. On April 29, 2013, the Navajo Nation Council formed NTEC. On December 1, 2013, NTEC acquired 100 percent of the equity of NMCC, whose assets included the lease of the Navajo Mine. BHP Billiton New Mexico Coal, Inc. (BBNMC) will create a new subsidiary company, BHP Billiton Mine Management Company (MMCo), for the purpose of managing the operation of Navajo Mine on behalf of NTEC.

NTEC proposes to develop a new approximately 5,600-acre permit area within the existing lease, known as the Pinabete Permit Area. Portions of the Pinabete Permit Area fall within the previously approved life of operations permit area, which was approved by OSMRE in 1989, which includes Area IV North. Although Area IV North is included in the previously permitted area, OSMRE must approve a mine plan specifying sequence and timing of mining before mining can occur there. Thus, for those portions of Area IV North not covered by the existing SMCRA permit, and for the remaining portions of the Pinabete Permit Area, NTEC seeks a new SMCRA permit. NTEC proposes to conduct mining operations on an approximately 4,100-acre portion of the proposed Pinabete Permit Area. The proposed Pinabete Permit Area would include previously permitted but undeveloped coal reserves within Area IV North of the Navajo Mine Lease, and unpermitted and undeveloped coal reserves in a portion of Area IV South of the existing Navajo Mine Lease. Development of the Pinabete Permit Area and associated coal reserves would use surface mining methods, and based on current projected customer needs, would supply coal to FCPP for up to 25 years beginning in 2016.

The existing permit for the Navajo Mine, includes coal resource Areas I, II, III, and portions of Area IV North within the Navajo Mine Lease Area (Federal SMCRA Permit NM0003F). It is administered on a 5-year renewal schedule (30 USC 1256, 30 CFR 773.19) with the current permit term expiring on September 25, 2014. Considering that the permit term will expire prior to OSMRE's anticipated completion of the EIS and prior to the currently expected March 2015 Record of Decision (ROD), OSMRE will administratively extend Federal Permit NM0003F allowing NTEC to continue surface coal mining and reclamation operations under the current permit, provided that the applicant has met all renewal application requirements and procedures in accordance with 30 CFR 750.12(c)(1)(ii) and 774.15(a). Upon completion of the EIS, the subsequent issuance of the ROD for the pending Pinabete Permit Application will also address OSMRE's decision on the administratively delayed and pending permit term renewal for Federal Permit NM0003F.

Four Corners Power Plant

The FCPP is a coal-fired electric generating station that receives coal solely from the Navajo Mine. FCPP currently has 5 units which historically generated approximately 2,100 megawatts (MW) of energy, and provided power to more than 500,000 customers in Arizona, New Mexico, California, and Texas. Currently, three units are retired and two units (Units 4 and 5) generate 1,540 MW of energy. APS owns 100 percent of the retired Units 1, 2, and 3. Five utilities jointly own Units 4 and 5 in the following undivided shares:

- APS – 63 percent
- Public Service Company of New Mexico – 13 percent
- Salt River Project – 10 percent
- El Paso Electric Company – 7 percent
- Tucson Electric Company – 7 percent

APS operates all of FCPP as the operating agent for all the co-owners and owns 63 percent of the total plant capacity. A Lease Agreement between the Navajo Nation and APS, Public Service Company of New Mexico (PNM), El Paso Electric (EPE) Company, Salt River Project, Tucson Electric Company, and Southern California Edison was signed in 1960 and indentured the lease of Navajo Nation Trust Lands for the purpose of constructing and operating the FCPP. In accordance with the FCPP lease, the Navajo Nation does not apply tribal regulation to the FCPP lease area. The Lease Agreement also authorized associated rights-of-way for ancillary facilities (i.e. transmission lines, water pipelines, access roads) on Navajo tribal trust lands. The 1960 Agreement was amended in 1966 to allow the construction of Units 4 and 5 and in 1985 to encompass additional lands for mining operations. APS recently executed a third lease amendment (Lease Amendment No. 3) with the Navajo Nation to extend the term of the lease for

the FCPP an additional 25 years, to 2041, but this action is subject to US Department of Interior Secretarial approval and evaluated in this EIS.

In August 2012, the U.S. Environmental Protection Agency (EPA) published its Federal Implementation Plan (FIP) for the Best Available Retrofit Technology (BART) at FCPP (40 CFR 49.5512), addressing remaining concerns associated with air emissions. EPA approved the FIP under a NEPA exemption for actions taken under the Clean Air Act. The FIP allowed APS to choose between two options:

1. Shut down Units 1, 2, and 3 by January 2014 and install selective catalytic reduction (SCR) devices on Units 4 and 5 by July 2018; or
2. Retrofit all five units to meet certain emission rate limits.

The FIP initially required APS to notify EPA of its choice by July 1, 2013. In May 2013, the Arizona Corporation Commission proposed to consider retail competition in the electrical generation market. As a result of the uncertainty introduced by this proposal, APS requested and was granted an extension of the EPA deadline to December 31, 2013. Southern California Edison is required to divest its ownership share of FCPP due to requirements of California Senate Bill 1368 addressing greenhouse gas emissions. On December 30, 2013, APS acquired Southern California Edison's share of Units 4 and 5 (720 MW) and shut down Units 1, 2, and 3 in compliance with the first of the options provided by EPA. The increase in APS's ownership of Units 4 and 5 replaced the generation capacity lost in the shutdown of APS-owned Units 1, 2, and 3. Units 4 and 5 would continue to operate for the duration of the lease agreement to 2041, with the installation and operation of SCR equipment on both units by July 31, 2018. Although the BART rules specifically address NO_x and particulate matter, the BART option chosen by APS would result in a decrease of all air pollutants emitted as shown in Table ES-1.

Table ES-1 Summary Comparison of Historic and Future Emission Rates

Criteria Pollutants, Greenhouse Gases and Target Metals	Historic Baseline Emissions Units 1, 2, 3, 4, 5 tons/yr	Estimated Future Emissions Units 4 & 5 tons/yr	Future versus Historic Baseline Reduction percent
Sulfur Dioxide (SO ₂)	11,971	9,800	18%
Nitrogen Oxides (NO _x)	41,121	5,420	87%
Carbon Monoxide (CO)	2,096	1,580	25%
Filterable Particulate (PM)	1,976	830	58%
CO ₂ Equivalents (CO ₂ e)	15,439,236	11,396,710	26%
Arsenic (As)	1.78	0.06	96%
Lead (Pb)	1.82	0.07	96%
Mercury (Hg)	0.36	0.07	81%
Selenium (Se)	5.63	0.28	95%

Sources: EPA 2011a; EPA 2012b; EPA 2012c; EPA 2012d; EPA 2012e; AECOM 2013a; 40 CFR 63 Subpart UUUUU Table 2

Notes:

Baseline period is 2005-11 (flue gas desulfurization(FGD) installed on Units 4 & 5)

Estimated future Units 4 & 5 emissions for 2019 and beyond (SCR operated pursuant to 40 CFR 49.5512 BART rule)

Future maximum annual capacity factor = 92% based on historic operations (average historic annual capacity factor = 84%, generation basis)

Modeled emission rates based on 7,411 mmBTU/hr heat input each unit and selected emission factors (AECOM)

Estimated future SO₂ emissions based on Part 75 annual data; Modeled SO₂ based on Part 75 1-hour average value (AECOM)

Estimated future NO_x emissions based on Part 75 annual data and BART Rule; Modeled NO_x based on BART Rule 30-day rolling average (AECOM)

Reduction with respect to historic plantwide baseline for all 5 units operating

Historic baseline & estimated future PM emissions calculated pursuant to AP-42 Chapter 1.1 support document Tables 4-7 & A-3; Title V permit condition (Units 1, 2, 3); 40 CFR 49.5512 (Units 4 & 5); CO calculated per AP-42 Chapter 1.1 Table 1.1-3

Actions under the Clean Air Act, such as EPA's adoption of the FIP, are exempt from NEPA under federal law (15 U.S.C. 793(c)(1)). The reductions in air pollutants summarized in Table ES-1 are part of the environmental baseline. However, the environmental effects of continued operation of FCPP, including APS's compliance with the FIP, are analyzed in the EIS.

Transmission Lines

Section 1508.25 of CEQ regulations for implementing NEPA discusses the inclusion of connected actions into the scope of the agency's environmental analysis of the effects of a Proposed Action. Actions are considered connected if they:

- (a) are automatically triggered by the Proposed Action and would require their own environmental impact statement,
- (b) cannot or will not proceed unless the Proposed Action is taken previously or simultaneously, or
- (c) are interdependent parts of the larger Proposed Action and depend on the Proposed Action for their justification.

Six transmission lines distribute electricity generated at the FCPP to the southwestern US. Of these, segments of four require ROW renewals or lease extensions within the timeframe of this NEPA review. Because renewal of the ROWs and existing leases would not likely occur without the FCPP's continued operation, and because the transmission lines depend primarily on the FCPP lease renewal for their utility, these actions are considered connected and are also addressed within this EIS. As the source of the electricity, the FCPP is the physical origin of these connected actions, and the physical end point of each connected action is defined as the location where the transmission line segment connects to the larger southwestern US electricity transmission grid, beyond which a significant portion of the electricity transmitted is not generated by FCPP.

The four transmission line segments that require ROW renewal and are considered connected actions are:

- APS FCPP to Cholla 345-kilovolt (kV) Transmission Line
- APS FCPP to Moenkopi 500-kV Transmission Line
- PNM FCPP to San Juan Generating Station 345-kV Transmission Line
- PNM FCPP to West Mesa 345-kV Transmission Line

Two modifications to these transmission line segments influence consideration as a connected action. First, in December 2012 the Bureau of Land Management (BLM) approved the ROW renewal for the segment of the APS FCPP to Cholla line extending from the Navajo Nation Tribal Trust Lands boundary to the Cholla substation. Accordingly, the BLM also satisfied NEPA requirements in support of their decision, and the approval extends the ROW to 2041. As such, the connected action analyzed in this EIS for the APS 345-kV transmission line is from FCPP to the Navajo Nation Tribal Trust Lands boundary. Second, APS has requested that OSMRE extend environmental analysis for the APS FCPP to Moenkopi 500-kV transmission line to the boundary of the Navajo Nation Tribal Trust Lands to facilitate future ROW lease renewals. As such, OSMRE is considering the segment from the Moenkopi substation to the Navajo Nation Tribal Trust Lands boundary as a similar action.

Purpose and Need

The purpose of the Proposed Action is to allow continued operations at the Navajo Mine and FCPP and operation of the associated transmission lines. The Proposed Action would be accomplished in a manner consistent with Federal Indian trust policies, including, but not limited to, a preference for tribal self-determination and promoting tribal economic development for all tribes affected by the Proposed Action.

The Proposed Action is needed to:

1. Continue the generation and transmission of long-term, reliable, and uninterrupted baseload electrical power for the residential, industrial, and other customers of the FCPP owners using existing generation and fuel resources.
2. Continue to provide coal to the FCPP, which receives coal exclusively from the Navajo Mine.
3. Continue operation and maintenance of electric transmission lines and related facilities (including switchyards and substations) that serve to transmit the electric energy generated at FCPP. These transmission lines also serve as a generation and transmission hub that enables efficient use and reliable transmission of existing generation resources. These resources include, in addition to FCPP-generated power, power generated from hydroelectric, renewable resources, nuclear, and other fossil fuels. The operation of the transmission lines also facilitates electric grid reliability in the western U.S. and region-wide reserve sharing agreements necessary to respond to system emergencies.
4. Provide for tribal self-determination and promote tribal economic development from the energy and mining sector for the Navajo Nation and Hopi Tribe.

Agency Authority and Actions

The Project includes several components that require approvals, ROW renewals, or permits by Federal agencies and/or the Navajo Nation or Hopi Tribe. Some of these approvals, renewals, or permits require a NEPA review before they can be approved. This EIS is intended to satisfy the NEPA requirements of these actions. In addition to this NEPA review, these Federal actions require consultations under Endangered Species Act (ESA) Section 7 and National Historic Preservation Act (NHPA) Section 106. These consultations are being implemented in parallel to the NEPA process. Each Federal and tribal agency's authorities and action(s) are described below and summarized in Table ES-2.

Table ES-2 Federal and Tribal Authorities and Actions

Agency	FCPP and Associated Facilities	Navajo Coal Mine	Power Transmission Lines
OSMRE	None	Approve, approve with conditions, or disapprove the SMCRA Pinabete Permit application; approve or disapprove the request to renew the existing Navajo Mine SMCRA permit.	None
Bureau of Indian Affairs (BIA)	Approve or disapprove the APS Lease Amendment No. 3.	Approve or disapprove the realignment of portions of Burnham Road; approve or disapprove the ROW renewal for two additional access roads.	Approve or disapprove ROW renewals for APS and PNM transmission lines.

Agency	FCPP and Associated Facilities	Navajo Coal Mine	Power Transmission Lines
BLM	None	Issue a decision on the Pinabete Mine Plan to ensure maximum economic recovery of coal.	Approve or disapprove ROW renewal for PNM FCPP to West Mesa transmission line and APS FCPP to Moenkopi transmission line. Consult with OSMRE to identify and evaluate potential impacts to cultural resources under NHPA Section 106.
US Army Corps of Engineers (USACE)	None	Approve or disapprove MMCo application for an Individual permit under Clean Water Act (CWA) Section 404.	None
EPA	Ensure that emissions from the FCPP comply with the Clean Air Act during modification of Title V Operating Permit and Title IV Acid Rain Permits.	Approve or disapprove a new source NPDES permit application for the Pinabete Permit under CWA Section 402.	None
US Fish and Wildlife Service	Issue Biological Opinion for Federally listed species under ESA Section 7.	Issue Biological Opinion for Federally listed species under ESA Section 7.	Issue Biological Opinion for Federally listed species under ESA Section 7.
Navajo Nation	Consult with OSMRE to identify and evaluate potential impacts to cultural resources under NHPA Section 106 and biological resources under ESA Section 7; issue CWA Section 401 water quality certification; issue Clean Air Act Title V permit.	Consult with OSMRE to identify and evaluate potential impacts to cultural resources under NHPA Section 106 and biological resources under ESA Section 7; review and comment on the SMCRA permit application; issue CWA Section 401 water quality certification.	Consult with OSMRE to identify and evaluate potential impacts to cultural resources under NHPA Section 106 and biological resources under ESA Section 7.
Hopi Tribe	None	None	Consult with OSMRE to identify and evaluate potential impacts to cultural resources under NHPA Section 106 and biological resources under ESA Section 7.
National Park Service	Review potential impacts to National Parks in the region.	None	Review ROW renewal for PNM FCPP to West Mesa transmission line. Consult with OSMRE to identify and evaluate potential impacts to cultural resources under NHPA Section 106.

Alternatives Analyzed

The following alternatives are analyzed fully in this EIS:

- *Action Alternatives.* Under these alternatives OSMRE would issue a SMCRA permit for the Pinabete Permit Area and renew the SMCRA permit for the Navajo Mine Permit Area, BIA would approve the lease agreement for the FCPP, and BLM would approve the ROW renewals for the subject transmission lines.
 - Alternative A – Proposed Action
 - Alternative B – Navajo Mine Extension Project
 - Alternative C – Alternative Pinabete Mine Plan
 - Alternative D – Alternate Ash Disposal Area Configuration

No Action Alternative. Under this alternative, OSMRE would deny the SMCRA permit for the Pinabete Permit Area and Navajo Mine Permit Area, OSMRE would not renew the existing SMCRA permit for Areas I, II, III, and portions of Area IV North, BIA would not approve the lease amendment for the FCPP, and BIA would not approve the ROW renewals for the subject transmission line.

In addition to these alternatives, several alternatives were considered and a screening level analysis was completed. Table ES-3 summarizes the alternatives considered by OSMRE, but not carried forth for more detailed analysis in the EIS, along with the results of the screening-level analysis and the reasons for the determination.

Table ES-3 Comparison of Alternatives Considered in Screening-Level Analysis

Alternative	Screening-Level Analysis Criteria			Carried Forward for Full Analysis
	Meets Purpose and Need	Technically Feasible	Economically Feasible	
Proposed Action	Yes	Yes	Yes	Yes
Navajo Mine Extension Plan	Yes	Yes	Yes	Yes
Alternative Pinabete Mine Plan	Yes	Yes	Yes	Yes
Alternate Ash Disposal Area Configuration	Yes	Yes	Yes	Yes
No Action	No	Yes	N/A	Yes
Conversion of FCPP to Renewable Energy – Natural Gas	No	Yes	No	No
Conversion of FCPP to Renewable Energy – Solar Power	No	Yes	No	No
Conversion of FCPP to Renewable Energy – Wind	No	Yes	No	No
Conversion of FCPP to Renewable Energy – Geothermal	No	No	No	No
Conversion of FCPP to Renewable Energy – Biomass	No	No	No	No
Solar Thermal/Coal Hybrid	Partially	No	No	No
Carbon Capture and Storage	Yes	Unknown	No	No
Implement Highwall or Longwall Mining Technique	No	Yes	No	No
Off-Site Coal Supply	No	Yes	No	No

Alternative A – Proposed Action

Under the Proposed Action, OSMRE would approve NTEC's Pinabete SMCRA permit application and Navajo Mine SMCRA application for permit renewal. In addition, BIA would approve Amendment 3 of FCPP's lease with the Navajo Nation as well as approve the ROW renewal for the four associated transmission lines and Navajo Mine access roads. The Proposed Action addressed in this EIS also includes the completion of the various lease renewal approval and permit processes by the cooperating agencies with jurisdiction over the Project (see Table ES-1). The subsections below describe details of each of these four actions.

Navajo Mine

Changes in Workforce

Under the Proposed Action, it is anticipated that Navajo Mine employment would decrease from approximately 526 to approximately 397 full-time employees. Employee reduction would begin after the shutdown of FCPP Units 1, 2, and 3. However, it is not anticipated that this workforce reduction would require layoffs, but would be a gradual result of natural attrition as NTEC employees reach retirement age.

Renewal of Navajo Mine Permit

Consistent with SMCRA's requirements, NTEC will submit a renewal request for the existing SMCRA permit (Permit No. NM0003F) that is set to expire on September 25, 2014. The existing SMCRA permit authorizes surface coal mining and reclamation on approximately 20,590 acres. In accordance with the regulations at 30 CFR 750.12(c)(1)(ii) and 774.15(a) and 30 USC 1256(d), a valid permit issued pursuant to an approved regulatory program carries with it the right of successive renewal within the boundaries of the existing permit term.

Considering that the permit term will expire prior to OSMRE's anticipated completion of the EIS and prior to the currently expected March 2015 Record of Decision (ROD), OSMRE will administratively extend Federal Permit NM0003F allowing NTEC to continue surface coal mining and reclamation operations under the current permit, provided that the applicant has met all renewal application requirements and procedures in accordance with 30 CFR 750.12(c)(1)(ii) and 774.15(a). Upon completion of the EIS, the subsequent issuance of the ROD for the pending Pinabete Permit Application will also address OSMRE's decision on the administratively delayed and pending permit term renewal for Federal Permit NM0003F.

Approval of Pinabete Permit

BNCC submitted an application to develop a new permit area for surface coal mining and reclamation operations for Navajo Mine operations beyond July 6, 2016 (Pinabete Permit Area), to OSMRE in April 2012. OSMRE determined the Pinabete permit application to be administratively complete on May 10, 2012, and OSMRE held informal conferences on August 11, 2012 at the Tiis Tsho Sikaad (Burnham) Chapter House and August 13, 2012 at the Nenahnezad Chapter House. In 2013, the ownership of the Navajo Mine was transferred from BNCC to NTEC. Therefore, NTEC is now the applicant for the SMCRA permit for the Pinabete Permit Area. The proposed Pinabete Permit Area includes 5,569 acres and would be composed of portions of the current Navajo Mine Permit Area (Federal Permit No. NM0003F) and additional unpermitted areas of the Navajo Mine Lease Area. Table ES-4 shows acres that would be disturbed during each permit term. The new permit area would be used to supply coal to FCPP and fulfill NTEC's coal sale obligations through 2041 in 5-year permit renewal increments.

Table ES-4 Acres Disturbed by Mining by Year

Permit Term	Year(s)	Acres Disturbed
1	1	101
	2	115
	3	89
	4	88
	5	89
2	6-10	746
3	11-15	512
4	16-20	636
5	21-25	368
Total		2,744

Mining Operations

The Pinabete Permit Area would be mined in the same manner described for the current Navajo Mine operations using surface coal mining methods adapted for multiple coal seam mining. Overburden would be removed primarily through dragline stripping, although overburden may also be stripped by dozer and loaded onto trucks and/or loaders for removal. The typical sequence for multiple seam mining is as follows:

- Vegetation and topdressing removal
- Overburden drilling and blasting
- Overburden stripping
- Coal drilling and blasting
- Coal removal
- Interburden drilling and blasting
- Interburden removal
- Coal drilling and blasting
- Coal removal

Coal Production

The anticipated tonnage to be mined from the Pinabete Permit Area and from the Navajo Mine Permit Area for each fiscal year of the initial permit term and each 5-year period thereafter is presented in Table ES-5. Annual total tonnage may be subject to change depending on the demand for coal and availability of mining equipment. The estimated annual production needed to fulfill the proposed future coal sales to the FCPP is approximately 5.8 million tons annually. The annual average may decrease in the last permit term, when it is anticipated that mining will only occur for the first 3 years.

Table ES-5 Anticipated Coal Production by Permit Term for the Pinabete and Navajo Mine Permit Areas

Permit Term	Year(s)	Coal Mined (million tons)
1	1	6.276
	2	5.380
	3	5.303
	4	6.178
	5	5.858
2	6-10	29.290 ¹
3	11-15	29.290 ¹
4	16-20	29.290 ¹
5	21-25	17.574 ²
Total		134.439

¹ 5.858 million tons of coal mined per year for a total of 29.290 million tons over 5 years.

² 5.858 million tons of coal mined for the first 3 years and 0 tons mined during years 4 and 5.

Buildings and Support Facility Areas

The main support facility for the Pinabete Permit Area operation would be the existing Area III support facilities. Irrigation and dust suppression water supply would be provided from an extension of the existing raw water pipeline at Navajo Mine. The existing pipeline terminates near the southern end of the Dixon Haul Road in Area III and would be extended to Area IV North and South at a future date prior to beginning irrigation and revegetation for reclamation. All of these support facilities would remain in use for the duration of the permit period (through 2041). No new support facilities are proposed for construction.

Power for Pinabete Permit Area operations would be supplied over a 69-kV distribution system. The mainline within the permit area would be approximately 13.5 miles long and loop around the mining area. Approximately 5.8 miles of existing powerline were constructed in 2010 associated with Navajo Mine Area IV North development. Approximately 7.7 miles of new powerline are proposed for construction prior to development of the mining operations in Area IV South. In addition, stub lines would be constructed off the mainline at approximately 5,000-foot intervals to service the mining operations. Powerlines would be constructed and designed in a manner to prevent electrocution of raptors (APLIC 2006). Mine communication would be conducted using an existing microwave-based radio and telephone system.

Support Roads

NTEC would use both primary and ancillary roads during mining operations in the Pinabete Permit Area. Primary roads are those used to transport coal and spoil, access roads to the mining areas used by small and heavy equipment, and access roads to the support facilities. Ancillary roads are those used infrequently by small vehicles for accessing environmental monitoring stations, ponds/water control structures, surveying, and powerline service inspection, as well as haul roads to topsoil stockpiles and temporary roads used during construction of support facilities.

To conduct operations in the Pinabete Permit Area, NTEC would realign 2.8 miles of the existing Burnham Road to route public traffic around mine activities and traffic. Burnham Road would not need to be relocated until approximately 2022. NTEC will submit an application to the BIA for the ROW to realign Burnham Road prior to that date. Burnham Road would be designed by a New Mexico-registered

professional engineer to meet the SMCRA performance standards of 30 CFR Subchapter K and the Mine Safety and Health Administration standards and requirements for roads.

In November 2012, BNCC submitted two applications to BIA for the ROW renewal of the Navajo Mine Access Road, which provides access in Area III. The Navajo Mine Access Road is 4,528 feet long and no improvements or additional construction activities are proposed. In February 2013, BNCC also submitted an application to the BIA for the ROW renewal of the Access Road/Power and Communication lines from the FCPP Lease Area to the Navajo Mine Lease Area. Similar to the Pinabete Permit Area SMCRA application, upon transfer of ownership of the Navajo Mine to NTEC, the applicant for the ROW renewal of the Navajo Mine Access Road and Access Road/Power and Communication line changed from BNCC to NTEC. This ROW is 1.3 miles long and no improvements or additional construction activities are proposed for either ROW.

The Pinabete Permit proposes construction of approximately 5 miles of primary roads and approximately 22 miles of ancillary roads to the Navajo Mine transportation network (Table ES-5). Relocating a public access road is the only circumstance where NTEC would construct roads outside the mine lease; this action would require ROW approval from BIA.

Table ES-5 Proposed Project Roadways

Road ID	Road Type	Purpose	Length (feet)	Width (feet)	Maximum Grade (%)	Surface Material	Construction Date	Removal or Reclamation Date
East Haul Road and Service Road Loop	Primary	Access/haulage	16,600	120	3.5	Gravel	2023	2041
West Haul Road	Primary	Haulage	10,900	80	NA	Gravel	2025	2041
TS-403 Haul Road	Ancillary	Access/haulage	450	60	1.0	Dirt	2016	2041
TS-404	Ancillary	Access/haulage	NA	NA	NA	Dirt	2025	2041
TS-406	Ancillary	Access/haulage	NA	NA	NA	Dirt	2023	2041
Well PA-1 Access Road	Ancillary	Access	3,235	12	12.5	Dirt	Existing	2041
Well PA-2 Access Road	Ancillary	Access	2,370	12	3.0	Dirt	Existing	2041
Area IV North Access Road	Ancillary	Access	32,000	12	10	Dirt	Existing	2041
Met Station 3 Access Road	Ancillary	Access	3,500	12	9.5	Dirt	Existing	2041
69-kV Powerline-A4N	Ancillary	Access	30,800	12	10	Dirt	2010	2041
69-kV Powerline-Pinabete	Ancillary	Access	40,700	12	10	Dirt	2023	2041

Reclamation

BNCC developed a post-mining topography based on a computer simulation of mining in the Pinabete Permit Area. The computer simulation models the mining methods and dragline operation to create a simulated post-mining topography that was used to optimize the mass balance of the final surface configuration design. Through combination of the post-mining topography and final surface configuration designs, BNCC developed mass-balanced logical reclamation blocks for the mining area. Unbalanced surplus material would be redistributed within the reclamation blocks. Backfilling and grading would be completed in these logical reclamation blocks, which follow the stripping sequence and allow for large areas to be regraded at one time.

In most cases, reclamation blocks would become available every 1 to 3 years in each mining area. Conducting reclamation in larger blocks would provide for a more consistent topography between regraded areas, minimize the disturbance of areas that have already been reclaimed, and increase operation efficiencies by regrading larger reclamation blocks. Additionally, the number of temporary drainage and sediment control structures can be reduced by regrading larger portions of the post-mining watersheds.

FCPP

APS, as operating agent and on behalf of FCPP's participant owners, recently executed a lease amendment (Lease Amendment No. 3) with the Navajo Nation to extend the term of the lease for the FCPP an additional 25 years, to July 6, 2041. This lease amendment also includes ROW renewal for the FCPP plant site and for the APS El Dorado and Cholla transmission lines and ancillary facilities, including the Moenkopi Substation across Navajo Nation Tribal Trust Lands. BIA approval of Lease Amendment No. 3 is required pursuant to 25 USC Section 415, and BIA approval of the ROWs are required pursuant to 25 USC Section 323. APS is currently negotiating an extension of the existing ROW for the APS El Dorado line across Hopi Tribal Trust Lands with the Hopi Tribe. Once an agreement is reached, the ROW application will be submitted to BIA Western Region for review.

As part of its BART compliance requirements, APS would install SCR's on Units 4 and 5. Relatively large amounts of ammonia are required for the process, which would be delivered to FCPP by truck and stored on site prior to use. Depending on the type of ammonia (liquid or solid) and the number of trucks required, differing levels of risks are associated. These risks are specific to Hazards and Human Health; accordingly, the relative impacts are assessed in Section 4.15. They are not considered as alternatives to the Proposed Action because they are associated with BART compliance, for which EPA has already issued a Final Rule. As such, the options are analyzed as part of the evaluation of the environmental consequences of the FCPP's continuing operations.

Other than the SCR's installation, Units 4 and 5 would continue operating in the same manner as they do currently. Although it is estimated that the shutdown of Units 1, 2, and 3 would reduce annual water consumption by 5,000 to 7,000 acre-feet per year, the water supply system to the FCPP would not change. The size of the leased acreage or footprint of the FCPP facilities would not change. Units 1, 2, and 3 have been shut down.. All three switchyards would remain in service to distribute power from FCPP and other generators. Other than minor equipment upgrades, no changes or modifications are anticipated for the three FCPP switchyards, Moenkopi Substation, 12-kV Moenkopi line, or Moenkopi access road during the lease term.

Interim Period (2014-2018)

The EPA BART FIP, which is exempt from NEPA, required that APS choose how it will implement the BART rule by December 31, 2013. On December 30, 2013, the purchase and sale transaction of Southern California Edison's share of Units 4 and 5 to APS was completed and Units 1, 2, and 3 were shut down. During the interim period between the 2014 required shutdown date through July 2018 (when SCR must be installed and operational), the FCPP would operate only Units 4 and 5 in the same manner

as current operations. After July 2018, APS would operate Units 4 and 5 with SCR installed if the Proposed Action is approved.

The activities required to comply with EPA's BART FIP are considered as part of the environmental baseline in this EIS, since APS committed to them by December 31, 2013. This EIS analyzes the environmental effects of these FIP compliance actions in comparison to historical operations in sections titled "Changes to Environmental Baseline Post-2014". Certain consequences, such as long-term delivery of ammonia are analyzed as part of continuing operations.

Changes to Coal Combustion Residue Management

Between 2014 and 2016, Flue Gas Desulfurization (FGD) waste generated from Units 4 and 5 would continue to be placed in Dry Fly Ash Disposal Area (DFADA) Sites 1 and 2 until these sites reach capacity. APS would construct five additional DFADAs to accommodate future disposal of all fly ash, bottom ash, and FGD waste generated through the duration of the lease term. Each site is anticipated to be approximately 60 acres and approximately 120 feet high (Table ES-7). Estimated annual storage volumes would be 1,118 acre-feet per year. Each site is anticipated to be in operation for 5 years. Once the storage capacity of each site is met, FCPP would close the facility using an evapotranspiration cover. The evapotranspiration cover would include a layer consisting of finer-grained sands, silts, and clayey soils and an erosion layer consisting of soil and rock mixture. The material for the cover would be borrowed from five areas inside the existing FCPP Lease Area. The amount of borrow required for closing the ash disposal sites was determined using topographic data and assumed final slopes of the closed areas. Based on these calculations, approximately 6.6 million cubic yards of borrow is available within the FCPP Lease Area and 4.8 million cubic yards would be required for closure. As closure would be conducted at the end of each site operation, in some instance, material would be borrowed from a DFADA construction site to cap existing, full-capacity disposal sites. In addition to the five new sites, a surge pond (lined impoundment) would be constructed to capture generated FGD waste and historic ash impoundment seepage intercept water. All soil for impoundments and berms surrounding the impoundment would be borrowed from one of the five areas inside the existing FCPP Lease Area.

The EPA is currently considering whether to manage Coal combustion residue (CCR) as either a Subtitle C hazardous waste or a Subtitle D solid waste. It is anticipated that EPA will issue a Final Rule on the matter sometime in 2014. FCPP would comply with EPA's Final Rule, irrespective of which CCR management option is selected.

Table ES-7 Summary of Ground Disturbance Area at FCPP

Dry Fly Ash Disposal Areas	Area (acres)
DFADA 1	39
DFADA 2	34
DFADA 3A	28
DFADA 3	51
DFADA 4	61
DFADA 5	63
DFADA 6	41
DFADA 7	68
Total	385
Borrow Pit Areas	Area (acres)
East Borrow Area	91
Northeast Borrow Area	23

Dry Fly Ash Disposal Areas	Area (acres)
Northwest Borrow Area	83
S1 Retention Excavation	6
South Borrow Area*	407
West Borrow Area	121
Total	731

*Approximately 32 acres overlap between the southern borrow area and the DFADAs, resulting in a total disturbance acreage of 1,052 acres.

Connected Actions - Transmission Lines

According to CEQ's NEPA Guidelines Section 1508.25(a)1, actions are connected if they:

- Automatically trigger other actions that may require EISs,
- Cannot or will not proceed unless other actions are taken previously or simultaneously, or
- Are interdependent parts of a larger action and depend on the larger action for their justification.

Connected actions are closely related and, therefore, their environmental consequences are to be analyzed in the same EIS as the Proposed Action and alternatives. Four existing transmission lines directly associated with the FCPP require ROW renewals within the period of time this NEPA review is conducted. These transmission lines, owned and operated by APS or PNM, are considered connected actions to the continued operation of the mine and power plant. These transmission lines are listed below and shown on Figure 1-1:

1. *FCPP to West Mesa Switchyard.* The Navajo lease for this transmission line expires in June 2018. Another former BLM ROW conveyed to the Navajo Nation in 1994 expires in May 2016. Both portions of the line require BIA approval and are dependent on the FCPP's continued operation.
2. *FCPP to Moenkopi Substation.* Navajo and Hopi leases expire December 2016 and March 2017, respectively. This line was formerly used to transmit electricity from the FCPP to Southern California Edison's service territory. As described in Section 2.3.4, Southern California Edison divested its share of the FCPP and no longer imports power from FCPP to California. Since completion of the sale, APS no longer uses the transmission line west of Moenkopi to transmit power from the FCPP to Southern California Edison's service territory. The line would be used to bring power into APS' service territory. As such, this action cannot proceed unless the FCPP continues operation. At the request of APS and because the renewal of the lease for the ROW is near-term and would require BIA approval, the transmission line segment from the Moenkopi substation to the Navajo Nation boundary is also included, as a similar action to the connected action.
3. *FCPP to Cholla Substation.* The Navajo lease for this transmission line expired in May 2011. The BLM lease for the portion of the line from the Navajo Nation boundary to Cholla Substation was renewed in 2012, with the term extending to 2041. Therefore, for the purposes of this EIS, only the renewal of the lease for the portion of the line from FCPP to the Navajo Nation boundary is considered a connected action. Eighty-six percent of the use of this line is to transport FCPP electricity to APS customers. The remaining 14 percent use of this line is for other utilities besides FCPP.
4. *FCPP to San Juan Switchyard.* The Navajo lease for the 4.5-mile portion of the line on the Navajo Nation expires in August 2015. The line is used to transmit FCPP electricity to PNM customers

and between FCPP and the PNM San Juan Generating Station. As such, the transportation of electricity on this line cannot proceed unless the FCPP continues operation.

No new towers or access roads would be constructed as part of the Project, and no changes to the existing ROWs would occur.

Alternative B – Navajo Mine Extension Project

Navajo Mine

Under Alternative B, OSMRE would disapprove the Pinabete permit application, and NTEC would seek approval from OSMRE for an alternative mine plan for the Navajo Mine. This alternative also includes all other federal actions described in Table ES-1. Under Alternative B, NTEC would seek a 5,412-acre SMCRA permit and proposed mining disturbance in approximately 4,998 acres (Figure 3-3). Mining would commence with the construction of a new boxcut near the western lease boundary and progress eastward in north/south-orientated striplines. The mining block would be divided into a North Pit and a South Pit. NTEC would operate two draglines, one in each mine pit. After the coal is exposed by the stripping operation, it would be either drilled and blasted or ripped by dozers before mining. Once the coal is broken up, it would be mined by front-end loaders and haul trucks. Coal would be transported to a field coal stockpile on the western permit boundary, prior to being transported 8.4 miles to Lowe Stockpile in Area III via primary haul roads.

Under Alternative B, the mining would occur through Pinabete Arroyo and require a diversion of flows from the arroyo around mining activities. Surface flows from Pinabete Arroyo upstream of the mine plan would be diverted into No Name Arroyo. The diversion would remain for the duration of proposed mining.

Under Alternative B, NTEC would realign 6.2 miles of Burnham Road along the eastern lease boundary. Alternative B would also include construction of 12.6 miles of primary roads and 13.7 miles of ancillary roads.

Under Alternative B, OSMRE would renew the existing Navajo Mine SMCRA permit (NM0003F). For both the Navajo Mine Permit Area and the expanded SMCRA permit area, operations and reclamation would be conducted as described under the Proposed Action.

Reclamation activities would include reconstruction of a new Pinabete Arroyo channel through reclaimed areas and reestablishing the approximate original channel location, in addition to all reclamation activities described for the Proposed Action.

Alternative B would result in 28 acres of greater disturbance to waters of the U.S. than the Proposed Action. In addition, NTEC would need to construct 5 more miles of roadways and 8 more miles of transmission lines than described for the Proposed Action. The haul distance from the field coal stockpiles to Lowe Stockpile would also increase by approximately 3 miles. Table ES-8 compares the area that would be disturbed under Alternative B to that of the Proposed Action.

Table ES-8 Comparison of Disturbance Area between Alternative B and the Proposed Action

Impacts	Navajo Mine Extension Project	Proposed Action
SMCRA Permit	5,412.4 acres	5,568.6 acres
Conceptual disturbance footprint	4,998.0 acres	4,103.5 acres
Proposed relocation of Burnham Road	6.2 miles	2.8 miles
Approximate impact to waters of the US	33.0 acres	5.0 acres
Length of primary roads	12.6 miles	5.2 miles

Impacts	Navajo Mine Extension Project	Proposed Action
Length of ancillary roads	14.1 miles	15.6 miles
Length of new powerlines	15.5 miles	7.7 miles
Haul distance from field coal stockpiles to Lowe Stockpile	8.4 miles	5.2 miles

FCPP

Under Alternative B, the BIA would approve the lease amendment for FCPP, and FCPP would operate as described under the Proposed Action. No changes are proposed.

Transmission Lines

Under Alternative B, the transmission line ROWs would be approved and they would continue to be operated and maintained as described under the Proposed Action. No changes are proposed.

Alternative C – Alternative Pinabete Mine Plan

Navajo Mine

Under Alternative C, OSMRE would disapprove the Pinabete permit application, and NTEC would seek approval from OSMRE for a new 10,094-acre SMCRA permit area and proposed mining disturbance in approximately 6,492 acres. Alternative C also includes all other Federal actions described in Table ES-1. Mining would be located in both Area IV North and Area IV South, as described for the Proposed Action, and would supply coal through 2041. Mining activities in Area IV North would continue along the existing striplines to the south. The Area IV South Pit would be located southwest of Pinabete Arroyo and would require a new boxcut to develop the pit. Once the boxcut is complete, only two draglines would be needed, one in each pit.

Coal from the Area IV North Pit would be hauled directly to Lowe Stockpile in Area III for a distance of 3.7 miles. A field coal stockpile would be located in Area IV South, and coal from the Area IV South Pit would be hauled to this stockpile prior to being hauled the 8.4 miles to Lowe Stockpile. NTEC would realign 6.2 miles of Burnham Road as described under the Proposed Action. In addition, approximately 15.1 miles of primary haul roads and 14.8 miles of ancillary roads would be constructed (Figure 3-4). In addition, NTEC would construct approximately 16.8 miles of powerlines extending the existing transmission lines from the Navajo Mine Permit Area to the new permit area.

Under Alternative C, OSMRE would renew the existing Navajo Mine SMCRA permit (NM0003F). For both the Navajo Mine Permit Area and the new SMCRA permit area, operations and reclamation would be conducted as described under the Proposed Action.

Under Alternative C, approximately 1.6 more acres of waters of the US would be impacted than under the Proposed Action. In addition, NTEC would need to construct over 10 more miles of roadways and 8 more miles of transmission lines than described for the Proposed Action. The haul distance from the field coal stockpiles to Lowe Stockpile would also increase by about 3 miles. Table ES-9 compares the area that would be disturbed under Alternative C to that of the Proposed Action.

Table ES-9 Comparison of Disturbance Area between Alternative C and the Proposed Action

	Alternative Pinabete Permit	Proposed Action
SMCRA Permit (acres)	10,093.9	5,568.6
Conceptual disturbance footprint (acres)	6,492.2	4,103.5
Proposed relocation of Burnham Road (miles)	6.2	2.8
Approximate impact to waters of the US (acres)	6.6	5.0
Length of primary roads (miles)	15.1	5.2
Length of ancillary roads (miles)	14.8	15.6
Length of new powerlines (miles)	15.5	7.7
Haul distance from field coal stockpiles to Lowe Stockpile (miles)	8.4	5.2

FCPP

Under Alternative C, the BIA would approve the lease amendment for FCPP, and FCPP would operate as described under the Proposed Action. No changes are proposed.

Transmission Lines

Under Alternative C, the transmission line ROWs would be approved, and they would continue to be operated and maintained as described under the Proposed Action. No changes are proposed.

Alternative D – Alternate Ash Disposal Area Configuration

This alternative was identified by APS as a potential reduction in the environmental effects of the proposed ash disposal configuration. This alternative considers an alternate configuration for the disposal of CCR that reduces the area of disturbance.

Navajo Mine

Under this alternative, OSMRE would approve the Pinabete permit application and renew the SMCRA permit for the Navajo Mine permit. The Navajo Mine would operate as described under the Proposed Action. No changes are proposed.

FCPP

Under this alternative, BIA would approve the amended lease for the FCPP, and the plant would continue to operate as described under the Proposed Action. However, instead of constructing seven DFADAs, APS would construct a single “super cell” DFADA that would be approximately 350 acres total. Construction of a single large DFADA would eliminate the number of impoundment walls and roads through the CCR area. The site would still be constructed in phases. As each subsequent site is constructed, the liner and leachate collection system would be extended such that the sites would act as a single facility. The DFADA would be setback at least 300 feet from the FCPP Lease Area boundary. The proposed borrow areas would remain as described in the Proposed Action and would be located in the area of future expansion of the super cell; therefore, the potential reduction in ground disturbance resulting from the DFADA would not be realized during excavation of the borrow pits (Table ES-10).

Table ES-10 Comparison of Disturbance Area between Alternative D and the Proposed Action

Ash Disposal Areas	Ash Disposal Alternative	Proposed Action
DFADA 1		39
DFADA 2		34
DFADA 3A		28
DFADA 3		51
DFADA 4		61
DFADA 5		63
DFADA 6		41
DFADA 7		68
Total		385
Super Cell (Alternative D)	350	
DFADA Height	120	120
Borrow Pit Areas	731	731

There is approximately 32 acres of overlap between the south borrow area and the DFADAs, resulting in a total disturbance acreage of 1,052 acres.

Transmission Lines

Under this alternative, BIA and BLM would extend the ROW leases for the subject transmission lines. The transmission lines would continue to be operated and maintained as described for the Proposed Action. No changes are proposed.

Alternative E – No Action Alternative

Under the No Action Alternative, the following agency decisions would be made:

- OSMRE would deny the SMCRA permit for the Pinabete Permit Area,
- OSMRE would not renew the SMCRA permit for the Navajo Mine Permit Area,
- BIA would not approve the lease amendment for the FCPP,
- BIA would not approve the realignment of Burnham Road, and
- BIA and/or BLM would not renew the leases for the four subject transmission line ROWs.

Under the No Action Alternative, the Navajo Mine Permit would not be renewed and the Pinabete permit application would not be approved. In accordance with the SMCRA regulations at 30 CFR 750.12(c)(1)(ii) and 774.15(a), a valid permit issued pursuant to an approved regulatory program carries with it the right of successive renewal within the boundaries of the existing permit, upon expiration of the permit term. The existing permit for the Navajo Mine, including coal resource Areas I, II, III, and portions of Area IV North within the Navajo Mine Lease Area (Federal SMCRA Permit NM003F), as proposed by the applicant, is administered on a 5 year renewal schedule with the current permit term expiring on September 25, 2014. Considering that the permit term will expire prior to OSMRE's anticipated completion of the EIS and prior to the currently expected March 2015 Record of Decision (ROD), OSMRE will administratively extend Federal Permit NM0003F allowing NTEC to continue surface coal mining and reclamation operations under the current permit until the ROD is issued, provided that the applicant has met all renewal application requirements and procedures in accordance with 30 CFR 750.12(c)(1)(ii) and 774.15. Upon

completion of the EIS, the subsequent issuance of the ROD for the Project will address OSMRE's decision on the administratively delayed and pending permit term renewal for Federal Permit NM0003F and also for the new application for the Pinabete Mine permit. If OSMRE does not renew the Navajo Mine Permit and does not approve the Pinabete permit application, NTEC would cease to mine coal and would begin final reclamation activities in Areas II, III, and IV North. Unless otherwise requested by the Navajo Nation as provided in the applicable lease and rights-of-way documents, all ancillary buildings and facilities (e.g., communication lines, railroad) would be removed, and the land would be reclaimed according to OSMRE requirements and performance standards. Accordingly, the NTEC workforce would begin reductions in 2015. NTEC would complete backfilling and grading activities by 2022 and revegetation activities by 2024. Reclamation and environmental monitoring activities would continue for a minimum of 10 years after revegetation until OSMRE's approval affirming that all reclamation requirements have been met and OSMRE jurisdiction is terminated (2034 at the earliest).

Under the No Action Alternative, the BIA would not approve FCPP Lease Amendment No. 3. The FCPP would discontinue operation and the site would be decommissioned in accordance with the requirements of the 1960 and 1966 leases and existing Section 323 ROW grants for the plant site. APS would decommission all facilities that are not required or permitted to be left behind by the 1960 and 1966 leases. Decommissioning would require environmental abatement activities in the power block, including removal of environmental and safety hazards (e.g., asbestos and lead paint), and chemicals and oils. All waste generated during this phase would be managed and disposed of in accordance with applicable Federal environmental regulations. Dismantling and demolition would commence following the removal of asbestos, PCBs, lead paint, and any other hazardous chemicals. Upon removal of structures and facilities, the structural foundations would be removed to 24 inches below grade, the site would be profiled to allow for proper drainage, and native vegetation would be planted.

Under the No Action Alternative, the ROWs for the four subject transmission lines would not be approved. As the subject lines primarily transmit power from the FCPP, under the No Action Alternative, the power source for the transmission lines would be removed. The lines would either be decommissioned and dismantled or left in place. As with the FCPP, decommissioning and dismantling activities would be coordinated with the Navajo Nation and the BLM so that the area meets the specific needs of the planned reuse. Compliance with all environmental laws and regulations would occur throughout the demolition process. The timeline for this process is not mandated in regulatory statutes and is unknown at this time.

Failure to renew the referenced ROWs could result in the removal, or at least the cessation of operation, of some or all of the APS and PNM transmission and ancillary facilities. Failure to renew the ROW for the Moenkopi Switchyard would potentially affect other existing transmission facilities that use the switchyard. This transmission system is critical to maintaining the reliability of the regional grid, and ceasing to utilize this infrastructure would undermine regional power reliability. Therefore, the operation of this switchyard would be critical regardless of whether FCPP continues to operate. It is possible that if the currently pending lease renewal request for the FCPP is denied, then APS or another company would seek to obtain a lease or ROW grant for the FCPP switchyard, the Moenkopi Substation, and the transmission lines. Whether such a request would be approved is speculative at this time.

Applicant Proposed Measures, Best Management Practices, and Standard Operating Procedures Applicable to All Alternatives

As part of the proposed Project, APS, NTEC, and PNM would incorporate various applicant-proposed measures, standard operating procedures, and best management practices that are designed to avoid or minimize potential impacts related to operation of the FCPP, Navajo Mine, and associated transmission lines. These measures are described by resource area in Table ES-11. These measures would apply to all action alternatives.

Summary of Potential Environmental Impacts and Identification of Preferred Alternative

The NEPA analysis addressed resource areas identified during the scoping process. An impacts analysis was conducted for each resource area, resulting in projected impacts to resources and suggestions of mitigation measures where appropriate. Table ES-12 contains a summary of impacts and mitigation measures.

NEPA requires that a lead agency identify a preferred alternative. Based on the impact analysis, summarized below, OSMRE has selected Alternative A, the Proposed Action, as the preferred alternative.

Table ES-11 Applicant Proposed Measures, Best Management Practices, and Standard Operating Procedures Applicable to All Alternatives

Resource Area	Navajo Mine	F CPP	Transmission Lines
Air Quality	Fugitive dust control measures	Dust Control Plan	Vehicle restrictions to existing roads Speed limits
Climate Change	No specific measures proposed	No specific measures proposed	No specific measures proposed
Earth Resources	Resource Recovery and Protection Plan Topdressing Management Plan Surface Stabilization and Sediment Control Plan for Reclaimed Lands	No specific measures are proposed	No maintenance when soil is too wet Return boulders to original location if moved
Cultural Resources	Testing and data recovery program prior to ground disturbance at significant sites Monitoring of ground-disturbing activities near eligible sites by a qualified archaeologist and Navajo Cultural Specialist Incorporate Pinabete Mine Programmatic Agreement (PA) requirements Provide use of the Ceremonial Hogan	No specific measures proposed	No specific measures proposed
Water Resources/Hydrology	Groundwater Monitoring Plan Sediment Control Plan Surface Water Monitoring Plan Spill Prevention, Control, and Countermeasures Plan Project design to minimize impacts to waters of the US	Stormwater Pollution Prevention Plan On-site structural controls SPCC Plan	Hazardous fluid spill prevention and protection practices Standard construction best management practices, including silt fences, straw bales, silt curtains
Vegetation	Environmental and Biological Resources Compliance Monitoring Plan Noxious Weed Management Plan Environmental training for workers, and installation of protective barriers Revegetation Plan	No specific measures are proposed	Noxious weed control

Resource Area	Navajo Mine	FCPP	Transmission Lines
Wildlife and Habitats	<p>Common to all Project components, the construction work schedule will minimize noise and human activities effects on wildlife.</p> <p>Protective barriers will be placed around sensitive wildlife habitats prior to construction,</p> <p>Pre-construction surveys will be conducted as specified by the Navajo Nation Department of Fish and Wildlife and US Fish and Wildlife Service.</p> <p>Initial clearing and grading will occur outside of the bird breeding season, or after a biologist conducts a survey.</p> <p>Speed limits will minimize vehicular collisions with wildlife</p> <p>Navajo Mine – In addition to the measures above, NTEC will implement a Fish and Wildlife Enhancement Plan and a Wildlife Monitoring and Mitigation Plan, and proposed electrical transmission lines will be designed and constructed using “raptor-safe” design.</p> <p>Transmission Lines – In addition to the measures above, APS will implement a Wildlife Protection Program and PNM will implement an Avian Protection Program. Nesting bird surveys prior to herbicide application</p>		
Special-Status Species	No specific measures are proposed	Surveys for Southwestern willow flycatcher habitat prior to vegetation removal	<p>Biologically sensitive areas mapped prior to construction</p> <p>Breeding season timing restrictions if suitable nesting habitat for Mexican spotted owl identified within ¼ mile of transmission line</p> <p>Avoidance of suitable habitat for sensitive plant species</p> <p>No vegetation maintenance within 200-meters of Mancos milkvetch habitat</p>
Land Use and Transportation	<p>Compensation of customary users for loss of grazing areas</p> <p>Assistance with permanent relocation of three dwellings located within the Pinabete Permit Area</p> <p>Compensation of families and individuals with land use rights within the Navajo Mine lease area</p>	No specific measures are proposed	No specific measures are proposed
Socioeconomics	Implement a Native America hiring and vendor preference policy	No specific measures are proposed	No specific measures are proposed
Environmental Justice	No specific measures are proposed	No specific measures are proposed	No specific measures are proposed
Indian Trust Assets	No specific measures are proposed	No specific measures are proposed	No specific measures are proposed

Resource Area	Navajo Mine	F CPP	Transmission Lines
Visual Resources	Interim reclamation of exhausted mine pits	No specific measures are proposed	No specific measures are proposed
Noise and Vibration	Implement protective measures related to blasting, including, only conducting blasting during daytime hours, posting signage, sounding audible blast warnings, publishing blast schedules; and conducting pre-blast surveys as requested	No specific measures are proposed	No specific measures are proposed
Hazardous and Solid Wastes	Hazardous waste management and Chemical Procurements system and adherence to all applicable tribal, state and Federal regulations	No specific measures are proposed	No specific measures are proposed
Recreation	No specific measures are proposed	No specific measures are proposed	No specific measures are proposed
Health and Safety	Emergency Response Plan Surface Fire Plan Environmental, Health, Safety, and Community Event Reporting Overburden Blasting Management Pre-blast and shot-firing Management Contractor Management Program Chemical Management System Ground Control Plan Mine Site Traffic Management Plan Surface Mobile Equipment Management with ATVs On-site Light Vehicle Safety Isolation Management Lifting Management Program Working at Heights Management Pathogens and Viruses Management	Fire Protection Plan Tailboard Conferences Waste Management Plans Digging Operations Program Mobile Equipment Fleet and Shop Safety Work Zone Safety	APS Public Safety Electrical Outreach Program PNM Health and Safety Program

Table ES-12 Impacts and Mitigation Measures of Alternatives by Resource Area

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	

AIR QUALITY

Navajo Mine					
Air emissions impacts would be negligible.	No impacts	No mitigation measures recommended			
FCPP					
Air emissions would not result in exceedances of any NAAQS. Deposition impacts within 50 kilometers of FCPP would be negligible.	Air emissions would not result in exceedances of any NAAQS. Deposition impacts within 50 kilometers of FCPP would be negligible.	Air emissions would not result in exceedances of any NAAQS. Deposition impacts within 50 kilometers of FCPP would be negligible.	Air emissions would not result in exceedances of any NAAQS. Deposition impacts within 50 kilometers of FCPP would be negligible.	No impacts	No mitigation measures are recommended
Transmission Lines					
Air emissions impacts would be negligible.	No impacts	No mitigation measures recommended			

CLIMATE CHANGE

	Navajo Mine				
Climate Change impacts would be negligible relative to other sources.	Climate Change impacts would be negligible relative to other sources.	Climate Change impacts would be negligible relative to other sources.	Climate Change impacts would be negligible relative to other sources.	No impacts	No mitigation measures recommended

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	
FCPP					
Climate Change impacts from stationary sources (Units 4 and 5) would be minor relative to other sources. Climate Change impacts from mobile sources (e.g. vehicles and equipment) would be negligible relative to other sources.	Climate Change impacts from stationary sources (Units 4 and 5) would be minor relative to other sources. Climate Change impacts from mobile sources (e.g. vehicles and equipment) would be negligible relative to other sources.	Climate Change impacts from stationary sources (Units 4 and 5) would be minor relative to other sources. Climate Change impacts from mobile sources (e.g. vehicles and equipment) would be negligible relative to other sources.	Climate Change impacts from stationary sources (Units 4 and 5) would be minor relative to other sources. Climate Change impacts from mobile sources (e.g. vehicles and equipment) would be negligible relative to other sources.	No impacts	No mitigation measures recommended
Transmission Lines					
Climate Change impacts would be minor relative to other sources.	Climate Change impacts would be minor relative to other sources.	Climate Change impacts would be minor relative to other sources.	Climate Change impacts would be minor relative to other sources.	No impacts	No mitigation measures recommended

EARTH RESOURCES

Navajo Mine					
Impacts to landforms and topography would be extensive for the life of the mine, but would be considered minor after reclamation.	Impacts to landforms and topography would be extensive for the life of the mine, but would be considered minor after reclamation.	Impacts to landforms and topography would be extensive for the life of the mine, but would be considered minor after reclamation.	Impacts to landforms and topography would be extensive for the life of the mine, but would be considered minor after reclamation.	A minor impact due to a slight alternation in topographic relief would occur compared to pre-mining conditions.	No mitigation measures recommended
Impacts to soils would be minor.	No impacts	No mitigation measures recommended			
Impacts to geological resources and minerals are considered negligible.	Impacts to geological resources and minerals are considered negligible.	Impacts to geological resources and minerals are considered negligible.	Impacts to geological resources and minerals are considered negligible.	No impacts	No mitigation measures recommended

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	
Impacts to paleontological resources would be major and permanent; at least 43 significant paleontological resources would be physically affected by excavation of the pits in Area IV North and construction of the haul roads.	Under Alternative B, two known significant paleontological resources would potentially be affected.	Under Alternative C, 38 known significant paleontological resources would be affected.	Impacts to paleontological resources would be major and permanent; at least 43 significant paleontological resources would be physically affected by excavation of the pits in Area IV North and construction of the haul roads.	Under Alternative D, two known significant paleontological resources would be impacted within the pre-2016 striplines of Area III.	Any significant existing or new paleontological discoveries encountered during mining or road construction would be appropriately evaluated, mitigated, and curated. The development of an inadvertent discovery plan is recommended to establish the procedures to be followed in the event that fossilized remains are encountered during surface mining operations.
FCPP					
Impacts to landforms and topography would be considered minor.	Impacts to landforms and topography would be considered minor.	Impacts to landforms and topography would be considered minor.	Impacts to landforms and topography would be considered minor.	No impacts	No mitigation measures recommended
Impact to soils would be considered minor. Impacts to geology and mineral resources would be negligible.	Impact to soils would be considered minor. Impacts to geology and mineral resources would be negligible.	Impact to soils would be considered minor. Impacts to geology and mineral resources would be negligible.	Impact to soils would be considered minor. Impacts to geology and mineral resources would be negligible.	No impacts	No mitigation measures recommended
Impacts to paleontological resources would be considered negligible given the eroded nature of the deposits in the area of the proposed DFADAs	Impacts to paleontological resources would be considered negligible given the eroded nature of the deposits in the area of the proposed DFADAs	Impacts to paleontological resources would be considered negligible given the eroded nature of the deposits in the area of the proposed DFADAs	Impacts to paleontological resources would be considered negligible given the eroded nature of the deposits in the area of the proposed DFADAs	No impacts	No mitigation measures recommended

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	
Transmission Lines					
Impacts to landforms, topography, and paleontological resources would be negligible.	Impacts to landforms, topography, and paleontological resources would be negligible.	Impacts to landforms, topography, and paleontological resources would be negligible.	Impacts to landforms, topography, and paleontological resources would be negligible.	No impacts	No mitigation measures recommended

CULTURAL RESOURCES

Navajo Mine					
Development of the Pinabete Permit Area could potentially impact 84 archaeological resources and 6 TCPs. OSMRE is consulting with the Navajo Tribal Historic Preservation Officer (THPO) and State Historic Preservation Officer (SHPO) for determinations of Project effects.	Development of this alternative could potentially impact 86 archaeological resources and 3 TCPs. OSMRE is consulting with the Navajo THPO and SHPO for determinations of Project effects.	Development of this alternative could potentially impact 130 archaeological resources and 6 TCPs. OSMRE is consulting with the Navajo THPO and SHPO for determinations of Project effects.	Development of the Pinabete Permit Area could potentially impact 84 archaeological resources and 6 TCPs. OSMRE is consulting with the Navajo Tribal Historic Preservation Officer (THPO) and State Historic Preservation Officer (SHPO) for determinations of Project effects.	No impacts	A PA for the Navajo Mine is being developed that defines mitigation for adverse effects on historic properties. A draft is included in Appendix B. Otherwise, no additional mitigation is required.
FCPP					
Potential impacts to 20 archaeological resources and 7 TCPs. OSMRE is consulting with the Navajo THPO and SHPO for determinations of Project effects.	Potential impacts to 20 archaeological resources and 7 TCPs. OSMRE is consulting with the Navajo THPO and SHPO for determinations of Project effects.	Potential impacts to 20 archaeological resources and 7 TCPs. OSMRE is consulting with the Navajo THPO and SHPO for determinations of Project effects.	Potential impacts to 20 archaeological resources and 7 TCPs. OSMRE is consulting with the Navajo THPO and SHPO for determinations of Project effects.	Potential impacts to 20 archaeological resources and 7 TCPs. OSMRE is consulting with the Navajo THPO and SHPO for determinations of Project effects.	A PA for the FCPP is being developed that defines mitigation for adverse effects on historic properties. A draft is included in Appendix B. Otherwise, no additional mitigation is required.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	
Transmission Lines					
Potential impacts to two archaeological resources, three historic resources, and seven TCPs. OSMRE is consulting with the Navajo THPO and SHPO for determinations of Project effects.	Potential impacts to two archaeological resources, three historic resources, and seven TCPs. OSMRE is consulting with the Navajo THPO and SHPO for determinations of Project effects.	Potential impacts to two archaeological resources, three historic resources, and seven TCPs. OSMRE is consulting with the Navajo THPO and SHPO for determinations of Project effects.	Potential impacts to two archaeological resources, three historic resources, and seven TCPs. OSMRE is consulting with the Navajo THPO and SHPO for determinations of Project effects.	If transmission lines are left in place, no impacts. If transmission lines are dismantled, potential impacts to two archaeological resources, three historic resources, and seven TCPs.	A PA is being developed that defines mitigation for adverse effects on historic properties. A draft is included in Appendix B. Otherwise, no additional mitigation is required.

WATER RESOURCES / HYDROLOGY

Navajo Mine					
Hydrologic and water quality impacts would be minor.	Hydrologic and water quality impacts would be minor.	Hydrologic and water quality impacts would be minor.	Hydrologic and water quality impacts would be minor.	Short-term impacts to near-surface and surface water quality could occur.	No mitigation measures recommended
Impacts to groundwater flow would be expected to be moderate due to the long rate of groundwater recovery. Impact to groundwater quality due to a potential increase in total dissolved solids in the Cottonwood Arroyo alluvium would be minor.	Impacts to groundwater flow would be expected to be moderate due to the long rate of groundwater recovery. Impact to groundwater quality due to a potential increase in total dissolved solids in the Cottonwood Arroyo alluvium would be minor.	Impacts to groundwater flow would be expected to be moderate due to the long rate of groundwater recovery. Impact to groundwater quality due to a potential increase in total dissolved solids in the Cottonwood Arroyo alluvium would be minor.	Impacts to groundwater flow would be expected to be moderate due to the long rate of groundwater recovery. Impact to groundwater quality due to a potential increase in total dissolved solids in the Cottonwood Arroyo alluvium would be minor.	Long-term groundwater flow would recover following reclamation of the Navajo Mine.	No mitigation measures recommended

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	Mitigation Measures
Direct long-term, yet negligible, impacts would occur because of reduced runoff volumes to Pinabete and Cottonwood arroyos. Impacts of the mine on the geometry, morphology, or location of the natural stream patterns are expected to be negligible.	Direct long-term, yet negligible, impacts would occur because of reduced runoff volumes to Pinabete and Cottonwood arroyos. Mining would occur within Pinabete Arroyo; therefore, flows from the arroyo would be diverted around mining activities into No Name Arroyo for the duration of the mine period (through 2041), resulting in long-term impacts to hydrology.	Direct long-term, yet negligible, impacts would occur because of reduced runoff volumes to Pinabete and Cottonwood arroyos.	Direct long-term, yet negligible, impacts would occur because of reduced runoff volumes to Pinabete and Cottonwood arroyos. Impacts of the mine on the geometry, morphology, or location of the natural stream patterns are expected to be negligible.	No impacts	No mitigation measures recommended
Permanent impacts to 5 acres of waters of the US.	Permanent impacts to 33 acres of waters of the US.	Permanent impacts to 6.6 acres of waters of the US.	Permanent impacts to 5 acres of waters of the US.	No impacts	Compensatory mitigation for unavoidable impacts to waters of the US would be required under the 404 Individual Permit
FCPP					
Impacts would be negligible.	Impacts would be negligible.	Impacts would be negligible.	Impacts would be negligible.	Evaporation of Morgan Lake would potentially result in elevated levels of heavy metals in lakebed sediments.	Under the No Action Alternative, OSMRE recommends APS conduct heavy metal sampling and analysis and conduct remediation activities as needed at Morgan Lake.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	
Transmission Lines					
Impacts to groundwater would be negligible. Short-term impacts to surface water from the operation of transmission lines would occur only during maintenance and repair to the lines.	Impacts to groundwater would be negligible. Short-term impacts to surface water from the operation of transmission lines would occur only during maintenance and repair to the lines.	Impacts to groundwater would be negligible. Short-term impacts to surface water from the operation of transmission lines would occur only during maintenance and repair to the lines.	Impacts to groundwater would be negligible. Short-term impacts to surface water from the operation of transmission lines would occur only during maintenance and repair to the lines.	Decommissioning and dismantling of the powerlines would result in negligible impacts. If transmission lines are left in place, no impacts would occur.	No mitigation measures recommended

VEGETATION

Navajo Mine					
Short-term impacts from vegetation removal would occur. Indirect impacts would be minor.	Short-term impacts from vegetation removal would occur. Indirect impacts would be minor.	Short-term impacts from vegetation removal would occur. Indirect impacts would be minor. Short-term impacts would be greater than, but similar to, those under Alternative A.	Short-term impacts from vegetation removal would occur. Indirect impacts would be minor.	No impacts	No mitigation measures recommended
FCPP					
Indirect impacts would be permanent and minor. Direct impacts would occur resulting in a reduction of overall vegetative cover and permanent loss of productivity during facility life.	Indirect impacts would be permanent and minor. Direct impacts would occur resulting in a reduction of overall vegetative cover and permanent loss of productivity during facility life (these impacts would be proportionally greater than those under Alternative A).	Indirect impacts would be permanent and minor. Direct impacts would occur resulting in a reduction of overall vegetative cover and permanent loss of productivity during facility life.	Indirect impacts would be permanent and minor. Direct impacts would occur resulting in a reduction of overall vegetative cover and permanent loss of productivity during facility life.	No impacts	No mitigation measures recommended

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	
Transmission Lines					
Impacts would be negligible.	Impacts would be negligible.	Impacts would be negligible.	Impacts would be negligible.	If transmission lines are decommissioned and dismantled, short-term direct impacts to vegetation would occur. If transmission lines are left in place, impacts would be negligible.	No mitigation measures recommended

WILDLIFE & HABITATS

Navajo Mine					
Impacts from habitat loss and fragmentation would be moderate. Impacts to wildlife would be considered moderate due to the permanent loss of habitat and potential wildlife mortality from long-term traffic on Burnham road. Impacts from the transportation of coal would be moderate and short-term.	Impacts from habitat loss and fragmentation would be moderate. Impacts to wildlife would be considered moderate due to the permanent loss of habitat and potential wildlife mortality from long-term traffic on Burnham road. Impacts from the transportation of coal would be moderate and short-term.	Impacts from habitat loss and fragmentation would be moderate. Impacts to wildlife would be considered moderate due to the permanent loss of habitat and potential wildlife mortality from long-term traffic on Burnham road. Impacts from the transportation of coal would be moderate and short-term.	Impacts from habitat loss and fragmentation would be moderate. Impacts to wildlife would be considered moderate due to the permanent loss of habitat and potential wildlife mortality from long-term traffic on Burnham road. Impacts from the transportation of coal would be moderate and short-term.	No impacts	No mitigation measures recommended
F CPP					
Minor impacts from air and noise pollution would occur. Impacts would be moderate because of the permanent loss of habitat.	Minor impacts from air and noise pollution would occur. Impacts would be moderate because of the permanent loss of habitat.	Minor impacts from air and noise pollution would occur. Impacts would be moderate because of the permanent loss of habitat.	Minor impacts from air and noise pollution would occur. Impacts would be moderate because of the permanent loss of habitat.	Short-term impacts would occur because of the increased noise and dust during demolition.	No mitigation measures recommended

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	
Transmission Lines					
Impacts would be long-term and minor.	Impacts would be short-term and minor.	No mitigation measures recommended			

SPECIAL STATUS SPECIES

Navajo Mine					
Impacts would be long-term and minor to negligible.	Impacts would be long-term and minor to negligible (and potentially greater than those impacts under Alternative A).	Impacts would be long-term and minor to negligible (and potentially greater than those impacts under Alternative A).	Impacts would be long-term and minor to negligible.	No impacts	No mitigation measures recommended
FCPP					
Impacts would be long-term and minor to negligible.	Impacts would be long-term and minor to negligible.	Impacts would be long-term and minor to negligible.	Impacts would be long-term and minor to negligible.	No impacts	No mitigation measures recommended
Transmission Lines					
Impacts would be long-term and minor to negligible.	Impacts would be long-term and minor to negligible.	Impacts would be long-term and minor to negligible.	Impacts would be long-term and minor to negligible.	No impacts	No mitigation measures recommended

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	

LAND USE & TRANSPORTATION

<i>Navajo Mine</i>					
Impacts to land use would be long-term but minor.	Impacts to land use would be long-term but minor.	Impacts to land use would be long-term but minor.	Impacts to land use would be long-term but minor.	No impacts	No mitigation measures recommended
Short-term impacts to traffic would occur due to road realignment, and temporary use restrictions would result in minor impacts lasting the duration of mining.	Short-term moderate adverse disturbance to residential land use would occur. Short-term impacts to traffic would occur due to road realignment, and temporary use restrictions would result in minor impacts lasting the duration of mining.	Short-term minor adverse disturbance to residential land use would occur. Short-term impacts to traffic would occur due to road realignment, and temporary use restrictions would result in minor impacts lasting the duration of mining.	Short-term impacts to traffic would occur due to road realignment, and temporary use restrictions would result in minor impacts lasting the duration of mining.	No impacts	No mitigation measures recommended
<i>FCPP</i>					
Minor impacts to the transportation system would result from increased truck trips delivering ammonia to the power plant.	Minor impacts to the transportation system would result from increased truck trips delivering ammonia to the power plant.	Minor impacts to the transportation system would result from increased truck trips delivering ammonia to the power plant.	Minor impacts to the transportation system would result from increased truck trips delivering ammonia to the power plant.	No impacts	No mitigation measures recommended
<i>Transmission Lines</i>					
No impacts	No impacts	No impacts	No impacts	No impacts	No mitigation measures recommended

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	

SOCIOECONOMICS

<i>Population and Demographics</i>					
No impacts	No impacts	No impacts	No impacts	No impacts	No mitigation measures recommended
<i>Economic Background</i>					
No impacts	No impacts	No impacts	No impacts	A major impact would occur from the loss of revenue from fiscal contributions derived from FCPP and Navajo Mine.	No mitigation measures recommended
<i>Indicators of Social and Economic Well-Being</i>					
No impacts	No impacts	No impacts	No impacts	The weakened economy could result in adverse impacts.	No mitigation measures recommended
<i>Navajo Public Services</i>					
No impacts	No impacts	No impacts	No impacts	The reduction in revenues from tax royalties from the Navajo Mine and FCPP would negatively impact the quality and quantity of public services.	No mitigation measures recommended

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	

ENVIRONMENTAL JUSTICE

<i>Navajo Mine/FCPP/Transmission Lines</i>					
If a breach of the ash disposal impoundments occurred, potential impacts to tribal lands would be minor.	If a breach of the ash disposal impoundments occurred, potential impacts to tribal lands would be minor.	If a breach of the ash disposal impoundments occurred, potential impacts to tribal lands would be minor.	If a breach of the ash disposal impoundments occurred, potential impacts to tribal lands would be minor.	Adverse major impacts related to socioeconomics would occur.	No mitigation measures recommended

INDIAN TRUST ASSETS

<i>Navajo Mine</i>					
Potential limited impacts to the value of adjacent land held in trust could occur. Minor impacts would occur to cultural resource Indian Trust Assets (ITAs) and grazing, hunting, and gathering resource ITAs. Minor effects are expected to occur to paleontological resources as a result of the development of the Pinabete Permit Area.	Potential limited impacts to the value of adjacent land held in trust could occur. Minor impacts would occur to cultural resource ITAs and grazing, hunting, and gathering resource ITAs. minor effects are expected to occur to paleontological resources as a result of the development of the Pinabete Permit Area.	Potential limited impacts to the value of adjacent land held in trust could occur. Minor impacts would occur to grazing, hunting, and gathering resource ITAs. Minor effects are expected to occur to paleontological resources as a result of the development of the Pinabete mine. Any impacts to cultural resource ITAs would be minor.	Potential limited impacts to the value of adjacent land held in trust could occur. Minor impacts would occur to cultural resource Indian Trust Assets (ITAs) and grazing, hunting, and gathering resource ITAs. Minor effects are expected to occur to paleontological resources as a result of the development of the Pinabete Permit Area.	Adverse impacts to the economic value of mineral trust assets would occur because royalties associated with the operation of the Navajo Mine would be eliminated.	No mitigation measures recommended
<i>FCPP</i>					

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	
Any impacts to cultural resource ITAs would be minor. Access restrictions would be expected to result in minor impacts to grazing, hunting, and gathering resources. Impacts to paleontological ITAs would be minor.	Any impacts to cultural resource ITAs would be minor. Access restrictions would be expected to result in minor impacts to grazing, hunting, and gathering resources. Impacts to paleontological ITAs would be minor.	Any impacts to cultural resource ITAs would be minor. Access restrictions would be expected to result in minor impacts to grazing, hunting, and gathering resources. Impacts to paleontological ITAs would be minor.	Any impacts to cultural resource ITAs would be minor. Access restrictions would be expected to result in minor impacts to grazing, hunting, and gathering resources. Impacts to paleontological ITAs would be minor.	No impacts	No mitigation measures recommended
Transmission Lines					
Potential impacts to groundwater would be negligible, and any impacts to cultural resource ITAs would be minor.	Potential impacts to groundwater would be negligible, and any impacts to cultural resource ITAs would be minor.	Potential impacts to groundwater would be negligible, and any impacts to cultural resource ITAs would be minor.	Potential impacts to groundwater would be negligible, and any impacts to cultural resource ITAs would be minor.	No impacts	No mitigation measures recommended

VISUAL RESOURCES

Navajo Mine					
Strip mining would cause long-term "moderately to highly" adverse impact from strip mining.	Strip mining would cause long-term "highly" adverse impact from strip mining.	Long-term "highly" adverse impact from strip mining.	Strip mining would cause long-term "moderately to highly" adverse impact from strip mining.	No impacts	No mitigation measures

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	
FCPP					
The overall impacts from changes to the FCPP would be negligible, and the overall impacts from changes to the DFADAs would be moderately adverse. Therefore, the overall impacts from implementation of the new lease agreement at the FCPP would be low adverse.	The overall impacts from implementation of the new lease agreement at the FCPP would be low adverse. (Same impacts as under Alternative A).	The overall impacts from implementation of the new lease agreement at the FCPP would be low adverse. (Same impacts as under Alternative A).	The overall impacts from changes to the FCPP would be negligible, and the overall impacts from changes to the DFADAs would be moderately adverse. Therefore, the overall impacts from implementation of the new lease agreement at the FCPP would be low adverse.	No impacts	No mitigation measures
Transmission Lines					
No impacts	No impacts	No impacts	No impacts	No impacts	No mitigation measures recommended

NOISE & VIBRATION

Navajo Mine					
Noise from mining activities would result in short-term adverse impacts at the closest residence for the duration of mining activity in the nearby area. Noise from blasting operations would be minor. Reclamation activities would result in adverse noise impacts to nearby residents for the duration of activity.	Noise from mining activities would result in short-term adverse impacts at the closest residence for the duration of mining activity in the nearby area. Noise from blasting operations would be minor. Reclamation activities would result in adverse noise impacts to nearby residents for the duration of activity.	Noise from mining activities would result in short-term adverse impacts at the closest residence for the duration of mining activity in the nearby area. Noise from blasting operations would be minor. Reclamation activities would result in adverse noise impacts to nearby residents for the duration of activity.	Noise from mining activities would result in short-term adverse impacts at the closest residence for the duration of mining activity in the nearby area. Noise from blasting operations would be minor. Reclamation activities would result in adverse noise impacts to nearby residents for the duration of activity.	No impacts	Implement measures to reduce noise and annoyance when operations are within approximately ½ mile of a receptor.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	
Ground-borne vibration impacts from blasting operations and coal transportation would be minor.	Ground-borne vibration impacts from blasting operations and coal transportation would be minor.	Ground-borne vibration impacts from blasting operations and coal transportation would be minor.	Ground-borne vibration impacts from blasting operations and coal transportation would be minor.	No impacts	No mitigation measures recommended
FCPP					
Noise from continued operation of the power plant would be minor. Short-term increases in noise during installation of SCR would be minor.	Noise from continued operation of the power plant would be minor. Short-term increases in noise during installation of SCR would be minor.	Noise from continued operation of the power plant would be minor. Short-term increases in noise during installation of SCR would be minor.	Noise from continued operation of the power plant would be minor. Short-term increases in noise during installation of SCR would be minor.	No impacts	No mitigation measures recommended
Transmission Lines					
No impacts	No impacts	No impacts	No impacts	No impacts	No mitigation measures recommended

HAZARDOUS AND SOLID WASTES

Navajo Mine					
Any impact from an accidental release or spill of hazardous materials would be negligible to minor.	Any impact from an accidental release or spill of hazardous materials would be negligible to minor.	Any impact from an accidental release or spill of hazardous materials would be negligible to minor. These short-term impacts may be slightly greater than those listed under Alternative A.	Any impact from an accidental release or spill of hazardous materials would be negligible to minor.	Short-term impacts would increase due to removal of ancillary buildings, facilities, and hazardous materials.	No mitigation measures are recommended

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	
FCPP					
<p>The recommended ammonia option (urea) would have negligible impacts. The other two ammonia options (anhydrous and aqueous) would have moderate impacts.</p> <p>Impacts from a potential accidental release from the surface impoundment dam would be minor.</p>	<p>The recommended ammonia option (urea) would have negligible impacts. The other two ammonia options (anhydrous and aqueous) would have moderate impacts.</p> <p>Impacts from a potential accidental release from the surface impoundment dam would be minor.</p>	<p>The recommended ammonia option (urea) would have negligible impacts. The other two ammonia options (anhydrous and aqueous) would have moderate impacts.</p> <p>Impacts from a potential accidental release from the surface impoundment dam would be minor.</p>	<p>The recommended ammonia option (urea) would have negligible impacts. The other two ammonia options (anhydrous and aqueous) would have moderate impacts.</p> <p>Impacts from a potential accidental release from the surface impoundment dam would be minor.</p>	<p>Impacts to hazardous waste and solid waste would be short-term and predominately associated with disposal of demolition materials.</p>	<p>Location restrictions for new disposal units</p> <p>Operating requirements including fugitive dust controls, run-off controls, and inspection requirements</p> <p>Required use of composite liner</p> <p>Groundwater Monitoring and Corrective Action Requirements</p> <p>Develop closure and post-closure management plan for areas where CCRs have been disposed or where they would be disposed.</p>
Transmission Lines					
<p>An accidental release or spill of hazardous materials used for the transmission lines would be local and negligible to minor.</p>	<p>An accidental release or spill of hazardous materials used for the transmission lines would be local and negligible to minor.</p>	<p>An accidental release or spill of hazardous materials used for the transmission lines would be local and negligible to minor.</p>	<p>An accidental release or spill of hazardous materials used for the transmission lines would be local and negligible to minor.</p>	<p>Impacts associated with decommissioning and dismantling activities would be negligible to minimal and short-term.</p>	<p>No mitigation measures are recommended</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	

RECREATION

<i>Navajo Mine</i>					
Mining construction would result in long-term impacts to the visual character of the area, though the resulting impact on recreational resources would be minor. Long-term impacts would occur resulting in displaced dispersed recreational opportunities. Potential impacts to regional recreational resources would be negligible.	Mining construction would result in long-term impacts to the visual character of the area, though the resulting impact on recreational resources would be minor. Long-term impacts would occur resulting in displaced dispersed recreational opportunities. Potential impacts to regional recreational resources would be negligible.	Mining construction would result in long-term impacts to the visual character of the area, though the resulting impact on recreational resources would be minor. Long-term impacts would occur resulting in displaced dispersed recreational opportunities. Potential impacts to regional recreational resources would be negligible.	Mining construction would result in long-term impacts to the visual character of the area, though the resulting impact on recreational resources would be minor. Long-term impacts would occur resulting in displaced dispersed recreational opportunities. Potential impacts to regional recreational resources would be negligible.	No impacts	No mitigation measures recommended
<i>F CPP</i>					
No impacts	No impacts	No impacts	No impacts	Elimination of water to Morgan Lake would have a major, long-term impact.	No mitigation measures recommended
<i>Transmission Lines</i>					
No impacts	No impacts	No impacts	No impacts	No impacts	No mitigation measures recommended

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Mitigation Measures
Proposed Action	Navajo Mine Extension Project	Alternative Pinabete Plan	Ash Disposal Alternative	No Action Alternative	

HEALTH AND SAFETY

<i>Navajo Mine</i>					
Impacts would be negligible.	No impacts	No mitigation measures recommended			
<i>F CPP</i>					
Impacts would be negligible.	No impacts	No mitigation measures recommended			
<i>Transmission Lines</i>					
Impacts would be negligible.	No impacts	No mitigation measures recommended			

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