CHAPTER 7.0
CUMULATIVE IMPACTS OF THE PROPOSED PROJECT

7.1 INTRODUCTION

Cumulative impact is the incremental impact on the environment that results from the impact of the proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes them. Cumulative impacts are interdisciplinary, multi-jurisdictional, and usually do not conform to political boundaries. When cumulative significant impacts on the environment are anticipated, CEQA requires that such impacts be described. These potential cumulative impacts are discussed in detail in the following section.

To determine the cumulative effects in the analysis area, past, present, and future actions within the same geographic region were evaluated. These actions predominantly include transmission lines and other utilities and future development projects.

7.2 EXISTING AND PROPOSED ELECTRICAL FACILITIES

7.2.1 Existing Facilities

Numerous existing transmission lines, power distribution lines, and other linear facilities are located throughout the project area. The existing transmission lines of most significance are located in the utility corridor that contains the proposed Devers-Harquahala 500kV transmission line and west of Devers 230kV transmission upgrade route and are listed in Table 7-1 and summarized below:

- DPV1 500kV transmission line (Arizona and California)
- Harquahala-Hassayampa 500kV transmission line (Arizona)

- Various 230kV transmission lines (California)
- Various 115kV transmission lines (California)

7.2.2 Proposed Electrical Facilities

The BLM has designated utility corridors in Arizona and California through its RMP process. The proposed Devers-Harquahala transmission line would cross BLM, state, and private land and be located within a 1-mile-wide BLM-designated utility corridor for approximately 110 miles of the route. The west of Devers portion is a rebuild of existing 230kV transmission lines in an existing utility corridor.

The STEP group, CAISO, as well as various merchant power plant and transmission line representatives, have included in their preliminary screening studies a second 500kV line from Harquahala to Devers.

The DSWTP is a proposed 500kV or 230kV transmission line that would be constructed from the Blythe Power Plant substation west of Blythe, California, to the Devers Substation northwest of Palm Springs within the proposed Devers-Harquahala transmission line corridor.

In addition to the existing DPV1 and the proposed Devers-Harquahala 500kV lines, the proposed APS Palo Verde Hub to TS-5 500kV transmission line would add a third line for approximately 5.5 miles within the eastern portion of the BLM-designated utility corridor, crossing I-10 west of Tonopah. The Palo Verde Subalternate Route addressed in this study, if utilized, would potentially add a fourth 500kV transmission line for a distance of about 9 miles of that corridor from PVNGS to the junction at the existing Harquahala-Hassayampa line, the DPV1 line, and the proposed APS Palo Verde Hub to TS-5 500kV transmission line.

SCE also is planning to construct the Oak Valley System Project in northern Riverside County, which would include a 220/115/12kV substation and four 115kV transmission lines. A specific

location for the substation has not been identified, although the substation site and transmission lines would be located in the vicinity of SCE's existing Devers-Vista utility corridor between San Timoteo Road, in Calimesa, and a point about 1.7 miles east of Highland Springs Road in Beaumont. The project would be needed by 2008.

7.2.3 Summary of Cumulative Impacts

The discussion of potential cumulative impacts of the electrical facility projects by resource category is provided below.

7.2.3.1 Land Use

Most cumulative impacts to land uses are not expected to be significant with the addition of DPV2. Small areas of rangeland used for grazing and forage and agricultural land would be permanently removed from production by tower foundations and spur roads, where necessary. These impacts would accumulate with construction of a third 500kV transmission line west of Blythe, California (i.e., the proposed DSWTP), although the total area lost from production would be small in the context of the region. The Devers-Harquahala 500kV transmission line would be installed within the designated 1-mile-wide utility corridor on lands administrated by BLM, thus consolidating transmission lines in a planned location, which is consistent with the RMP.

7.2.3.2 Socioeconomics

Cumulative impacts to socioeconomics are generally only a concern if they would overextend public services and accommodations in the project area. Construction and operation of the proposed Devers-Harquahala transmission line would be a beneficial cumulative impact to the

southern California region, including increased availability of lower cost electricity. Beneficial cumulative impacts also include revenues realized due to construction activities, and potential property tax revenues received by the affected counties in Arizona and California.

7.2.3.3 Geology, Soils, Hydrology, and Minerals

It is anticipated that the cumulative effects on earth resources would not be measurably different than the additive effects of the proposed DPV2 project. The potential for soil erosion, stream-bank degradation, and sedimentation in water bodies, dependent on the mitigation implemented, could be increased with the construction of the DSWTP in some areas. Ground disturbance would be, in general, incrementally less for the Devers-Harquahala transmission line or a third line. Ground disturbance is generally low for DPV2 since the majority of the proposed route parallels an existing transmission line(s) and associated access roads. The cumulative effects of two or three transmission lines would likely be somewhat more than any single project.

7.2.3.4 Air Quality

It is anticipated that the power transmitted over the proposed DPV2 would come from existing capacity generated in the PVNGS region. A potential indirect cumulative impact associated with the transmission line is increasing emissions from natural gas fueled power generation, such as those facilities listed in Section 7.3. The change could be additive or may decrease in Arizona or California, depending on the location of the sources and direction of power flow.

Cumulative air quality impacts also would result from construction activities for the proposed electrical facilities identified above. The incremental effects of vehicular emissions would be expected to increase, generally according to the number of transmission line miles constructed during the same period, but it is unlikely that more than one major construction project would take place simultaneously in the same location. If concurrent construction of more than one

project was to occur, the amount of airborne particulates resulting from construction vehicle use on unpaved roads could be reduced where existing access or spur roads are used for multiple projects within the same corridors. In most cases, mitigation measures to control emissions would be effective in reducing emissions, and cumulative impacts would be temporary and not significant.

7.2.3.5 Traffic and Transportation

Cumulative impacts to traffic and transportation are not anticipated to be permanent, but rather temporary, occurring during construction. If the construction of both the DSWTP and DPV2 projects, for example, overlap or occur in the same time frame, the potential for traffic impacts would increase, but would result in less than significant impacts.

7.2.3.6 Biology

Cumulative biological impacts would be generally additive, and usually be directly proportional to the amount of ground disturbed. Cumulative effects also depend, to some extent, on whether or not DPV2 construction activities are concurrent or overlapping in a given area. If construction is occurring concurrently, a higher volume of traffic may result and possibly greater amounts of ground disturbance (erosion, etc.) would occur. Overlapping activity, on the other hand, may create disturbance to wildlife for a longer period of time, resulting in prolonged or permanent displacement of wildlife from crucial habitats. Where designated corridors are used, access roads may serve more than one line and would therefore minimize ground disturbance and the amount of increased access in some areas.

A third line in the proposed Devers-Harquahala corridor would likely produce similar impacts. Cumulative impacts associated with the existing DPV1, DPV2, and either the DSWTP or Palo

Verde Hub to TS-5 500kV lines in one corridor would likely produce impacts that are of a slightly higher degree and possibly longer duration, but would be less than significant.

7.2.3.7 Noise

With the addition of the Devers-Harquahala line, cumulative impacts associated with corona-generated audible noise would be additive, but is expected to be less than double the existing levels of noise caused by operation of the existing DPV1 line due to the use of polymer insulators on the proposed Devers-Harquahala line. The increased noise level at the edge of the right-of-way may be discernible or audible during wet-weather conditions, although line noise would most often be masked by naturally occurring sounds at locations beyond the right-of-way, and would not be significant.

7.2.3.8 Visual

Cumulative visual impacts would increase with effects to views from highways, residences, recreational areas, and on natural scenic quality. The first transmission line built in a natural setting usually would cause the most noticeable incremental change because of the contrast of form, line, color, and texture to the surroundings. Each successive change, when added in an existing corridor, would be less noticeable than the first. However, the new combination of all the changes (e.g., form, line, color, and texture) is more evident. With the addition of a third or fourth transmission line, such as the proposed DSWTP or Palo Verde Hub to TS-5, the resulting multi-line corridor would be more visible than two transmission lines at greater distances because of the cumulative contrast with the natural landscape. Where existing access could be utilized for both the proposed Devers-Harquahala line and the DSWTP, it would avoid exposing lighter colored surface and vegetative removal. In areas where new access and vegetative removal are required, mitigation that would be effective in reducing visual impacts would include the reclamation of areas disturbed by construction-related activities. Therefore, the effect

of the proposed Devers-Harquahala transmission line would contribute a small increment of visual impact that would be less than significant.

Cumulative visual impacts that would be likely to result from the west of Devers 230kV transmission upgrade would be beneficial. Because approximately two structures would be removed for every new structure installed in the existing utility corridor, and the new double-circuit towers would be compatible with the existing 230kV double-circuit towers, an overall reduction in visual contrast would result in the majority of locations.

7.2.3.9 Cultural Resources

Cumulative impacts to cultural resources could result over time from repeated incremental damage caused by motorized vehicles. Indirect impacts on cultural resources can result from degrading the setting of a significant cultural feature, and incidental destruction of cultural sites or traditional cultural properties by motorized vehicles, due to new access roads. However, the proposed DPV2 project would not require a substantial level of new access, therefore reducing cumulative impacts to cultural resources. The presence of multiple transmission lines would not likely contribute measurably to this type of a cumulative effect more so than a new single transmission line. Therefore, impacts to cultural resources would be less than significant.

7.2.4 Conclusions

Based on this analysis, the incremental impact of the proposed action would be minimal when added to other past, present, and reasonably foreseeable future actions. Construction and operation of the proposed Devers-Harquahala transmission line and west of Devers upgrade would not cause significant cumulative impacts on the environment.

7.3 FUTURE DEVELOPMENT

The proposed DPV2 project crosses primarily rural, undeveloped areas within four counties in California and Arizona. As addressed in the socioeconomics, population, and housing sections of Chapter 4 (4.1.3 and 4.2.3), portions of the route are experiencing substantial growth, while others are not. Population growth is a good indicator of the level of current and planned land development, which contributes to cumulative impact.

In Arizona's Maricopa County, for example, the projected population increase from 2002 to 2025 is 50 percent. (It is noted that the proposed route is located in the far western portion of a very large county that contains the rapidly growing Phoenix metropolitan area.) Growth in La Paz County, Arizona, is similar with projections of 51 percent population growth in the same time frame, though the county is substantially less populated.

The two towns in Arizona closest to the proposed route are Buckeye, located approximately 25 miles to the east of the Harquahala Switchyard, and Quartzsite farther to the west and approximately 8 miles to the north of the proposed Devers-Harquahala line. Buckeye is a rapidly growing town to the west of Phoenix projected to more than triple in population between 2000 and 2010. Also, Buckeye has continued to annex land to the west. The population of Quartzsite is projected to increase by 9 percent from 2000 to 2010.

The third county crossed by the proposed Devers-Harquahala transmission line is Riverside, California, which has a projected population increase of 71 percent from 2002 to 2020. There are 10 cities/towns in Riverside County close to the proposed Devers-Harquahala and west of Devers corridors. Their projected population increases for 2002 to 2020 range from 15 to 35 percent. Population growth in the fourth county, San Bernardino County, California, was 20 percent between 1990 and 2000, much lower than the 56 percent growth in the previous decade.

General plans for the various counties and municipalities within or near the project area are summarized in Tables 4-4, 4-10, and 4-42.

Table 7-1 describes activities (existing and proposed, or future) that may cumulatively affect resources of concern for the project.

TABLE 7-1
ACTIVITIES LIST - CUMULATIVE EFFECTS

Activities	Location/Description	Status
Proposed Action – DPV2 Transmission Project		
Devers-Harquahala 500kV Transmission Line	The 500kV transmission line would connect at the Harquahala Switchyard located 60 miles west of Phoenix, Arizona, and continue to the Devers Substation, located 10 miles northwest of Palm Springs, California, a distance of approximately 230 miles.	Future
West of Devers 230kV Transmission Line	The upgrade of a 230kV line from single to double circuit from the Devers to Vista substations, with an interconnection at the San Bernardino Generating Station Switchyard.	Future
Utilities/Public Services		
Arizona-California		
DPV1 Transmission Line	A 500kV line that connects at the PVNGS Switchyard 60 miles west of Phoenix, Arizona, and terminates at the Devers immediately north of the Palm Springs, California, city limits.	Existing
Southwest Powerlink Transmission Line	A 500kV line that begins at PVNGS, connects to the North Gila Substation in Yuma and Imperial Valley Substation near El Centro, California, and terminates at the Miguel Substation in San Diego, California.	Existing
I-10	This major interstate highway lies in an east-west direction in both Arizona and California.	Existing
Pipelines	Numerous pipelines occur along and near the proposed corridor.	Existing
Arizona		
Harquahala Generating Station and 500kV Transmission Line	The Harquahala Station is located approximately 17 miles northwest of the PVNGS. A 500kV transmission line connects the Harquahala Power Plant and the Hassayampa Switchyard.	Existing
Hassayampa 500kV Switchyard	Located south of the PVNGS. Numerous 500kV lines interconnect at this switchyard.	Existing
PVNGS Switchyard	Located near PVNGS with numerous 500kV lines interconnecting at this switchyard.	Existing
PVNGS-Kyrene 500kV Transmission Line	PVNGS-Kyrene 500kV transmission line originates at the PVNGS Switchyard, ending at the Kyrene Substation in Tempe.	Existing
Palo Verde Hub to TS-5 500kV Transmission Line (APS)	Proposed 500kV transmission line from Hassayampa Switchyard, or other Palo Verde Hub switchyard, to a planned substation northeast along the CAP Canal.	Future
Planned PVNGS to Saguaro 500kV Transmission Line	The 500kV transmission line would start at PVNGS and terminate at the Saguaro Power Plant, paralleling the existing PVNGS-Kyrene 500kV line.	Future
Proposed Sonora-Arizona Interconnection 345kV(two) transmission lines	The two 345kV transmission lines would start at either PVNGS or Hassayampa Switchyard and terminate in Sonora, Mexico.	Future

TABLE 7-1 ACTIVITIES LIST - CUMULATIVE EFFECTS		
Activities	**Location/Description**	**Status**
Planned Hassayampa to Jojoba 500kV Transmission Line	The 500kV transmission line would connect the Hasssayampa Switchyard near PVNGS to the Jojoba Switchyard south of Buckeye, Arizona, a distance of approximately 20 miles.	Future
Southwest Valley Transmission Line	A 500kV transmission line that originates at the PVNGS Switchyard and terminates at the Rudd Substation in Avondale, Arizona.	Present
Proposed Hassayampa to Pinal West 500kV Transmission Line	The Hassayampa to Pinal West 500kV transmission line is proposed to connect at the Hassayampa Switchyard south of PVNGS and terminate at a proposed new substation near Mobile, Arizona.	Future
PVNGS to West Wing	A 500kV transmission line from PVNGS to the West Wing Substation.	Existing
Pipelines	El Paso Natural Gas pipelines connect to the various gas-fired generation facilities in the region around PVNGS as well as Haraquahala.	Existing
Palo Verde Nuclear Generating Station	Located in the unincorporated Arlington Valley, Arizona. Numerous 500kV lines interconnect at the PVNGS Switchyard.	Existing
Mesquite Power Plant and 500kV Transmission Line	The Mesquite Power Plant is located south of PVNGS and west of the Hassayampa Switchyard. The transmission line starts at the plant and connects at the Hassayampa Switchyard.	Existing
Redhawk Power Plant and 500kV Transmission Line	The Redhawk Power Plant is located south of PVNGS and southeast of the Hassayampa Switchyard. The transmission line starts at the plant and terminates at the Hassayampa Switchyard.	Existing
La Paz Power Plant	The proposed La Paz Power Plant would be located in La Paz County approximately 70 miles west of PVNGS.	Future
Arlington Power Plant	Arlington Power Plant is located south of PVNGS and west of the Mesquite Power Plant. A 500kV transmission line connects the Arlington Power Plant and the Hassayampa Switchyard.	Existing
I-10 and Highway 95	I-10 is both paralleled and crossed by the proposed project in Arizona. Highway 95 is crossed by the proposed project	Existing
Canals	The CAP Canal and various other canals are located in the project area.	Existing
California		
Proposed Desert Southwest 500/230kV Transmission Project	The DSWTP is a proposed 500/230kV transmission line project from the Blythe Power Plant Substation west of Blythe, California, to the Devers northwest of Palm Springs.	Future
North Baja Pipeline Project	A gas pipeline from the California-Mexico border to the Blythe, California/Ehrenberg, Arizona, area for a distance of approximately 80 miles.	Future
Blythe Energy 1 Generating Station	The Blythe Power Plant is located approximately 4.5 miles west of Blythe, California.	Existing
Blythe Energy 2 Generating Station	The Blythe Energy 2 would be a proposed 520 MW plant.	Future
Wildflower-Indigo Power Plant	The Wildflower-Indigo Power Plant is located north of Palm Springs and the existing corridor.	Existing
Ocotillo Peaker Power Plant	The proposed Ocotillo Peaker Power Plant of 450 MW is located north of Palm Springs and the existing corridor.	Future
West of Devers		
Inland Empire Energy Center	The Inland Empire Energy Center is a proposed 670 MW plant located south of the Vista Substation.	Future

TABLE 7-1 ACTIVITIES LIST - CUMULATIVE EFFECTS		
Activities	**Location/Description**	**Status**
Mountainview Power Project	The Mountainview Power Project (1,056 MW) is an expansion project approved by the CEC in 2001, located in San Bernardino County, now under construction.	Future
Oak Valley System Project	SCE is proposing a new 230/115/12kV substation and associated 115kV transmission lines in northern Riverside County.	Future
Residential		
Rural and suburban residential development	Throughout project area.	Existing, Future
Agriculture and Grazing		
Farming	Cultivated private land throughout the project area.	Existing
Grazing	Throughout project area.	Existing
Parks, Preservation, Recreation		
Arizona		
KOFA NWR	The KOFA NWR is crossed by the proposed Devers-Harquahala segment and is located east of U.S. Highway 95 between the town of Quartzsite and the city of Yuma.	Existing
California		
Coachella Valley National Wildlife Refuge and Fringe-toed Lizard Preserve	The USFWS and The Nature Conservancy preserve is crossed by the proposed Devers-Harquahala segment and located southeast of the Devers.	Existing
Chuckwalla Desert Wildlife Management Area (DWMA) and Desert Tortoise Critical Habitat	The DWMA and Critical Habitat is crossed by the proposed Devers-Harquahala segment south of I-10 and east of Devers.	Existing