

## **CHAPTER 1 – PURPOSE AND NEED**

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### **INTRODUCTION**

Arizona Public Service (APS) is proposing to construct a 69 kilovolt (kV) transmission line to connect the Winslow substation in Winslow with a new substation in the Blue Ridge area. A portion of the proposed transmission line corridor and the proposed substation would be located on lands administered by the Coconino National Forest (CNF). The CNF is considering issuing a permit to APS for the construction, operation, and maintenance of the facilities within a suitable corridor that corresponds to the overall project needs of APS.

### **DOCUMENT STRUCTURE**

This environmental assessment (EA) has been prepared in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This EA discloses the direct, indirect, and cumulative environmental impacts that would result from the Proposed Action. The document is organized into six parts as follows:

- Chapter 1 – Purpose and Need: This section includes information on the purpose of and need for the project, the project proponent’s proposal for achieving that purpose and need, and the relationship of the project with the CNF’s Land and Resource Management Plan (Forest Plan). This section also details how the U.S. Forest Service (Forest Service) informed the public of the proposal and how the public responded.
- Chapter 2 – Alternatives: This section describes the alternatives considered, provides a more detailed description of the proponent’s Proposed Action, and discusses potential mitigation measures.
- Chapter 3 – Affected Environment and Environmental Consequences: This section describes the affected environment and environmental effects of implementing the Proposed Action. This analysis is organized by resource area. Under each resource, the affected environment is described first, followed by the effects of the No-Action Alternative. The No-Action Alternative and current condition provide a baseline for evaluation and comparison of the Proposed Action Alternative.
- Chapter 4 – Consultation and Coordination: This section provides a list of agencies and individuals consulted during the development of the EA.
- Chapter 5 – List of Preparers and Reviewers: This section provides a list of the preparers and reviewers of the document.
- Chapter 6 – References.

- Appendix A: The appendix provides detailed information about the biological resources that may occur in the vicinity of the proposed project.

Documents included in the Blue Ridge 69kV Transmission Line Project Record are identified by a document number and are referenced in this document by the annotation “PR” and the project record number, i.e., [PR #].

## **BACKGROUND**

APS is the electric power supplier in northern Arizona and in the communities of Happy Jack, Blue Ridge, and Winslow located in Coconino and Navajo counties, Arizona. The Blue Ridge area has evolved from a few houses scattered on private land inholdings within the CNF into an area with residential subdivisions. APS serves approximately 1,200 customers in the Blue Ridge area, and expects their customer base to exceed 2,000 households over the next five years. Presently, the only source of power to communities in the Blue Ridge area is a single 21 kilovolt (kV) radial distribution line. This line was constructed in the 1950s and extends approximately 35 miles from its present source at the Tonto Substation in Payson through heavily forested, mountainous terrain.

Because of the radial configuration of the existing line (single line into the area), any outage occurring on the line will cause a total blackout of the Blue Ridge communities. This existing line is subject to storm-related outages, such as wind, lightning, and trees falling on power lines. Since the existing line is situated in a remote location that can be difficult to access for repairs, the duration of outages has been extensive in the Blue Ridge area.

APS has worked to implement short-term system improvements to reduce outage duration in the area until a second source of power can be constructed. The most recent of these efforts was the installation of a two-megawatt generator to provide a second, temporary source of power for use during extended outage situations. APS also installed additional control devices to reduce the amount of time required to restore power and the number of customers impacted by the outages. Other short-term improvements included the installation of an additional phase of distribution line to the Starlight Pines subdivision and increasing capacity on the existing 21kV line.

## **PROJECT LOCATION**

The proposed project study area, shown on Figure 1-1, is located between Winslow and Blue Ridge in Coconino and Navajo counties, Arizona, and includes land administered by the CNF, Arizona State Trust lands, and private lands. The Blue Ridge 69kV Transmission Line Project would consist of approximately 39 miles of 69kV transmission line located between the Winslow Substation and a new 69/21kV substation located in the Blue Ridge area.

FIGURE 1-1

Approximately 11 miles of the proposed transmission line are located on the CNF, as well as the substation site. From the National Forest boundary, the proposed transmission line route would continue 5 miles south towards Quayle Hill, approximately ¼ mile east of SR 87, and then would roughly parallel Forest Road 319F for approximately 6 miles to reach the substation site. The proposed substation site is located approximately 330 feet east of SR 87 in Sections 30 and 29, T15N, R12E. The prescribed burn would include the substation area, lands between SR 87 and the right-of-way corridor on CNF lands, and lands adjacent to and surrounding the Bly Pit just west of SR 87.

Approximately 28 miles of the proposed transmission line are located outside of the CNF. The route begins in Winslow at the existing Winslow Substation, and rebuilds approximately 1.5 miles of existing 69kV line to double-circuit configuration heading east towards Transcon Lane. The route crosses over SR 87/Route 66 and turns west in the Arizona Department of Transportation (ADOT) right-of-way. The route then turns south along the easterly line of Section 30, T19N, R16E, and heads toward a flood control levee. The route parallels the south side of the levee in a westerly direction for approximately 1.5 miles, then turns south and parallels SR 87 for approximately 25 miles to reach the National Forest boundary. The transmission line would be located 5 feet outside of the ADOT right-of-way on state and private lands.

## **PURPOSE AND NEED FOR ACTION**

APS has submitted a proposal to the Forest Service to construct a 69 kV transmission line from Winslow, Arizona to the Blue Ridge area. Eleven miles of the transmission line and a new substation would be on CNF lands. The purpose and need for action by the Forest Service is to identify a suitable corridor for the proposed facilities on CNF lands, in order to facilitate the completion of this proposed project, and to meet the management needs and requirements set forth in the Forest Plan.

The new 69kV transmission line and substation would accomplish the following:

- increase reliability by extending a transmission source to Blue Ridge
- provide a looped distribution system and the ability to restore power in a timely manner in the event of an outage
- provide bulk power to the area and relieve the existing 21kV distribution line that has reached its capacity
- improve power quality in the area by providing a stable voltage source
- provide capacity for projected load growth in the Blue Ridge area and develop the 69kV system for meeting long-term needs

The project would improve electric reliability and power quality, as well as provide capacity for projected load growth in the Blue Ridge area, which is currently served by a single distribution line that is subject to frequent and extended outages. System studies conducted by APS have shown the need for additional electrical facilities and capacity in the Blue Ridge area. The electric power needs of APS' customers have increased to a point that additional electric transmission facilities are required to ensure reliability and provide for continued growth in the Blue Ridge area. The area has been experiencing considerable growth for the past few years and the increased load has stressed the existing electrical facilities. Continued growth will over-stress these facilities, thus APS needs to make plans now to reinforce the area's electrical facilities. The project also is needed to provide a more reliable source of power due to the issues with the difficulty of accessing the existing 21kV distribution line and the vulnerability to outages of that line.

The proposed project will benefit the communities around Blue Ridge, including Clear Creek Pines 1 and 2 and Clint's Well, in addition to strengthening the overall 69kV system in the Winslow area.

## **PROPOSED ACTION**

CNF is considering approval to allow APS to construct, operate, and maintain a substation and portions of a 69kV electric transmission line on Forest Service land. The action proposed by APS consists of the following components, which have been grouped to show actions on Forest Service land and actions outside of the CNF.

Proposed Actions on the CNF:

- Construction of approximately 11 miles of corridor to accommodate the 39-mile-long 69kV electric transmission line between the existing substation in Winslow and a proposed substation in the Blue Ridge area.
- Construction of a new substation in Blue Ridge. The substation site, which is located on Forest Service land, will be approximately 2 acres in size including a cutback and safety zone around the substation. Site preparation may include cut and fill, grading, and recontouring.
- Geotechnical investigation of subsurface soil conditions at the substation site. This will involve drilling test holes using a drilling rig.
- Vegetation clearing along the right-of-way, at the substation site, and along the substation access road (approximately 55 acres).
- A small timber products sale (approximately 50 acres) will be conducted for the removal of vegetation from the substation site and utility right-of-way between the substation and

Quayle Hill (approximately Milepost 32.5) on CNF land. Activities associated with the timber harvest and sale could include skidding, decking, hauling, and piling.

- Prescribed burning of the substation site, land between State Route (SR) 87 and the utility right-of-way corridor on CNF land, and lands adjacent to and surrounding the Bly Pit just west of SR 87 (approximately 1,300 acres). After prescribed burning is completed, the area will become part of a maintenance program with re-entry for prescribed burning occurring every 5 to 7 years.
- Utilization of two temporary laydown yard sites each approximately 300 feet by 300 feet in size (see Figure 1-1 for locations of sites).
- The access road to the substation site will be improved to an all-weather surface and graded. Graveling the surface with native materials is initially planned.
- A larger culvert will be installed on the east side of SR 87, pending coordination with the Arizona Department of Transportation (ADOT). The existing access gate will be changed from a single gate to a double gate.
- Drainage will be improved to divert runoff to swales along the substation access road, and improved on adjacent Forest Service roads. This may entail minor maintenance activities including blading.
- Security fence installation around the substation facilities. The fence will be a 10-foot-tall chain link fence with colored slats.
- Pole site clearing and excavation.
- Pole framing and setting.
- Conductor stringing.
- Cleanup and reclamation of disturbed areas.
- Maintenance of the right-of-way corridor and area surrounding the substation site, including tree trimming and vegetation clearing as needed to protect the structures. The transmission line will be inspected annually or as required using ground vehicles or on foot.

Proposed Actions off of the CNF:

- Construction of approximately 28 miles of the 39-mile-long 69kV electric transmission line between the existing substation in Winslow and a proposed substation in the Blue Ridge area.

- Addition of a 69kV breaker to the Winslow Substation.
- Utilization of four temporary laydown yard sites, each approximately 300 feet by 300 feet in size (see Figure 1-1 for locations of sites).
- Pole site clearing and excavation.
- Pole framing and setting.
- Conductor stringing.
- Cleanup and reclamation of disturbed areas.
- Maintenance of the transmission line and right-of-way corridor including tree trimming and vegetation clearing as needed to protect the structures. The transmission line will be inspected annually or as required using ground vehicles or on foot.

The existing 21kV line that serves the Blue Ridge area from Payson will not be modified; this distribution line will continue to provide electricity to the area. APS plans to complete construction of the project by spring/summer 2006.

## **DECISION FRAMEWORK**

The Forest Service (CNF) is the lead agency for this EA. The Forest Supervisor of the CNF is the deciding official for this project. The decision to be made is whether or not to approve a right-of-way grant for the construction, operation, and maintenance of the proposed transmission line and substation on National Forest land as proposed. The deciding official can:

- Select the Proposed Action, *or*
- Select the no-action alternative.
- Include mitigation or monitoring measures if necessary.
- Approve or deny a special use permit for the construction of the proposed transmission line and substation.

## **REGULATORY REQUIREMENTS AND COORDINATION**

The primary legal basis for granting easements across National Forest System land is the Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1715). Under FLPMA, the Secretary of Agriculture, in this case, is authorized to grant, issue, or renew rights-of-way over, upon, or through such land for utility corridors, roads, trails, highways, railroads, canals, etc.

Issuance of permits, leases, and easements under FLPMA is guided by the regulations of 36 CFR 251. Easements are granted across National Forest System land when the need for such is consistent with planned uses.

A Cultural Resource Clearance Report and Biological Assessment and Evaluation Report have been completed for the project [PR 1, 2]. No further environmental analysis is needed for these resources. Stipulations for coordination of implementation activities will be specified in the Cultural Resource Clearance Report and Biological Assessment and Evaluation Report.

Before construction surveying begins, required permits will be obtained to conduct engineering surveys on federal and state land or right-of-entry for privately owned land.

## **APPLICABLE LAWS AND EXECUTIVE ORDERS**

Shown below is a partial list of federal laws and executive orders pertaining to project-specific planning and environmental analysis on federal land. While most pertain to all federal land, some of the laws are specific to Arizona. Disclosures and findings required by these laws are contained in Chapter 3 of this EA.

- National Environmental Policy Act of 1969, as amended
- National Historic Preservation Act of 1966, as amended
- Multiple Use – Sustained Yield Act of 1960
- Clean Air Act of 1970, as amended
- Endangered Species Act of 1973
- Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974
- National Forest Management Act of 1976
- Clean Water Act of 1977
- American Indian Religious Freedom Act of 1978
- Archaeological Resource Protection Act of 1980
- Executive Order 11593 (cultural resources)
- Executive Order 12898 (environmental justice)
- Executive Order 12962 (aquatic systems and recreational fisheries)
- Executive Order 13186 (Migratory Bird Treaty Act)

## **FOREST PLAN CONSISTENCY**

Based on the environmental analysis and the decision process, the Forest Service has determined that the project is compatible and consistent with the Forest Plan . Applicable Forest Plan Forest-wide Standards and Guidelines and the rationale for how the project meets the Standards and Guidelines are discussed below.

The Forest Plan Forest-wide Standards and Guidelines, Special-Use Management for Non-recreation Type Activities, provide the following management directions:

*Evaluate requests for transmission corridors based on public need, economics, and environmental impacts of the alternatives. Use existing corridors to capacity with compatible utilities where additions are environmentally and visually acceptable before evaluating new routes.*

*New corridors will avoid wildernesses, RNA's [Research Natural Areas], geological and botanical areas...and the ponderosa pine and mixed conifer vegetation types.*

-Forest Plan, page 79

Constructing the 69kV transmission line adjacent to SR 87 would have diminished the visual quality along the highway corridor. Trenching and burying the transmission line was considered. However, this alternative is cost prohibitive and would have had additional visual impacts to SR 87 viewers, due to the cutting of trees in the right-of-way and the trenching process. To meet the Standards and Guidelines stated above, the transmission line was sited along a parallel drainage, thus maintaining visual quality along the highway.

In moving the transmission line outside the SR 87 viewshed, the Proposed Action locates the transmission line along an existing road corridor that follows the bottom of a drainage through an area of ponderosa pine vegetation. Management guidelines for this vegetation type are found in the Forest Plan Management Area 3 - Ponderosa Pine and Mixed Conifer, Less Than 40 Percent Slopes. The Standards and Guidelines, Pine Stringers Silvicultural Prescriptions state:

*Pine stringers are noncontiguous, narrow communities of predominantly ponderosa pine that extend into the pinyon-juniper woodland below the normal elevational distribution of ponderosa pine. Manage pine stringers to emphasize wildlife habitat needs by maintaining turkey roosts and big game cover except where environmental analysis indicates otherwise.*

-Forest Plan, page 133

The transmission line will be adjacent or parallel to existing forest roads, up to 50 or 60 feet from the road centerline. Pole locations have been selected to utilize existing openings and avoid groups of mature ponderosa pine trees. In effect, the route "braids" its way along the corridor, avoiding the larger pines to the extent possible. Decreasing the number of trees to be harvested and maintaining the integrity of the pine stringers reduces impacts to bald eagles that use the larger ponderosa pine trees in this drainage. This route will not be "pioneered" through undisturbed forest land, but will be following an existing road corridor. Since the transmission line will follow an existing road corridor, it is not considered to be a new route.

The Proposed Action has been evaluated and analyzed in Chapter 3 for effects to threatened and endangered species and meets the Forest Plan Standards and Guidelines.

## **PUBLIC INVOLVEMENT AND SCOPING ISSUES**

The Council on Environmental Quality (CEQ) defines scoping as “an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a Proposed Action” (40 CFR 1501.7). The scoping process is used to invite public participation to help identify issues and obtain public comment at various stages of the environmental analysis process. Although scoping begins early in a project, it is an interactive process that continues until a decision is made. The CNF announced the project’s 30-day scoping and comment period through legal notice publication in the *Arizona Daily Sun* [PR 3]. Information about the project was published in the Forest Service Planning, Appeals, and Litigation System on September 28, 2004. Comments were accepted by mail, electronic mail, through a telephone information line, and through a website maintained by APS [PR 4].

A newsletter was distributed in early June 2004 to agencies and the public describing the project and providing information on the public meetings [PR 5]. The project and public meetings also were announced through display advertisements in the following newspapers [PR 6]:

- *The Winslow Mail*
- *The Reminder*
- *The Scoop*

Two public open houses, one in Winslow and one in Blue Ridge, were conducted in June 2004 to provide information and solicit public comments and suggestions regarding the proposed project. The first public open house meeting took place on June 23, 2004 from 5:00 to 7:00 p.m. at the fire station in Blue Ridge, Arizona. The meeting was attended by 49 individuals [PR 7]. A second public open house meeting was held at the Winslow High School in Winslow, Arizona, on June 24 from 5:00 to 7:00 p.m.; 14 people attended the meeting [PR 8]. Representatives of the Forest Service, APS, and Environmental Planning Group (EPG) were present at both meetings. The purpose and need, description of the proposed project, a projected date for implementation, and the preliminary alternatives to be studied were presented. Details on the environmental studies, schedule, and project background also were presented. Informational handouts and comment forms were available at the public meetings to provide an opportunity for the attendees to review project details and submit comments either at the meeting or by mail.

The official notice and comment period and the scoping process were concurrent. A total of 44 comments were received through comment forms, letters, emails, or phone calls [PR 9, 10]. The public scoping process identified issues and concerns that were analyzed and are addressed in this EA.

### **Scoping Issues and Evaluation Criteria**

Comments from scoping were evaluated to identify significant issues. Significant issues are defined as those directly or indirectly caused by implementing the proposed action, and typically result in the creation of additional alternatives or the implementation of mitigation measures.

Non-significant issues are identified as those: (1) outside the scope of the proposed action; (2) already decided by law, regulation, Forest Plan, or other higher level decision not to be significant; (3) irrelevant to the decision to be made; or (4) conjectural and not supported by scientific or factual evidence. A list of non-significant issues and reasons regarding their categorization as non-significant may be found in the project record.

Significant issues raised by the public and agencies contributed to the analysis of alternatives. In addition, evaluation criteria were developed to measure the potential consequences of the proposed actions as they relate to each issue. A table of public and agency comments, and the disposition of raised issues is included in the project record [PR 11].

The issues raised during scoping and carried forward in the evaluation process for the elements of the proposed action on the CNF included concerns about visual resources, biological resources, heritage resources, and noise. Issues concerning the elements of the proposed action outside of the CNF included concerns about the need for the project, project alternatives, land use, visual resources, and heritage resources. The remainder of this section summarizes the issues used to evaluate potential environmental effects.

## **Issues on Forest Service Land**

### Visual Resources

Comments primarily emphasized concern over impacts of the transmission line to viewers on SR 87, and a few comments expressed concern over visual impacts from the substation site. Criteria that will be applied to evaluate the potential impacts of the proposed action on visual resources include the following:

- consistency with Forest Service visual quality objectives
- effects to views from travel routes and recreation areas
- effects to views from residences

Impacts to viewers on SR 87 are discussed in Chapter 3.

### Biological Resources

The public expressed a general concern over impacts to biological resources, including impacts resulting from the clearing of trees and vegetation. Comments also stated that the project should stay in areas that have previously been impacted by other projects, roads, or grazing. The Forest Service identified issues associated with construction of the proposed project in the vicinity of bald eagle roosting areas. Criteria that will be applied to evaluate the potential impacts of the proposed action on ecosystems, including vegetation and wildlife habitats, include the following:

- effects on native vegetation

- effects on protected plants and animals (Forest sensitive, threatened or endangered species and habitats)

This analysis is further discussed in Chapters 2 and 3.

### Heritage Resources

The Hopi Tribe expressed interest in the identification and avoidance of ancestral sites and traditional cultural places. Section 106 of the National Historic Preservation Act of 1966 requires that the possible effects of federal undertakings on properties included or eligible for the National Register of Historic Places be considered. The evaluation of potential impacts on cultural resources from the proposed action includes direct effects on known cultural sites. This analysis is further discussed in Chapters 2 and 3.

### Noise

Some comments questioned the potential effects of substation noise on adjacent residents in the Mogollon Ranch subdivision. The evaluation of potential impacts on noise resources from the proposed action includes effects on residences within proximity to the project. This analysis is further discussed in Chapters 2 and 3.

## **Issues Outside of Forest Service Land**

### Need for the Project

Winslow area residents questioned the need for the project for a variety of reasons. Concerns generally focus on whether or not the project benefits to Blue Ridge warrant impacts on the Winslow community. Comments also included requests for consideration of alternatives to a new transmission line (i.e., solar, wind generation, underground line, or decentralized power). The evaluation of the purpose and need for the project include the following criteria:

- benefits of the project regarding reliability and load growth
- meets long-term system needs
- whether energy conservation or alternative generating sources could alleviate the need for the project

This analysis is discussed in Chapter 2.

## Project Alternatives

Several comments noted preference for use of an alternative route for the project (Meteor Crater to Chavez Pass Route) as opposed to the proposed alternative, or use of alternative electrical generation methods (solar, wind, etc.). Evaluation criteria included:

- analysis of a range of alternatives to a transmission line
- estimated project costs and effects on customer rates
- whether alternative generating sources, alternative transmission technologies, or alternative transmission line routes would serve the project purpose and need

This analysis is discussed in Chapter 2.

## Land Use

Concern was expressed over the proximity of alternative routes to residential areas in Winslow and potential conflicts with the Winslow-Lindbergh Airport. Concern also was expressed about potential interference with radio and television signals. The evaluation of potential impacts on land use resources from the proposed action includes the following criteria:

- effects on existing and future land uses
- use of existing access and linear corridors

This analysis is discussed in Chapter 2.

## Visual Resources

Comments primarily emphasized concern over impacts of the transmission line to viewers on SR 87. Criteria that will be applied to evaluate the potential impacts of the proposed action on visual resources include the following:

- effects to views from travel routes
- effects to views from residences

Impacts to viewers on SR 87 are discussed in Chapter 3.

## Heritage Resources

The public expressed concern for impacts to cultural sites in the Chavez Pass area. In addition, the Hopi Tribe has expressed interest in the identification and avoidance of ancestral sites and traditional cultural places. Section 106 of the National Historic Preservation Act of 1966 requires that the possible effects of federal undertakings on properties included or eligible for the

National Register of Historic Places be considered. The evaluation of potential impacts on cultural resources from the proposed action includes direct effects on known cultural sites. This analysis is further discussed in Chapters 2 and 3.

### Biological Resources

The public expressed a general concern over impacts to biological resources. Comments also stated that the project should stay in areas that have previously been impacted by other projects, roads, or grazing. Criteria that will be applied to evaluate the potential impacts of the proposed action on ecosystems, including vegetation and wildlife habitats, include the following:

- effects on native vegetation
- effects on plants and animals

This analysis is further discussed in Chapters 2 and 3.

### **PROJECT RECORD AVAILABILITY**

Additional documentation may be found in the project record located at the Mogollon Rim Ranger District Office. These records are available for public review pursuant to the Freedom of Information Act (5 U.S.C. 552). Copies of the EA are available at the Mogollon Rim Ranger District and electronically at the following addresses:

Mogollon Rim Ranger District Office  
HC 31 Box 300  
Happy Jack, Arizona 86024  
(928) 477-2255

Website: <http://www.fs.fed.us/r3/coconino/projects/index.html>

For information contact: Carol Holland at (928) 477-2255 or by email at [cjholland@fs.fed.us](mailto:cjholland@fs.fed.us).