3.2 Visual Resources

This section contains a description of the environmental setting, regulatory setting, and potential impacts associated with the construction and operation of the proposed project and alternatives with respect to visual resources.

3.2.1 Environmental Setting

The existing environmental setting for visual resources is described in terms of the existing landscape and potential viewers. The existing environmental setting is described broadly to provide an overall context for the region in which the proposed project would be located. Representative views of the proposed locations for project components and the proposed routes for the transmission and telecommunications lines are included to support the textual description of the existing landscape; the locations from which these photos were taken are indicated in Figure 3.2-1.

Potential viewers are described in terms of the number of viewers, duration of views, distance between the viewer and the proposed project, and viewer expectation. Viewer groups include motorists along Interstate 15, Nipton Road, and Highway 95; recreational users in the area including OHV enthusiasts, kite surfers, users of the Primm Valley Golf Course, and hunters; residents of the Desert Oasis Apartment Complex in Primm, Nevada; visitors to Primm; residents of the communities of Nipton and Mountain Pass, California; and dispersed recreationists in Wilderness Areas. Viewer expectation considers viewer activity, adjacent land uses, special management areas in the vicinity, and any federal, state, or local regulations that protect visual resources in the area (BLM Manual H-8410-1). Figure 3.4-6, in Section 3.4, "Biological Resources", shows the specially designated areas that are considered in this section's visual resources analysis. Public concern expressed about the visual impact of the proposed project is also taken into account to describe the sensitivity of viewers.

Distance zones used to discuss views are consistent with BLM standard definitions. These are foreground (0 to 1 mile), middleground (1 to 3 miles), background (3 to 5 miles), and seldom-seen views (greater than 5 miles) (BLM Manual H-8410-1). Generally, increased visual contrast within foreground distances would be more noticeable to viewers than increased visual contrast within background distances.

Based on the potential viewer groups and sensitivity of those groups, distance zones, landscape features, and consultation with the CPUC and the BLM, KOPs were selected. These KOPs represent both sensitive and typical views in the proposed project area and form the bases of the visual analysis. The locations of the KOPs are shown on Figure 3.2-1. Contrast rating forms were completed for each of the KOPs following site visits in August of 2008; the contrast rating forms are included in Appendix C. The following KOPs were used for this analysis:

- KOP 1: View of the Transmission Corridor Looking Northeast toward the McCullough Mountain Range
- KOP 2: View from the South McCullough Wilderness Area
- KOP 3: View from Interstate 15 near Jean, Nevada
- KOP 4: View from the Desert Oasis Apartments in Primm, Nevada
- KOP 5: View from Ivanpah Dry Lake, East of Interstate 15
- KOP 6: View from Interstate 15 near Primm, Nevada
- KOP 7: View from Highway 95 in the Eldorado Valley
- KOP 8: View from Highway 164 Overpass in the Ivanpah Valley

The EITP would be located in the Basin and Range province, which includes the southwestern United States and northwestern Mexico.[1] This geographic region is characterized by generally north-trending high mountain ranges and intervening dry, alluvium-filled, flat-floored valleys (NASA 1986). The proposed project extends from the Ivanpah Valley in San Bernardino, California, to the Eldorado Valley in Clark County, Nevada (Figure 3.2-1). The physical setting of the proposed project and viewer groups would vary for each proposed project component and at various locations along the transmission and telecommunication routes as described below.

3.2.1.1 Transmission Line

The proposed transmission line would replace a segment of the existing single-circuit 115-kV Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass transmission line. The transmission line would run northeast from the proposed Ivanpah Substation and would proceed across Ivanpah Valley, across Ivanpah Dry Lake, through the town of Primm, Nevada, southeast of Roach Dry Lake, north of the Lucy Gray Mountains, and across the McCullough Mountains to the existing Eldorado Substation. Ivanpah Dry Lake and Roach Dry Lake are flat, unvegetated, and light in color compared to the surrounding terrain. The town of Primm consists of numerous casinos, commercial establishments, and some housing units. The Lucy Gray, Clark, and McCullough mountain ranges are jagged, visually prominent geologic formations that form the backdrop of views from the valley floor.

Figure 3.2-2 depicts the town of Primm, the Ivanpah Valley, the Lucy Gray Mountains, and the existing transmission line route. This view is typical of views surrounding the town of Primm. The view is characterized by primarily flat terrain with diagonally inclined low hills at the edge of the view and a rough, jagged mountain range in the background. The vegetation consists primarily of medium to tall native brush with low-lying ground cover. Dark brown distribution poles and gray lattice steel towers (LSTs) are present in this view, as is the town of Primm.

Motorists driving on Interstate 15 (I-15) in California and Nevada have views of the proposed project area. The proposed project area is also visible to recreational users of the dry lakes in the region. The Primm Valley Golf Club is located approximately 0.5 miles southeast of the proposed transmission line route. The existing recreational setting and potential impacts to recreational users are discussed in detail in Chapter 3.12, “Recreation.”

Urban uses adjacent to the transmission line include casinos in Primm, Nevada; the Desert Oasis Apartment Complex in Primm, Nevada; and the Bighorn Electric Generating System east of I-15. Additionally, the transmission line would be visible from the railroad tracks that parallel I-15.

3.2.1.2 Ivanpah and Eldorado Substations

The proposed Ivanpah Substation would be located in the Ivanpah Valley, a primarily flat area with a vegetative cover of even, low-lying shrubs broken by unvegetated dry lakes. Figure 3.2-3 shows the proposed Ivanpah Substation location as seen from the Primm Valley Golf Club. The terrain in this view is generally horizontal with topographic variations and a rock outcrop visible in the middleground; the Clark Mountain Range is visible in the background. The vegetation in this view is predominantly low shrubs and ground cover, with a random distribution of medium to -tall bushes. In the middleground of the view, H-frame transmission towers and LSTs are visible; no structures are visible in the foreground or background.

[1] The Basin and Range province is a physiographic province or “surface unit,” a naturally defined region with homogeneous landforms and landscapes.

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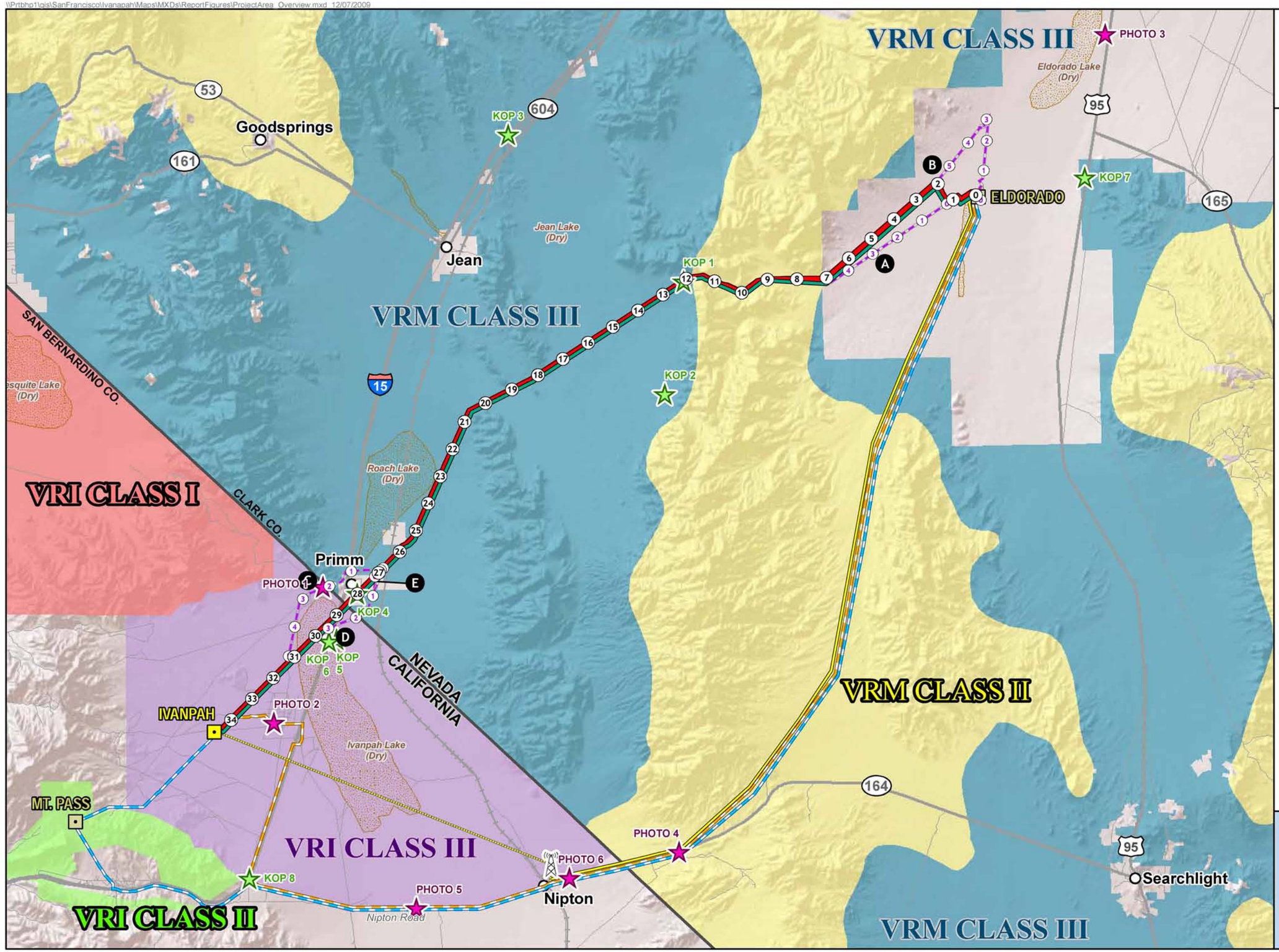
Figure 3.2-1
Eldorado-Ivanpah Transmission Project
Visual VRM and VRI Classes



PROPOSED PROJECT
- Transmission L.ine
- Telecommunications Line
- Redundant Telecommunications Line
- Microwave

ALTERNATIVES
- Transmission Line Alternatives
- Redundant Telecommunications Line - Mountain Pass
- Redundant Telecommunications Line - Golf Course
- Proposed Microwave Tower
- Proposed Substation
- Existing Substation
- City
- Road
- BLM Land
- NPS
- Proposed Southern Nevada Supplemental Airport

Visual Resource Management
- Class II
- Class III

Visual Resource Inventory
- Class I
- Class II
- Class III
- KOP Location
- Photo Location

0 1 2 3 4 5
Miles

March 2010

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Reference: Fig. 4.1-10, Character Photo 1, Eldorado – Ivanpah Transmission Project PEA, Southern California Edison, January 2009

Character Photo 1 - View from a dirt road west of the city of Primm looking southeast toward the existing and proposed transmission line

Figure 3.2-2
Character Photo 1

Fig 3.15-2_Character Photo 1 (adapted from PDF) 12/07/2009

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Reference: Fig. 4.1-12, Character Photo 2, Eldorado – Ivanpah Transmission Project PEA, Southern California Edison, January 2009

Character Photo 2 - View from the Primm Valley Golf Club looking west toward the site of the proposed Ivanpah Substation

Figure 3.2-3

Character Photo 2

Fig 3.15-3_Character Photo 2 (adapted from PDF) 12/07/2009

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The Eldorado Substation is located in the Eldorado Valley, east of the McCullough Mountain Range. The Eldorado Substation is approximately 1.5 miles east of the existing Solar One facility. Figure 3.2-4 shows the existing Eldorado Substation from the Eldorado Dry Lake west of Highway 95. The view shows the predominantly flat dry lake and Eldorado Valley with the McCullough Mountain Range visible in the background. The dry lake primarily has a continuous firmly packed fractured texture; no vegetation is visible from this location. The existing Eldorado Substation and nearby solar generation facility appear indistinct from this location.

Motorists driving on I-15 in California have views of the proposed project area near the proposed location of the Ivanpah Substation. The proposed substation would be located approximately 2 miles east of the Primm Valley Golf Club. The town of Primm, Nevada, is approximately 6 miles northeast of the proposed substation site. The nearest topographical feature to the proposed Ivanpah Substation is a metamorphic outcrop west of I-15.

The existing Eldorado Substation is approximately 3.5 miles west of Highway 95 and approximately 10 miles southwest of Boulder City, Nevada.

3.2.1.3 Telecommunications Route

The proposed telecommunications line would run southwest on the existing 500-kV Eldorado–Lugo Transmission Line from the Eldorado Substation between the McCullough and Highland mountain ranges to Nipton Road, near the California-Nevada border. The terrain in this location is rough and rolling with varying changes in elevation. The vegetation visible in this view consists primarily of low-lying native shrubs and randomly spaced Joshua trees. The existing 500-kV transmission line is strung on gray angular LSTs and H-frame LSTs (Figure 3.2-5). The 500-kV transmission line is strung on the larger of the two structures visible in this photograph; at this location, the line is strung on LSTs.

The telecommunications line would then proceed underground along the northern edge of Nipton Road (Figure 3.2-6); Nipton Road forms the northern boundary of the Mojave National Preserve (MNP). A distribution line strung on wooden poles currently runs along the southern edge of Nipton Road. The town of Nipton, California is visible in the background of Figure 3.2-6.

Near the town of Nipton on the northern boundary of the MNP, a microwave tower would be constructed. Figure 3.2-7 shows the proposed microwave tower location; the town of Nipton is visible in the foreground-middleground distance zone in this photograph. The microwave tower would transmit and receive communication from a second microwave tower that would be installed within the proposed Ivanpah Substation. The terrain in this view is gently sloping away from the viewer with the predominantly flat dry lake and the New York Mountain Range visible in the background. The vegetation visible in this view consists of low-lying native shrubs with manicured vegetation visible in the middleground near the town of Nipton, California. The texture of the foreground view is rough with randomly spaced vegetation; the texture of background views includes the flat, smooth dry lake and the jagged mountain range.

The existing 500-kV Eldorado–Lugo transmission line is visible to dispersed recreational users in the South McCullough Wilderness Area, within Eldorado Valley, and from the Wee Thump Joshua Tree Wilderness Area. Motorists along Nipton Road/Highway 164 also have views of a segment of the Eldorado-Lugo transmission line near the California/Nevada border. Motorists along Nipton Road, recreational users of the MNP, and residents in the town of Nipton, have views of the proposed project area where the telecommunications route would be undergrounded and where the microwave tower would be located.

3.2.1.4 Transmission Line Minor Route Variations

There are five minor route variations to the proposed transmission line route (Figure 3.2-1). Alternative A would bypass a segment of the proposed project route between Milepost (MP) 1 and MP 7 near the Eldorado Substation. Alternative B would bypass a segment of the proposed route that runs north and south near MP 2, in Boulder City,

Nevada. Alternative C would bypass the town of Primm, Nevada, and the Ivanpah Dry Lake by rerouting the transmission line north of Primm. Alternative D and E would reduce impacts to the Ivanpah Dry Lake by rerouting the line south of Primm, matching the footprint of an existing transmission line.

Figure 3.2-4 shows the existing visual setting where Alternatives A and B would be located, as described above in Section 3.2.1.2, "Ivanpah and Eldorado Substations." Viewer groups for Alternatives A and B include motorists along Highway 95, dispersed recreationists in the South McCullough Wilderness Area, and residents of Boulder City.

Figure 3.2-2 shows the existing visual setting where Alternatives C, D, and E would be located, as described above in Section 3.2.1.1, "Transmission Line." Viewer groups for Alternatives C, D, and E include motorists along I-15, recreational users of the Ivanpah Dry Lake, visitors and workers at the casinos in Primm, residents of the Desert Oasis Apartment Complex located in Primm, and workers at the Bighorn Electric Generating System.

3.2.1.5 Telecommunications Route Alternatives

There are two alternatives to the proposed telecommunications system (Figure 3.2-1). Neither alternative would include the microwave tower component of the proposed telecommunications system; rather, both alternatives would continue underground past Nipton, California, along the northern edge of Nipton Road for approximately 10 miles. The Golf Course Alternative would then proceed northwest on existing 33-kV distribution poles, with a short segment installed in underground ducts under the Primm Valley Golf Course. The Mountain Pass Alternative would continue underground for an additional mile and would then proceed west and northeast on existing 33-kV distribution lines through the town of Mountain Pass and near the existing Mountain Pass Substation. Both telecommunication alternatives would ultimately connect with the proposed Ivanpah Substation.

Figure 3.2-3 shows the existing visual setting where the Golf Course Alternative and the Mountain Pass Alternative would be located, as described above in Section 3.2.1.2. Viewer groups for the telecommunication alternatives include motorists along Nipton Road, motorists along I-15, workers and golfers at the Primm Valley Golf Club, residents of the town of Mountain Pass, and recreational users of the Ivanpah Dry Lake.

3.2.1.6 Key Observation Points

Select KOPs represent typical views of proposed project components and views from sensitive locations. Sensitive locations include areas with protected visual resources or scenic vistas or areas with a high degree of visual sensitivity such as residences or recreational areas. The sensitivity of a location takes into account the type of users, the number of users or frequency of use, public concern for maintaining visual resources, any scenic designations or management plans designed to protect visual resources, and adjacent land uses (BLM Manual H-8410-1). The process for selecting these KOPs is described in more detail in Section 3.2.3.3, "Methodology." These viewpoints are used to help establish the baseline for existing visual resources, and are later used to assess the proposed project's potential to change the visible landscape based on prepared simulations as described in Section 3.2.3.3, "Methodology." KOPs are characterized by describing the form, line, color, and texture of landforms, waterbodies, vegetation, and structures visible in the viewshed. The location of each KOP with respect to the proposed project area is shown in Figure 3.2-1.

Reference: Fig. 4.1-11, Character Photo 2, Eldorado – Ivanpah Transmission Project PEA, Southern California Edison, January 2009

Character Photo 2 - View from the Dry Lake west of Highway 95, looking southwest toward the Eldorado Substation

Figure 3.2-4

Character Photo 3

Fig 3.15-4_Character Photo 3 (adapted from PDF) 12/07/2009

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Reference: Fig. 4.1-13, Character Photo 4, Eldorado – Ivanpah Transmission Project PEA, Southern California Edison, January 2009

Character Photo 4 - View from Highway 164 looking northeast toward a portion of the proposed telecommunication system

Figure 3.2-5

Character Photo 4

Fig 3.15-5_Character Photo 4 (adapted from PDF) 12/07/2009

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Reference: Fig. 4.1-14, Character Photo 5, Eldorado – Ivanpah Transmission Project PEA, Southern California Edison, January 2009

Character Photo 5 - View from Highway 164 looking east toward Nipton, California, adjacent to a portion of the proposed telecommunication system

Figure 3.2-6

Character Photo 5

Fig 3.15-6_Character Photo 5 (adapted from PDF) 12/10/2009

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Character Photo 6 - View of the proposed microwave tower location

Figure 3.2-7

Character Photo 6

Fig 3.15-7_Character Photo 6 (adapted from PDF) 12/10/2009

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KOP 1: View of the Transmission Corridor

KOP 1 (Figure 3.2-8) is a view of the existing Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line from within the transmission corridor. This view is oriented northeast into the McCullough Mountain Range and is representative of what would be seen from the McCullough Mountain Range. Typical recreational activities in this area include OHV use and hiking. This KOP depicts foreground and middleground views of the existing 115-kV transmission line.

KOP 1 shows the jagged and rocky terrain of the McCullough Mountain Range. The varying topography of the foreground creates an uneven horizon line that transitions from a nearly horizontal to a vertically inclining line, and then undulates to the eroded base of the mountains visible in the foreground and middleground; the background distance zone is not visible in this view due to topography. Light golden and tan soil, including randomly spaced tan, light brown, and black rock, is visible, giving the foreground a rocky and granular texture. Predominant colors of light golden to golden tan and slate gray with visible striations of warm pink and purple can be seen in the mountains located in the middleground. The land in the middleground has a smooth to granular texture; the mountains have a discontinuous, rough appearance. No water is visible in this view.

The vegetation within this view consists of irregularly rounded shrubs and ground cover with interspersed grasses, visible in the foreground and middleground. The shrubs and grasses are medium amber, gray-brown, and very light to medium sage green in color, with shrubs having a visually pointed texture and grasses a visually softer texture. Randomly spaced, irregularly shaped Joshua trees are also present in this view. The bristly-textured Joshua trees are an overall light brown and light sage green. The vegetation in this view creates a generally weak horizontal line, appearing dense in the foreground and scattered as the foreground transitions to the middleground.

The existing Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line is present in this view, as well as other transmission lines not part of the proposed project. The portion of the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line visible in this view consists of gray H-frame LSTs and associated conductors. Other overlapping medium gray LSTs and rust brown tubular steel poles (TSPs) are also present in the view.

KOP 2: View from the South McCullough Wilderness

KOP 2 (Figure 3.2-9) is a view from west of the South McCullough Wilderness looking northwest towards the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line route, the I-15, and the Spring Mountain Range. This view is representative of what would be seen from a location near the South McCullough Wilderness. Typical recreational activities in this area include OHV use and hiking, although there are no nearby trailheads or named trails in this area. This KOP depicts middleground views of the existing 115-kV transmission line.

KOP 2 shows the wide-open Ivanpah Valley and Jean Lake, framed by low mounded hills and low-lying incised mountains. While the foreground and middleground of the view are primarily horizontal, topographic variation is present in the down-sloping foreground and jagged and domed mountains in background views. The smooth, horizontal line of the valley transitions to a jagged horizontal mountain skyline. The exposed soil in the view ranges from golden tan on the valley floor to white-tan on Jean Lake; the hills and mountains range from dark brown to gray-brown, with a purple cast visible in the far mountains. Primarily sandy and rocky land is visible in the foreground, giving the valley floor a visually smooth and indistinctive texture, contrasting with the surrounding mountains and hills. No water is visible in this view.

Visually bristly, pointy shrubs and ground cover interspersed with soft mounded grasses comprise the typical vegetation visible in this view. The vegetation creates a generally weak horizontal line with colors including tan-brown, yellow-green, dark brown, and dark sage green.

The Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line is present in this view, although not distinguishable at this distance, as well as other transmission lines not part of the proposed project. The portion of the Eldorado-–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line present consists of gray H-frame LSTs, T-frame LSTs, and associated conductors. Golden tan dirt roads are also visible in this view. These diagonal and horizontal lines cross the wide open space of the Ivanpah Valley floor but do not detract from the openness of the view.

KOP 3: View from Interstate 15 near Jean, Nevada

KOP 3 (Figure 3.2-10) is a view from I-15 looking southeast toward the Union Pacific Railroad (UPRR), the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line route, Ivanpah Valley, Jean Lake, and the McCullough Mountain Range. This view is representative of what a southbound motorist on I-15 would see. The length of the view would be of short duration, a result of the speed at which a vehicle would generally be traveling. This KOP depicts seldom seen views of the existing 115-kV transmission line.

KOP 3 shows the expansive view afforded by Ivanpah Valley and Jean Lake with the McCullough Mountain Range in the background. The foreground and middleground of the view is primarily horizontal, with some topographic variation present in the foreground as it slopes toward the middleground. The horizontal line of the middleground inclines diagonally at the base of the dark slate-brown low hills located in the background of the view, transitioning into the jagged horizontal skyline of the McCullough Mountain Range. The exposed soil in the foreground is light golden tan and has a sandy to rocky texture. The middleground colors range from the golden tan of the valley floor to the light tan of the dry lake bed, appearing smooth. The smooth valley floor transitions into the visually varied mountain slopes, which are dark brown; a purple cast is present in the far mountains. No water is visible in this view.

Vegetation is visible in the foreground of this view; vegetation present in the middleground and background is indistinguishable. Irregularly rounded red-brown, yellow-green, dark brown, and dark sage-green shrubs and ground cover create a generally weak horizontal line in the foreground. These shrubs and ground cover are randomly spaced and have an overall visually bristly, pointed texture.

Although not distinguishable at this distance, the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line is present in the background of this view, as are as other transmission lines not part of the proposed project. The portion of the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line present consists of gray H-frame LSTs, T-frame LSTs, and associated conductors. Golden tan dirt roads are present and barely visible in the background of this view. The UPRR, evenly spaced dark brown distribution poles, and a low-lying brown fence are clearly visible in the foreground of this view. These diagonal and horizontal lines cross the wide open space of the Ivanpah Valley floor but do not detract from the openness of the view.

KOP 4: View from Desert Oasis Apartments in Primm, Nevada

KOP 4 (Figure 3.2-11) is a view from the Desert Oasis Apartment Complex in Primm. The photograph was taken looking southwest toward the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line route and the Clark Mountain Range. Views from this location would occur frequently for residents leaving from or returning to their homes. Residents of the Desert Oasis Apartment Complex include employees of the Primm Valley casinos and seasonal residents working on construction projects in the vicinity of Primm, Nevada. This KOP depicts foreground views of the existing 115-kV transmission line.

a) View of the Eldorado-Baker-Coolwater-Dunn Siding-Mountain Pass 115-kV transmission line looking northeast toward the McCullough Mountain Range

b) Simulated view of the proposed Eldorado-Ivanpah 230-kV transmission line in the McCullough Mountain Range

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Figure 3.2-8 **KOP 1 – View of the Transmission Corridor**

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a) View from west of of the South McCullough Wilderness looking northwest toward the existing Eldorado-Baker-Coolwater-Dunn Siding-Mountain Pass 115-kV transmission line

b) Simulated view of the proposed Eldorado-Ivanpah 230-kV transmission line from near the South McCullough Wilderness Area

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Figure 3.2-9 **KOP 2 – View from the South McCullough Wilderness Area**

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a) View of the existing Eldorado-Baker-Coolwater-Dunn Siding-Mountain Pass 115-kV transmission line looking southeast from I-15 near Jean, Nevada

b) Simulated view of the proposed Eldorado-Ivanpah 230-kV transmission line looking southeast from I-15 near Jean, Nevada

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Figure 3.2-10 **KOP 3 – View from Interstate 15 Near Jean, Nevada**

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a) View of the existing Eldorado-Baker-Coolwater-Dunn Siding-Mountain Pass 115-kV transmission line looking southwest from the Desert Oasis Apartment complex in Primm, Nevada

b) Simulated view of the proposed Eldorado-Ivanpah 230-kV transmission line looking southwest from the Desert Oasis Apartment complex in Primm, Nevada

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Figure 3.2-11 **KOP 4 – View from Desert Oasis Apartments in Primm, Nevada**

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KOP 4 shows the perimeter of the apartment complex in the foreground with the low, weathered Clark Mountain Range visible in the background; the middleground is not visible in this view. The visible land in the foreground creates a primarily horizontal line; the mountain range in the background creates an irregular horizontal skyline with jagged elements. The exposed soil of the landscaping in the foreground ranges from light to medium brown, and the mountain range in the background appears dark brown with shale to purple tint. The visible soil in the foreground has a coarse granular dirt texture, while the mountains appear smoothly weathered with some sharp peaks. No water is visible in this view.

The vegetation in this view is primarily manicured landscape and only visible in the foreground. There is no native vegetation visible at middleground and background distances due to fencing around the apartment complex. Pointed trees and low bristly shrubs with interspersed palm trees comprise the typical vegetation in this view. An irregularly horizontal line is created by the vegetation, with colors including pine green, yellow-green, and dark green foliage, as well as brown trunks.

The Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line is visible in the foreground and runs adjacent to the Desert Oasis Apartment complex. The visible portion of the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line consists of gray H-frame LSTs, T-framed LSTs, and associated conductors. A low, tan, block wall; paved dark gray roadway; weathered white drainages and red curbing; black light poles; and terracotta apartment buildings are also visible in the foreground.

KOP 5: View from Ivanpah Dry Lake, East of Interstate 15

KOP 5 (Figure 3.2-12) is a view from the Ivanpah Lake east of I-15 looking northwest toward the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line route, I-15, the Spring Mountain Range, and the town of Primm. This view provides a representative image of what a recreational user of the Ivanpah Dry Lake would see. The duration of views for recreational users would be medium to long, depending on the nature of the recreational activity. A recreational user who remains on the dry lake for an entire day or for an extended block of time would have long views of the proposed project. A recreational user who is crossing the dry lake would have a medium length view of the proposed project. Typical recreational activities in this area include racing, archery, kite buggying, and land sailing. This KOP depicts foreground views of the existing 115-kV transmission line.

KOP 5 shows the nearly flat Ivanpah Lake with the town of Primm and the low, weathered hills and mountains in the middleground and background. The foreground of this view is primarily horizontal with topographic variation in the middleground and background. The horizontal dry lake located in the middleground smoothly inclines diagonally over the crest of the hills, transitioning into the jagged horizontal mountain skyline of the Spring Mountain Range. The dry lake has a smooth to slightly coarse texture with striations of light and gold-tan coloring the land. The hills and mountains in the view appear discontinuously rough and smooth. The hills are colored a variation of light tan, dark brown, sandy beige, wine purple, and slate; the mountains are a mottled gray and dark purple. No water is visible in this view.

A single short, domed, dark green shrub is located in the foreground. Vegetation is visible in background views at the base of the Spring Mountain Range. The vegetation in the middleground views is dark green with undefined edges and texture.

The Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line is present in this view, as well as other transmission lines not part of the proposed project, including the much more prominent existing transmission line on LSTs in the foreground of the view. The portion of the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line present, although not visible at this distance, consists of gray LSTs and associated conductors. The slightly elevated I-15, short cylindrical poles, and buildings and signs associated with the town of Primm are also visible in this view; no structures are visible in the background.

KOP 6: View from Interstate 15 near Primm, Nevada

KOP 6 (Figure 3.2-13) is a view from northbound I-15 looking northeast toward the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line route, the town of Primm, the Spring Mountain Range, and the Lucy Gray Mountains. Views of the proposed project for motorists on I-15 would be of a relatively short duration. The posted speed limit on I-15 is 70 miles per hour. For more information about I-15, refer to Section 3.14, "Transportation and Traffic." This KOP depicts middleground views of the existing 115-kV transmission line.

KOP 6 shows the nearly flat Ivanpah Valley with the low, domed toe of the Spring Mountain Range located at the edge of the view; the Lucy Gray Mountains are visible in the background. The nearly horizontal Ivanpah Lake, which runs adjacent to I-15, transitions into the irregular horizontal toe of the Spring Mountain Range, then into the weathered rugged skyline of the Lucy Gray Mountains. The exposed land in the view includes the golden tan dry lake with a slightly rough texture, and the golden brown and slate to wine-purple mountains with visual textures ranging from lumpy to pointed. No water is visible in this view.

Low mounded shrubs and interspersed grasses are visible in the foreground and represent the typical vegetation of this view. The distinct diagonal line of the vegetation parallels I-15. The color of the vegetation ranges from golden tan to a light olive green with an overall bristly and soft texture.

The Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line is present in this view, as well as other transmission lines not part of the proposed project. The portion of the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line present, while not visible, consists of gray LSTs and associated conductors. The flat I-15 and nearly vertical paralleling fence create a diagonal line that bisects the valley floor; nearly vertical road markers are randomly distributed along the interstate. The irregularly shaped and square-shaped buildings and signs of the town of Primm and a slightly elevated overpass are also visible in this view.

KOP 7: View from Highway 95 in the Eldorado Valley

KOP 7 (Figure 3.2-14) is a view from southbound Highway 95 looking southwest toward the Eldorado Valley, the Eldorado Substation, the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line route, and the McCullough Mountain Range. Views of the proposed project for motorists on Highway 95 would be of a relatively short duration. The posted speed limit on Highway 95 is 65 miles per hour. For more information about Highway 95, refer to Section 3.14, "Transportation and Traffic." This KOP depicts the background to seldom seen views of the existing Eldorado Substation and 115-kV transmission line.

KOP 7 shows the Eldorado Valley with the McCullough Mountain Range visible in the background. The valley floor is flat with some topographic variation, sloping downhill from the foreground to the middleground. The valley floor transitions into intermittently smooth and rough alluvial fans at the base of the mountain range, then into an irregularly weathered form. The nearly horizontal line of the foreground and middleground diagonally inclines at the alluvial fans, becoming an irregularly horizontal skyline with rugged peaks. The exposed soil in the view ranges from light to golden tan to ash brown on the valley floor; the fans and mountains range from warm pink, dark golden brown, gray-brown, and sage green. Primarily sandy and gravelly land is visible in the foreground, appearing smooth on the valley floor, roughening at the fans and mountains. No water is visible in this view.

a) View of the existing Eldorado-Baker-Coolwater-Dunn Siding-Mountain Pass 115-kV transmission line looking northeast from Ivanpah Dry Lake

b) Simulated view of the proposed Eldorado-Ivanpah 230-kV transmission line looking northeast from Ivanpah Dry Lake

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Figure 3.2-12 **KOP 5 – View from Ivanpah Dry Lake, East of Interstate 15**

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a) View of the existing Eldorado-Baker-Coolwater-Dunn Siding-Mountain Pass 115-kV transmission line looking northeast toward Primm, Nevada

b) Simulated view of the proposed Eldorado-Ivanpah 230-kV transmission line looking northeast toward Primm, Nevada

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Figure 3.2-13 **KOP 6 – View from Interstate 15 near Primm, Nevada**

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a) View of the existing Eldorado Substation and Eldorado-Baker-Coolwater-Dunn Siding-Mountain Pass 115-kV transmission line looking west from Highway 95

b) Simulated view of the upgraded Eldorado Substation and the proposed Eldorado-Ivanpah 230-kV transmission line looking west from Highway 95

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Figure 3.2-14 **KOP 7 – View from Highway 95 in the Eldorado Valley**

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Vegetation in this view consists of low, rounded, scraggly, sharp shrubs, which create a generally horizontal line; the vegetation in the middleground and background is not distinguishable from this KOP. The color of the vegetation ranges from tan, light green, and dark red-brown in the foreground to dusty greens and browns in the middleground.

In addition to the Eldorado Substation and the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line, other transmission lines not part of the proposed project are present in this view. The portion of the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line present, while not visible at this distance, consists of gray LSTs and associated conductors. A gray and green fence is visible in the foreground and creates a generally horizontal line with short vertical fence posts. A flat, blue reflective solar facility and two substations are located on the valley floor, creating complex horizontal and vertical lines associated with the solar panels, support buildings, and poles.

KOP 8: View from the Highway 164 Overpass in the Ivanpah Valley

KOP 8 (Figure 3.2-15) is a view from the I-15/Highway 164 Overpass looking northwest toward the proposed Ivanpah Substation, Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line route, the Ivanpah Valley, the Ivanpah Lake, the Clark Mountain Range, the Spring Mountain Range, and the Lucy Gray Mountains. This photograph provides an elevated and, subsequently, broader view of what a motorist on northbound I-15 would see. Views of the proposed project for motorists on I-15 would be of a relatively short duration. The posted speed limit on I-15 is 70 miles per hour. For more information about I-15, refer to Section 3.14, "Transportation and Traffic." This KOP depicts the background to seldom seen views of the proposed Ivanpah Substation location and the existing 115-kV transmission line.

KOP 8 is a view of the Ivanpah Valley with the Clark Mountain Range, the Spring Mountain Range, and the Lucy Gray Mountains visible in the background. The valley floor is typically flat, sloping downhill from foreground to middleground with a low, diagonally sloping hill located west of I-15. Ivanpah Lake and the valley floor create a generally horizontal line with topographic variations at the isolated, low, conical hills and at the irregularly weathered mountains in the background. The exposed soil in the valley is predominantly golden tan, while Ivanpah Lake is a light tan. The hills and mountains range in color, from light tan to dark golden brown to mottled brown; the Lucy Gray Mountains have a warm pink cast. The gravelly texture of the foreground transitions into the generally smooth valley floor, which transitions into the intermittently rough- and smooth-textured mountains. No water is visible in this view.

The typical vegetation visible in the view consists of low, mounded, randomly spaced shrubs, which create a weak horizontal line. The color of the vegetation in this view ranges from sage green to red-brown with an overall rough, bristly texture that transitions into a smooth, velvety texture on the valley floor.

The Eldorado-Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line, although not distinguishable at this distance, is present in this view, as well as other transmission lines not part of the proposed project. The portion of the Eldorado–Baker–Coolwater–Dunn Siding–Mountain Pass 115-kV transmission line present consists of gray LSTs and associated conductors. I-15 and associated dividers and signs are visible in this view, as well as dirt roads and buildings associated with a former roadside service and the town of Primm. The grays, black, whites and yellows of I-15 create a strong diagonal line curving north, transitioning to a vertical line sloping downhill from foreground to background. The tan dirt roads create diagonal lines crossing the valley floor, and the muted gray buildings associated with a former roadside service and the town of Primm appear angular and block-like in the background.

3.2.2 Applicable Laws, Regulations, and Standards

The following section provides a summary of federal, state, and local laws, regulations, and standards that govern visual resources in the proposed project area.

3.2.2.1 Federal

Federal Land Policy and Management Act

The Federal Land Policy and Management Act (FLPMA) of 1976 (90 Stat. 2743; 43 United States Code 1601, et seq.) established the BLM as the jurisdictional agency for expanses of land in the West to be managed as multiuse lands. The following sections of the FLPMA relate to the management of aesthetic and visual resources on federal lands:

> § 102(a): "The public lands [shall] be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values."
>
> § 201(a): "The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including…scenic values)."
>
> § 505(a): "Each right-of-way shall contain terms and conditions which will…(ii) minimize damage to the scenic and esthetic values."

Federal regulations regarding aesthetics and visual resources are enacted through the application of the Visual Resource Management (VRM) system outlined in the BLM 8400 VRM Manual. The VRM system involves inventorying scenic values and establishing management classes and objectives for those values, and then evaluating proposed activities to determine whether they conform to the management objectives. VRM classes may be established in Resource Management Plans (RMPs). In the absence of VRM classes in an adopted RMP, BLM resource specialists may complete a Visual Resource Inventory (VRI) for the affected area. The California Desert Conservation Area Plan does not have established VRM classes for the proposed project area within California. The Las Vegas RMP has established VRM classes for the proposed project area within Nevada. Because the classes are established differently for Nevada and California, there may be different ratings for adjacent lands at the California–Nevada border. The VRM and VRI classes described below are shown on Figure 3.2-1.

California Desert Conservation Area Plan

The proposed Ivanpah Substation, a portion of the transmission route, and a portion of the telecommunications route would be located on BLM land managed according to the California Desert Conservation Area (CDCA) Plan (BLM 1980). The CDCA Plan does not include VRM classifications, nor does it directly address scenic values in the jurisdictional area; however, the BLM developed VRI classes for the ISEGS project, which are consistent with the CDCA Plan. The proposed project would be located entirely within a VRI Class III area (BLM and CEC 2009). The management objectives associated with VRI classes are discussed below in Section 3.2.3.3, "Methodology."

Northern and Eastern Mojave Plan Amendment

The Northern and Eastern Mojave (NEMO) Plan Amendment (BLM 2002) updated the CDCA Plan for lands crossed by the proposed project. The plan did not establish VRM classes. The NEMO plan addressed visual resource impacts to users of historic trails in the plan area. The Old Spanish Historic Trail crosses land managed according to the NEMO Plan Amendment, but the trail would not be crossed by the proposed transmission or telecommunications routes, including alternatives, and no proposed project components would be located within the vicinity of the Old Spanish Historic Trail.

a) View of the proposed Ivanpah Substation location looking northwest from the Highway 164/Interstate 15 overpass

Simulated iew of the proposed Ivanpah Substation location looking northwest from the Highway 164/Interstate 15 overpass looking west from Highway 95

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Figure 3.2-15 **KOP 8 – View from the Highway 164 Overpass in the Ivanpah Valley**

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Las Vegas Resource Management Plan

Within Nevada, a portion of the proposed project would be located on land managed according to the Las Vegas RMP (BLM 1998). The BLM Southern Nevada District Office manages land under its jurisdiction according to the goals and policies outlined in the Las Vegas RMP, which contains the following objective regarding the management of visual resources:

- **VS-1.** Limit future impacts on the visual and aesthetic character of the public lands.

The proposed transmission line would cross VRM Class II and VRM Class III land as designated by the Las Vegas RMP. The proposed telecommunications line would cross VRM Class II land. The management objectives associated with VRM classes are discussed below in Section 3.2.3.3, "Methodology."

National Historic Preservation Act

The National Historic Preservation Act (NHPA) includes language protecting the visual integrity of sites listed or eligible for the National Register of Historic Places: "Examples of adverse effects…include…introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features…" (36 Code of Federal Regulations Part 800.5). Impacts to visual resources protected by the NHPA are discussed in Section 3.5, "Cultural Resources."

3.2.2.2 State

California Department of Transportation

The California State Department of Transportation (Caltrans) administers the State Scenic Highway Program to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways (California Streets and Highways Code § 260, et seq.). The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. These highways are identified in the Streets and Highways Code § 263. The program entails regulation of land use and density of development, attention to the design of sites and structures, attention to and control of signage, landscaping, and grading, and other restrictions. The local jurisdiction is responsible for adopting and implementing such regulations. If a highway is listed as eligible for official designation, it is also part of the Scenic Highway System and care must be taken to preserve its eligibility status. There are no designated or eligible State Scenic Highways within the vicinity of EITP.

Nevada Department of Transportation

The Nevada Department of Transportation (NDOT) developed the I-15 Landscape and Aesthetics Corridor Plan (NDOT 2005) as required by the NDOT Master Plan. The I-15 Landscape and Aesthetics Corridor Plan does not contain any rules, regulations, or policies regarding projects built within view of the I-15 corridor. However, in outlining planned landscape and aesthetic improvement projects for the corridor, the I-15 Landscape and Aesthetics Corridor Plan does establish scenic zones along the highway. The proposed project would parallel the portion of I-15 classified as the "Gateway to Nevada's Excitement" Design Segment. Design Objectives for the portion of I-15 paralleled by the proposed project are classified as Statewide Gateway (near Primm, Nevada) and Preserved Desert Landscape Character (from Roach, Nevada, to Jean, Nevada). Design objectives for these segments of I-15 applicable to the proposed project include the following:

- Preserved Desert Landscape Character
  - 2. Preserve scenic views of mountain ranges in the distance, middleground of the Mojave Desert, and lake beds in the foreground.
- Managed Desert Landscape Character

  - 1. Plan for a future design context that will integrate expected growth, major facilities, and development within this segment.
  - 2. Maintain the desert character in conjunction with new urbanization and growth.

There are no designated or eligible Scenic Highways within view of the proposed project in Nevada (NDOT 2009).

3.2.2.3 Regional and Local

San Bernardino County, California

The Conservation and Open Space Elements of the San Bernardino County General Plan include the following goals, objectives, and programs relating to aesthetic and visual resources (San Bernardino County 2005 and 2006):

- **Goal D/CO 1.** Preserve the unique environmental features and natural resources of the Desert Region, including native wildlife, vegetation, water, and scenic vistas.
- **Policy D/CO 1.2.** Require future land development practices to be compatible with the existing topography and scenic vistas and protect the natural environment.
- **Policy D/CO 3.2.** All outdoor lighting including street lighting shall be provided in accordance with the Night Sky Protection Ordinance and shall only be provided as necessary to meet certification standards.
- **Goal OS5.** The County will maintain and enhance the visual character of scenic routes in the County.
- **Policy OS 5.1.** Features meeting the following criteria will be considered for designation as scenic resources: a.) A roadway, vista point, or area that provides a vista of undisturbed natural areas, b.) Includes a unique or unusual feature that comprises an important or dominant portion of the viewshed (the area within the field of view of the observer), c.) Offers a distant vista that provides relief from less attractive views of nearby features (such as views of mountain backdrops from urban areas).
- **Policy OS 5.2.** Define the scenic corridor on either side of the designated route, measured from the outside edge of the ROW, trail, or path. Development along scenic corridors will be required to demonstrate through visual analysis that proposed improvements are compatible with the scenic qualities present.
- **Policy OS 5.3.** The County desires to retain the scenic character of visually important roadways throughout the County. A "scenic route" is a roadway that has scenic vistas and other scenic and aesthetic qualities that over time have been found to add beauty to the County. Therefore, the County designates the following route as a scenic highway and applies all applicable policies to development on this route.
  - I-15 from the junction with Interstate 215 northeast to the Nevada state line, excepting those areas within the Barstow Planning Area and the community of Baker where there is commercial/industrial development, those portions within the Yermo area from Ghost Town Road to the East Yermo Road overcrossing on the south side only, and from First Street to East Yermo Road overcrossing on the north side and all incorporated areas.
- **Night Sky Protection Ordinance (Ord. 3900).** This ordinance provides that "Commercial and industrial outdoor lighting must be fully shielded so that no light is emitted above the horizontal plane…do not direct light or light trespass onto adjacent property…or to any member of the public who may be traveling on adjacent roadways."

Clark County, Nevada

The Clark County Comprehensive Plan includes the following policies related to the siting and design of public utilities to minimize impacts to aesthetic and visual resources (Clark County 2006):

- **UT 1-4.** Support increasing capacity of existing utility corridors over establishing new ones.
- **UT 1-8.** Support the reduction of visual impacts by newly constructed utility poles, towers, substations, and equipment buildings. Use methods for reducing the effect through actions such as:
  - Disguising and co-locating antennas for cell towers
  - Hiding equipment buildings with screening and solid fencing
  - Using architecture design on major utility poles to complement the character of a community
  - Placing high capacity electrical transmission lines underground to lessen visual impacts in large multi-use projects

Boulder City, Nevada

The Boulder City Master Plan includes the following policy related to visual impacts within the Eldorado Valley region (Boulder City 2003):

> **EV 3: Views.** The visual impacts of future development in the Eldorado Valley should be a strong consideration when reviewing future proposals for energy production facilities or other uses. Future development should be designed so as to minimize negative impacts to views of the Eldorado Valley from the urbanized areas of the city.

3.2.3 Impact Analysis

This section defines the methodology used to evaluate impacts for visual resources, including CEQA impact criteria. The definitions are followed by an analysis of each alternative, including a joint CEQA/NEPA analysis of impacts. At the conclusion of the discussion is a NEPA impact summary statement and CEQA impact determinations. This section also lists the Applicant Proposed Measures (APMs) designed to minimize impacts to visual resources in Section 3.2.3.4, "Applicant Proposed Measures." For mitigation measures, refer to Section 3.2.4.

3.2.3.1 NEPA Impact Criteria

The NEPA analysis determines whether direct or indirect effects to visual resources would result from the proposed project, and explains the significance of those effects in the proposed project area (40 CFR 1502.16). Significance is defined by Council on Environmental Quality regulations and requires consideration of the context and intensity of the change that would be introduced by the project (40 CFR 1508.27). Impacts are discussed in proportion to their significance (40 CFR 1502.2[b]). To facilitate the comparison of alternatives, the significance of environmental changes is described in terms of temporal scale, spatial extent, and intensity.

The following criteria were considered in determining whether a visual impact would be adverse. The BLM VRM methodology was used as the primary indication of potential impact significance. If impacts meet the VRM class objectives of a given KOP in Nevada or are consistent with the VRI objectives in California, the impact is considered minor or negligible. If the impact does not meet the applicable VRM or VRI class objectives of a given KOP, the impact is considered major. The analysis considers the level of visual contrast that would be introduced at KOPs, focusing on contrast in form, line, color, and texture and the introduction of new sources of light or glare.

3.2.3.2 CEQA Impact Criteria

Under CEQA, the proposed project would have a significant impact if it would:

a. have a substantial adverse effect on a scenic vista;

b. substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;

c. substantially degrade the existing visual character or quality of the site and its surroundings; or

d. create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

3.2.3.3 Methodology

The proposed project would be located primarily on BLM land; therefore, the methodology used to determine impacts on visual resources is consistent with the BLM's guidelines for selecting KOPs, describing the views from these locations, determining the degree to which views would be impacted, and assessing the proposed project's compliance with applicable VRM or VRI objectives. The assessment of the proposed project's impacts is based on an evaluation of the changes to the existing visual environment that would result from construction, operation, and, maintenance of the proposed project.

KOPs were selected in accordance with BLM VRM Manual 8431 and include critical viewpoints such as those from residential communities or road crossings, representative views of typical landscapes in the proposed project area, and any special project or landscape feature, such as the proposed substation location or a dry lake bed. The KOP selection process considered the number of viewers, the duration of the view, and viewer expectation.

Viewer expectation and the sensitivity of viewpoints were also considered in selecting the KOPs as outlined in the BLM Visual Resources Inventory Manual 8410-1. Factors considered in determining the sensitivity of a viewpoint and viewer expectation include the types of users in the area, the amount of use for each location, any public interest, adjacent land uses, and areas with special designations such as Wilderness Areas or Recreation Areas.

KOPs were agreed upon by the applicant's consultants, CPUC consultant, and BLM staff from both the Needles and Las Vegas field offices. The consulting team met with BLM staff from both field offices to conduct field work and identify potential KOPs. Coordination with agency staff continued after completion of the visual field work to discuss potential project issues and finalize the selection of KOPs for the proposed project.

Field surveys in San Bernardino County, California, and Clark County, Nevada, were conducted on October 16, 2008, to select potential KOPs in consultation with the BLM. Additional field surveys were conducted in Clark County, Nevada, on November 13 and 14, 2008, to select potential KOPs in consultation with the BLM. During the field visits and in subsequent consultation, BLM staff indicated that:

- BLM land in California that would be crossed by proposed project components is managed as VRI Class III; and
- BLM land in Nevada that would be crossed by proposed project components is designate VRM Class III and VRM Class II.

KOP photos were taken with a 35mm camera and fixed 50mm lens, with a resulting horizontal field of view of approximately 40 degrees. A single-frame image was used for each KOP. If viewed as a 10-inch wide image at a distance of about 1 foot, this field of view approximates the actual field of view experienced.

In accordance with BLM guidelines, simulations were prepared to assess the degree of visual contrast that would be introduced by the proposed project. The photographs taken from each of the KOPs were used as the basis for the simulations. For each view, computer modeling and rendering techniques were used to produce the simulated images. Existing topographic and site data provided the basis for developing an initial digital model. Project engineers provided three-dimensional (3-D) digital models of the transmission and substation structures. These models were then combined with the digital site model to produce a complete computer model of the proposed project.

For each simulation viewpoint, a viewer location was digitized from topographic maps and scaled aerial photographs, using 5 feet as the assumed viewer eye level. Computer wire frame perspective plots were then overlaid on the photographs of the views from the simulation viewpoints to verify scale and viewpoint location. Digital visual simulation images were produced as a next step based on computer renderings of the 3-D model combined with high-resolution digital versions of base photographs. The final hardcopy visual simulation images that appear in this document were produced from the digital image files using a color printer.

Comparison of the "before" photographs with the simulations of the proposed project as it would appear after construction provided the basis for determining the potential impacts on views and visual quality. These simulations do not include any landscaping plans as landscaping had not been finalized at the time the simulations were prepared. Additionally, all simulations depict the proposed project as it would appear when constructed and do not depict the proposed project during construction. Therefore, these simulations depict the proposed project as it would appear immediately after construction and before any landscaping were to be installed.

The impact analysis assessed the contrast between the existing conditions and conditions that would exist after construction of the proposed project for basic visual features (landforms, water bodies, vegetation, and structures) using four basic design elements (form, line, color, and texture). Views and features of the proposed project are described in terms of distance zones. These are foreground (0 to 1 mile), middleground (1 to 3 miles), background (3 to 5 miles), and seldom-seen views (greater than 5 miles).
The degree of contrast that would be introduced by the proposed project at each KOP is then assigned a BLM rating which reflects the degree of contrast of visual changes against the objectives of the applicable VRM class or VRI rating that the KOP is located within. These ratings are as follows:

- Strong: the element contrast demands attention, will not be overlooked, and is dominant in the landscape
- Moderate: The element contrast begins to attract attention and begins to dominate the characteristic landscape.
- Weak: the element contrast can be seen but does not attract attention.
- None: the element contrast is not visible or perceived.

BLM classifies the visual resources of an area by assigning them to one of four inventory classes using a standard visual resource inventory process. Each of the four classifications corresponds to management goals as follows:

- Objective Class I: The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- Objective Class II: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

- Objective Class III: The objective of this class is to partially retain the existing character of the landscape. The level of change to characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- Objective Class IV: The objective of this class is to provide for management activities that allow major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

As directed in the BLM Visual Contrast Rating Manual 8431, a number of variables are considered in determining the significance of a potential impact to aesthetics and visual resources for each KOP. A weak visual change can constitute a major visual impact if the change is perceptible in foreground views to a highly sensitive viewer group such as recreational viewers in a VRM Class I area. The factors considered in determining the extent and implications of the visual changes are as follows:

- The specific changes in the affected environment's composition and character and any outstanding valued qualities,
- The context of the affected visual environment,
- The extent to which the affected environment contains places or features that have been designated in plans and policies for protection or special consideration, and
- The numbers of viewers, their activities, and the extent to which the activities are related to the visual qualities affected by proposed changes.

3.2.3.4 Applicant Proposed Measures

The applicant has included the following APMs related to visual resources:

APM AES-1: Road Cut Rock Staining. Where new roads are required in the South McCullough Mountains to access new or existing transmission and subtransmission towers, the applicant would consult with the BLM regarding feasible methods to treat the exposed rock to match the overall color of the adjacent weathered rock.

APM AES-2: Seeding and Inter-Planting. Where new roads are required in the South McCullough Mountains to access new or existing transmission and subtransmission towers, road cuts would be treated by seeding and/or inter-planting into the disturbed areas to restore the area to an appearance that would blend back into the overall landscape context.

APM AES-3: Non-Reflective Finish. LSTs and TSPs would be constructed of steel that was galvanized and treated at the factory to create a dulled finish that would reduce reflection of light off of the tower members. As appropriate to the environment, the galvanized coating would also be treated to allow the towers to blend into the backdrops. Non-specular transmission cable would be installed for the new transmission line to minimize conductor reflectivity.

APM AES-4: Regrade/Revegetate Construction Sites. Areas around new or rebuilt transmission and subtransmission structures that must be cleared during the construction process would be regraded and revegetated to restore them to an appearance that would blend back into the overall landscape context.

APM AES-5: Use Existing Access Roads. To the extent feasible, existing access roads would be used.

APM AES-6: Minimize Road Modifications. Widening and grading of roads would be kept to the minimum required for access by proposed project construction equipment.

APM AES-7: Dust Suppression. During the construction period, dust suppression measures would be used to minimize the creation of dust clouds potentially associated with the use of the access roads.

APM AES-8: Substation Lighting Control. The substation lighting would be designed to be manually operated only when required for non-routine nighttime work. The lighting would be directed downward and shielded to eliminate offsite light spill at times when the lighting might be in use.

3.2.3.5 Proposed Project / Proposed Action

Construction

Visual impacts associated with construction of the proposed project would result from the following:

- The removal of existing vegetation and the exposure of bare soils within construction workspaces;
- Grading and vegetation removal to improve access and spur roads;
- Exposure of bare soils where pits would be dug for tower installation;
- Removal of vegetation and grading for the proposed Ivanpah Substation and microwave tower;
- Trenching along Nipton Road where the telecommunications line would be installed underground; and
- Storage of materials and equipment.

Construction impacts would be greatest in areas with the greatest amount of land disturbance, such as laydown or staging areas and areas where substantial trenching would be required. Construction yards would be located at the Eldorado Substation, which is visible in KOP 7 (Figure 3.2-14); in Jean, Nevada; at an existing generating station yard in Nevada; at a Primm Valley Casino vacant lot in Primm, Nevada; at a vacant lot at the Whiskey Pete's Casino in Primm, Nevada; at the proposed BrightSource generating station yard, which would be visible in KOP 8 (Figure 3.2-15); and in the town of Nipton, California.

However, construction impacts would be temporary because the land would be restored to its original condition (APM AES-4). Construction would occur over an approximately 19 month period, although construction in any one location would be of a shorter duration. The visual impact from activities, such as grading and the removal of vegetation, may occur for up to three years after the construction period, depending upon the success of revegetation efforts. Additionally, MM BIO-2 requires the applicant to develop a Reclamation, Restoration, and Revegetation Plan (RRRP) prior to adoption of the Final EIR/EIS that will guide restoration and revegetation activities for all disturbed lands associated with construction of the project and the eventual termination and decommissioning of the project. MM BIO-2 is discussed in further detail in Section 3.4: 'Biological Resources.'

Construction impacts would be greatest for areas with high degrees of viewer sensitivity, such as residential areas, recreational areas, and areas with unique visual features. These include viewers at KOP 1, KOP 2, KOP 4, and KOP 5 (Figures 3.2-8, 3.2-9, 3.2-11, and 3.2-12). Construction in these areas would temporarily disrupt viewsheds, creating visual contrast by introducing construction equipment and as a result of construction-related activities.

Operation & Maintenance

This section summarizes the visual impacts that would occur during operation and maintenance of the proposed project.

The proposed double-circuit 230-kV transmission line would replace an existing single-circuit 115-kV subtransmission line. The proposed transmission line would be strung on 216 LSTs that range in height from 110 to 180 feet and 42 single-circuit H-Frame towers that range in height from 45 to 75 feet. The proposed LSTs are depicted in the simulation for KOP 4 (Figure 3.2-11), and the single circuit H-frame structures are depicted in the simulation for KOP 1 (Figure 3.2-8). The existing single-circuit 115-kV subtransmission line is strung on H-Frame towers that are approximately 70-feet tall. Replacing existing towers with larger, taller towers would incrementally contribute to visual impacts, but would not create a new source of contrast in an otherwise undeveloped landscape. However, given the

increased structure size, there would be a minor, long-term adverse effect on visual resources. As discussed in Chapter 3.9, "Land Use," the transmission line route is primarily within established BLM energy corridors and would follow the existing 115-kV transmission ROW with the exception of six minor deviations.

Longer-term visual impacts would also result from removing or altering vegetation that may currently provide a visual barrier, or from changing landforms in a way that introduced contrasts in visual scale, special characteristics, form, line, color, or texture. The proposed Ivanpah Substation and microwave tower would affect visual resources by introducing a new, angular form into an undeveloped area, disrupting the lines and spatial proportions of views. The proposed Ivanpah Substation is depicted in the simulation for KOP 8 (Figure 3.2-15). The facility colors would contrast with natural palettes, and the structures would disrupt lines and uniform textures in the landscape. Permanent impacts on visual resources would be more intense for areas with higher degrees of viewer sensitivity, including residences, recreation areas such as the Ivanpah Dry Lake, Wilderness Areas, and the MNP.

The visual impact of the proposed project is discussed in more detail with regard to each KOP in the next section. Contrast ratings prepared for each KOP are included in Appendix C.

Impacts by Key Observation Point

Simulations of the proposed project facilities for each KOP, figures 3.2-8 through 3.2-15, are provided below. The simulations are compared against KOP photographs depicting the existing setting to assess the level of contrast that would be introduced by the proposed project. Contrast is described in terms of changes to the form, line, color, and texture or landforms, water bodies, vegetation, and structures present in the view. Contrast is also described in terms of duration. Short-term changes would be present during construction. Long-term changes would be present for the life of the proposed project. The analysis then considers whether the level of contrast meets the visual resource objectives of the applicable VRM Class or VRI rating.

Appendix C contains the visual contrast rating worksheets (Form 8400-4) from the BLM Visual Resource Inventory Handbook H-8410-1.

KOP 1: View of the Transmission Corridor

KOP 1 (Figure 3.2-8) is located within a BLM VRM Class III area, with views of VRM Class III and VRM Class II areas in the foreground and middleground. The sensitivity of this viewpoint is considered moderate: while visual resources are of high concern to recreational users of the South McCullough Wilderness Area, and the maintenance of those values is important, overall use of the area is low, and adjacent land uses include other transmission lines. The proposed project would be visible in the foreground and middleground distance zone. The contrast rating worksheet for this KOP is located in Appendix C.

Construction of the proposed transmission line would be visible in KOP 1. Construction would result in short-term and long-term changes to the foreground and middleground of the existing environment of this view. Large equipment, delivery trucks, and construction equipment would be present during construction, and the movement and storage of such vehicles would be visible. Transmission towers would become visible as they are erected throughout the construction period. Construction of new access roads, decommissioning of existing H-frame LST and T-frame LST transmission towers, installation of the telecommunications line, and preparation of the transmission line tower structure sites would result in temporary generation of fugitive dust and temporary clearing of vegetation that would be visible from KOP 1. To lessen the visual impacts associated with the clearing of vegetation and rock cutting required to improve existing access roads or construct new access roads, the applicant would consult with the BLM to determine feasible methods to weather exposed rock (APM AES-1) and would blend the roads back into the overall landscape by seeding and/or inter-planting (APM AES-2).

Operation of the proposed project would result in long-term changes to the foreground and middleground of the existing environment of KOP 1. This KOP depicts a location where the proposed route would diverge from the

existing ROW due to a transmission line crossing. Long-term visible changes would result from the addition of H-frame TSP structures, LSTs, the telecommunications line, and associated conductors in the foreground, and LSTs in the middleground. H-frame TSPs are used at this point along the proposed transmission line to allow the proposed line to cross under the remaining existing transmission line visible in the foreground and middleground in this view. The H-frame TSPs, LSTs, telecommunication line, and associated conductors would be visible in the foreground in this view; LSTs would be less distinguishable in the middleground in this view. Denser H-frame TSPs and larger LSTs would replace the existing H-frame and T-frame transmission line in this view, creating a strong change to the line of the structures in the foreground and a strong change to the line of the structures in the middleground. Areas permanently cleared of vegetation for access roads and transmission line towers would be visible in the foreground of KOP 1. As outlined in APM AES-1 and APM AES-2, cleared areas in the South McCullough Mountains would be reseeded and interplanted and disturbed rock would be stained to lessen visual contrast.

Development of the proposed transmission line in the view from KOP 1, including construction and operation, would result in a weak change to the form, line, color, and texture of the landform and vegetation. Construction, operation, and decommissioning of the proposed transmission line in this view would result in a moderate change in the form, line, color, and texture for structures present in the foreground of the existing environment, and a moderate change to the form, line, color, and texture for structures present in the middleground of the existing environment.

The changes to the existing environment would be consistent with the VRM Class III assigned to the foreground but would not be consisten with the VRM Class II designation in middleground views. Therefore, development of the proposed transmission line would result in a major, adverse, and unavoidable effect at KOP 1.

KOP 2: View from South McCullough Wilderness

KOP 2 (Figure 3.2-9) is located within and includes views of a BLM VRM Class III area, although the South McCullough Wilderness Area immediately east of the photo location is managed as VRM Class II. The sensitivity of this viewpoint is moderate: while visual resources are a high concern for recreational users of the South McCullough Wilderness Area and the maintenance of those values is important, the overall use of the area is low and adjacent land uses include other transmission lines. This viewpoint is approximately 3 miles from the proposed transmission line route, so the proposed project would be visible in background views. The contrast rating worksheet for this KOP is located in Appendix C.

Construction would result in short-term and long term changes to the middleground of the existing environment. Large equipment, delivery trucks, and construction equipment would be present during construction, and movement of such vehicles could be visible. Transmission towers would become increasingly evident as they were erected throughout the construction period. Construction of new access roads, decommissioning of existing transmission towers, installation of the telecommunications line, and preparation of the transmission line tower structure sites would result in temporary generation of fugitive dust and temporary clearing of vegetation that could be visible in KOP 2 under certain conditions. To lessen the visual impacts associated with the clearing of vegetation and rock cutting required to improve existing access roads or construct new access roads, the applicant would consult with the BLM to determine feasible methods to weather exposed rock (APM AES-1) and would blend the roads back into the overall landscape by seeding and/or inter-planting (APM AES-2).

Operation of the proposed project would result in minor long-term changes to the middleground of the existing environment. Long-term changes would result from the addition of LSTs, the telecommunications line, and associated conductors. These elements of the proposed project would barely be visible to not visible under certain conditions, such as haze, dust storms, or at night due to the 3-mile distance between the viewpoint and the proposed transmission route. During normal conditions, these elements would result in weak changes to the existing environment due to the distance. LSTs would replace the existing H-frame LST and T-frame LST transmission line, resulting in a weak change to the line of the structures visible in the view. Areas permanently cleared of vegetation for access roads and transmission line towers would also barely be visible to not visible in KOP 2.

Development of the proposed transmission line in this view, including construction and operation, would result in a minor change in the form, line, color, and texture of the land form, vegetation, and structures present in the existing environment. The changes to the existing environment would be consistent with the VRM Class III assigned to these BLM-managed lands because all changes to landform, vegetation, and structures visible from this vantage point would be weak. Therefore, development of the proposed transmission line would result in a minor adverse effect at KOP 2, and mitigation would not be required.

KOP 3: View from Interstate 15 near Jean, Nevada

KOP 3 (Figure 3.2-10) includes views of a BLM VRM Class III area. KOP 3 is located approximately 6.5 miles from the proposed transmission line route. The sensitivity of this viewpoint is moderate to low: there is a high level of use, but visual resources are a low concern for most users and a low priority for public concern. The sensitivity of this viewpoint is considered low because most viewers would be travelers on I-15. Travelers that typically use this roadway are primarily concerned with reaching a destination as opposed to driving specifically for recreation or sightseeing, and the posted speed limit is 70 miles per hour. Additionally, there is no scenic highway designation for this roadway. This viewpoint is located approximately 6.5 miles from the proposed transmission line route, so the proposed project would be visible in background views. The contrast rating worksheet for this KOP is located in Appendix C.

Construction would result in short-term changes to the background of the existing environment similar to those described for KOP 2, but these changes would not be visible to motorists along I-15 due to the distance.

Operation of the proposed project would result in long-term changes to the background of the existing environment of KOP 3 similar to those described for KOP 2. Due to the approximately 6.5-mile distance between this viewpoint and the proposed transmission route, changes to structures in the background would not be visible in this view.

Development of the proposed transmission line in this view, including construction and operation, would not result in any visible change in the form, line, color, and texture of the land, water body, vegetation, or structures present in the existing environment due to the fact that changes would be present only in seldom seen views and the viewer would likely be traveling at a high speed. Additionally, the proposed project would follow the existing route and would repeat the pattern created by the existing 115-kV transmission line that is currently present in this view. The changes to the existing environment would be consistent with the VRM Class III assigned to these BLM-managed lands because all changes to landform, vegetation, and structures would be not visible from this viewpoint. Therefore, development of the proposed transmission line would result in a negligible adverse effect at KOP 3, and mitigation would not be required.

KOP 4: View from the Desert Oasis Apartments in Primm, Nevada

KOP 4 (Figure 3.2-11) is not located on BLM-managed land but includes views of a BLM VRM Class III area in the foreground. Middleground and background views include land designated VRI Class III. The BLM does not assign VRM classes to or assess visual impacts for private land but has assigned VRM and VRI classes for land visible from this location. The sensitivity of this viewpoint is moderate to high: maintenance of visual resources is a major concern for residents and the use of the area is high, although adjacent land uses include existing energy and industrial development. This viewpoint is adjacent to the proposed transmission route, so the proposed project would be visible in foreground views. The contrast rating worksheet for this KOP is located in Appendix C.

Construction would result in short-term changes to the foreground of the existing environment of KOP 4. Construction of new access roads, decommissioning of existing transmission towers, installation of the telecommunications line, and preparation of the transmission line tower structure sites would result in temporary generation of fugitive dust that would be visible from KOP 4. Large equipment, delivery trucks, and construction equipment would be present during construction, and movement of such vehicles could be visible. Transmission towers and associated conductors would be visible in the foreground as they were erected throughout the construction period. However, the wall barrier

surrounding the apartment complex would block views of much of the construction activity, equipment, and material storage.

Operation of the proposed project would result in long-term changes to the foreground of the existing environment of KOP 4. Long-term visible changes would result from the addition of LSTs, the telecommunications line, and associated conductors in the foreground. Taller LSTs would replace the existing H-frame towers in this view, resulting in a strong change to the line of the structures in the foreground. Additionally, the conductor wire would be thicker and would therefore strengthen horizontal lines visible in foreground views, resulting in a strong degree of visual contrast. Areas permanently cleared of vegetation for access roads and transmission line towers would not be visible in the foreground of KOP 4 due to the wall barrier surrounding the apartment complex.

Development of the proposed transmission line in this view, including construction and operation, would not result in any visible change in the form, line, color, or texture of the landform and vegetation. Construction and operation of the proposed transmission line in this view would result in a moderate change in the form, line, and color of structures present in the foreground of the existing environment. The changes to the existing environment would be consistent with the VRM Class III and VRI Class III designations assigned to the BLM-managed lands in the viewshed because changes to structures visible from this vantage point would be moderate. Therefore, development of the proposed transmission line would result in a minor, adverse affect and mitigation would not be required.

KOP 5: View from the Ivanpah Dry Lake

KOP 5 (Figure 3.2-12) is located within and includes foreground and middleground views of a VRI Class III area. Background views include land managed according the VRM Class III objectives. The sensitivity of this viewpoint is moderate to high: there is a high level of use and visual resources are a moderate concern for most recreational users although there is significant adjacent development, both commercial and industrial. Visual concern is considered moderate for most recreational users because the duration of views would be high and recreational activities may be enhanced by visual resources although that is not the primary objective of the activity. This viewpoint is located approximately 1 mile from the proposed transmission line route, so the proposed project would be visible in middleground views. The contrast rating worksheet for this KOP is located in Appendix C.

Construction would result in short-term and long-term changes to the middleground of the existing environment. Large equipment, delivery trucks, and construction equipment would be present during construction, and movement of such vehicles could be visible. Transmission towers would become increasingly evident as they are erected throughout the construction period. Construction of new access roads, decommissioning of existing transmission towers, installation of the telecommunications line, and preparation of the transmission line tower structure sites would result in temporary generation of fugitive dust and temporary clearing of vegetation that could be visible in KOP 5 under certain conditions.

Operation of the proposed project would result in long-term changes to the middleground of the existing environment of KOP 5 similar to those described for KOP 2. The LSTs, telecommunications line, and associated conductors would generally blend in against the backdrop of the Spring Mountain Range and would barely be visible to not visible in middleground views from KOP 5. Access roads, another permanent element of the proposed project, and other areas permanently cleared of vegetation would likely not be visible from KOP 5.

Development of the proposed transmission line in this view, including construction and operation, would result in no visible change in the form, line, color, or texture of the landform and vegetation. Construction and operation of the proposed transmission line in this view would result in a weak change in the form, line, color, and texture for structures present in the existing environment. The changes to the existing environment would be consistent with the VRI Class III and VRM Class III designations assigned to these BLM-managed lands because all changes to landform, vegetation, and structures visible from this vantage point would be weak. Therefore, development of the proposed transmission line would result in a minor adverse effect, and mitigation would not be required.

KOP 6: View from Interstate 15 near Primm, Nevada

KOP 6 (Figure 3.2-13) is located within and includes foreground and middleground views of a VRI Class III area. Background views include land managed according the VRM Class III objectives. The sensitivity of this viewpoint is moderate to low: there is a high level of use, but visual resources are a low concern for most users and a low priority for public concern. The sensitivity of this viewpoint is considered low because most viewers would be travelers on I-15. Travelers that typically use this roadway are primarily concerned with reaching a destination as opposed to driving specifically for recreation or sightseeing, and the posted speed limit is 70 miles per hour. Additionally, there is no scenic highway designation for this roadway. The town of Primm, Nevada has a number of hotels and casinos, a gas station, and a truck stop Visitors to Primm and potential viewers of the proposed project include tourists and travelers along I-15 who have stopped for amenities. This viewpoint is approximately 1 mile from the proposed transmission line route, so the proposed project would be visible in middleground views. The contrast rating worksheet for this KOP is located in Appendix C.

Construction would result in short-term changes to the middleground views similar to those described for KOP 5.

Operation of the proposed project would result in long-term minor changes to the middleground of the existing environment of KOP 6 similar to those described for KOP 2. The LSTs, telecommunications line, and associated conductors would introduce new vertical lines into the landscape; these elements of the proposed project would result in weak visual change. Access roads and other areas permanently cleared of vegetation would likely not be visible from KOP 6 because existing access roads in this viewshed are not discernable at middleground distances.

Development of the proposed transmission line in this view, including construction and operation, would result in no visible change in the form, line, color, or texture of the land, water body, or vegetation. Construction of the proposed project would be most visible as the transmission line crossed I-15 and could result in moderate visual impacts to motorists along I-15. Operation of the proposed transmission line in this view would result in a weak change in the form and line by introducing new vertical lines into the landscape for structures present in the existing environment. The changes to the existing environment would be consistent with the VRI Class III and VRM Class III designations assigned to these BLM-managed lands because all changes to landform, vegetation, and structures visible from this vantage point would be weak. Therefore, development of the proposed transmission line would result in a minor adverse effect, and mitigation would not be required.

KOP 7: View from Highway 95 in the Eldorado Valley

The photo in KOP 7 (Figure 3.2-14) was taken from BLM land managed as VRM Class III, but depicts views of private land in the Eldorado Valley south of Boulder City, Nevada. The BLM does not assign VRM classes to or assess visual impacts of private land. The sensitivity of this viewpoint is moderate to low: there is a high level of use, but visual resources are a low concern for most users and a low priority for public concern. The sensitivity of this viewpoint is considered low because most viewers would be travelers on Highway 95. Travelers that typically use this roadway are primarily concerned with reaching a destination as opposed to driving specifically for recreation or sightseeing, and the posted speed limit is 65 miles per hour. Additionally, there is no scenic highway designation for this roadway, and there is other development visible in the existing view including a solar generation facility and the existing Eldorado Substation and 115-kV transmission line. This viewpoint is approximately 3.5 miles from the proposed transmission line route, so the proposed project would be visible in background views. The contrast rating worksheet for this KOP is located in Appendix C.

Construction would result in short-term changes to the middleground of the existing environment of KOP 7. Construction of new access roads, decommissioning of existing transmission towers, preparation of the transmission line tower structure sites, installation of the telecommunications line, and expansion of the Eldorado Substation would result in temporary generation of fugitive dust that could be visible from KOP 7 under certain conditions. Temporary clearing of vegetation would not be visible from KOP 7. Large equipment, delivery trucks, and construction equipment

would be present during construction, and movement of such vehicles could be visible but may not hold the attention of the viewer because the viewer would likely be traveling at high speeds.

New features of the proposed project in this view include the extension of the existing yard to install two 230-kV line positions to accommodate the new double-circuit line within the existing footprint of the Eldorado Substation and taller towers to support the proposed 230-kV transmission line that would replace the existing 115-kV transmission line. Operation of the proposed project would result in long-term changes to the middleground of the existing environment of KOP 7. Long-term changes would result from the addition of LSTs, associated conductors, the telecommunications line, and expansion of the Eldorado Substation in the background; these new facilities in the background would not be discernable from KOP 7. Areas permanently cleared of vegetation for access roads and transmission line towers would not be visible in the background in middleground or background views.

Development of the proposed transmission line and the expansion of the Eldorado Substation in this view, including construction, operation, and decommissioning, would result in no visible change in the form, line, color, or texture of the landform, vegetation, or structures in the existing environment. These changes would be located within the existing footprint of the Eldorado Substation and include extension of the existing yard to install two 230-kV line positions to accommodate the new double-circuit line. Changes to the existing environment would be consistent with the VRM Class III because the minor changes to the existing substation and installation of slightly larger towers would not be discernable in background views due to the distance, short duration of views for motorists on Highway 95, and likelihood that the weak contrast in color between the proposed LSTs and the existing environment would cause the structures to recede into the background. Therefore, development of the proposed transmission line and the expansion of the Eldorado Substation would result in a negligible adverse effect, and mitigation would not be required.

KOP 8: View from the Highway 164 Overpass in the Ivanpah Valley

KOP 8 is located within and includes views of land managed as VRI Class III. The sensitivity of this viewpoint is moderate to low: there is a high level of use, but visual resources are a low concern for most users and a low priority for public concern. The sensitivity of this viewpoint is considered low because most viewers would be travelers on I-15. Travelers that typically use this roadway are primarily concerned with reaching a destination as opposed to driving specifically for recreation or sightseeing, and the posted speed limit is 70 miles per hour. Additionally, there is no scenic highway designation for this roadway. Further, existing development in and around Primm, Nevada is visible in background views. This viewpoint is located approximately 5 miles from the proposed transmission line route, so the proposed project would be visible in background views. The contrast rating worksheet for this KOP is located in Appendix C.

Construction would result in short-term changes to the background of the existing environment of KOP 8. Construction of new access roads, decommissioning of existing transmission towers, preparation of the transmission line tower structure sites, installation of the microwave tower, installation of the telecommunications line, and construction of the proposed Ivanpah Substation would result in temporary generation of fugitive dust that could be visible in KOP 8 under certain conditions. Temporary clearing of vegetation would not likely be visible from KOP 8. Large equipment, delivery trucks, and construction equipment would be present during construction, and movement of such vehicles would be visible.

Operation of the proposed project would result in long-term changes to the background of the existing environment of KOP 8. Long-term changes would result from the addition of LSTs, associated conductors, the proposed Ivanpah Substation, and vegetation clearing. The proposed Ivanpah Substation would be visible in the background of KOP 8; the LSTs, associated conductors, and telecommunications line would not be visible. The substation would introduce a new structure into the landscape that would contrast in color with the existing environment, would introduce new vertical lines, and would draw the attention of the viewer. Areas permanently cleared of vegetation for the proposed Ivanpah Substation could be visible in the background of KOP 8; permanently cleared vegetation for access roads and transmission line towers would be visible as well, drawing the attention of the viewer by introducing contrast in

color and texture. These changes would distract from views of the existing geologic formation present in the background.

Construction and operation would result in a moderate change in the color of the landform, a weak change in the line of vegetation, and a moderate contrast with existing structures in the background of KOP 8. The changes to the existing environment would be consistent with the VRI Class III designation assigned to these BLM-managed lands because the VRM Class III designation allows for moderate change. Additionally, mitigation measures AES-1, AES-2, and AES-3 would lessen the contrast that would be introduced to the existing colors in the viewshed and minimize the dominance of the substation and microwave tower within the view.

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The proposed project would result in minor adverse effects to visual resources temporarily due to construction activities and permanently due to the introduction of taller towers and new structures, including the proposed Ivanpah Substation and the microwave tower.

With respect to operational impacts associated with the permanent presence of the proposed project, of the eight KOP's evaluated, seven would conform with the established VRM or VRI classes and one would not conform (Table 3.2-1).

Table 3.2-1 Conformance with VRM or VRI Class

Key Observation Point	VRM/VRI Class	Distance	Sensitivity	Conformity Determination
KOP 1: View of the Transmission Corridor Looking Northeast toward the McCullough Mountain Range	VRM Class II and VRM Class III	Foreground and Middleground	Moderate	Does not Conform with VRM Class II
KOP 2: View from the South McCullough Wilderness Area	VRM Class II	Background	Moderate	Conforms
KOP 3: View from Interstate 15 near Jean, Nevada	VRM Class III	Seldom Seen	Low	Conforms
KOP 4: View from the Desert Oasis Apartments in Primm, Nevada	VRM Class III and VRI Class III	Foreground	Moderate to High	Conforms
KOP 5: View from Ivanpah Dry Lake, East of Interstate 15	VRM Class III	Middleground	Moderate to High	Conforms
KOP 6: View from Interstate 15 near Primm, Nevada	VRM Class III	Middleground	Low	Conforms
KOP 7: View from Highway 95 in the Eldorado Valley	VRM Class III	Background	Low	Conforms
KOP 8: View from Highway 164 Overpass in the Ivanpah Valley	VRI Class III	Background	Low	Conforms with Mitigation

In addition to the measures proposed by the applicant specifically to minimize impacts on aesthetics and visual resources (APM AES-1 through APM AES-8), additional mitigation would be required to lessen impacts on visual

resources to the greatest extent possible. Mitigation measures AES-1 and AES-2 would lessen the contrast in color and line that would be introduced by construction of the Ivanpah Substation, as shown in KOP 8.

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IMPACT AES-1: Adverse Impact to a Scenic Vista
Less than significant without mitigation

Designated scenic vistas do not occur in the proposed project area; however, the telecommunications portion of the proposed project would traverse land designated VRM Class II, which is managed to preserve visual resources. Additionally, the proposed project would be located within the vicinity of the South McCullough Wilderness Area and the Wee Thump Joshua Tree Wilderness Area, both of which are managed as VRM Class I areas. Construction of new access roads, upgrades to existing transmission towers, and installation of the telecommunications line would result in temporary generation of fugitive dust that would be visible within the VRM Class II area and from both the South McCullough Wilderness Area and the Wee Thump Joshua Tree Wilderness Area. Large equipment, delivery trucks, and construction equipment would be present during construction, and movement of such vehicles would be visible. However, impacts to visual resources due to construction would be temporary.

The telecommunications line would be strung on the existing 500-kV Eldorado–Lugo Transmission Line. This change would not be discernable as there is already an existing 500-kV transmission line in the viewshed. No change would be visible from the South McCullough Wilderness Area or the Wee Thump Joshua Tree Wilderness Area.

Because the telecommunications line would be strung on existing structures and not visibly discernable from wilderness areas, and impacts to visual resources would be limited to temporary construction activities, the proposed project would result in a less than significant impact under this criterion.

IMPACT AES-2: Substantially Degrade Existing Visual Character or Quality
Less than significant with mitigation

As discussed under the Impacts by Key Observation Point section above, the proposed project would conflict with VRM or VRI objectives for one of the eight KOPs. At KOP 1, the proposed project would introduce moderate levels of contrast with the existing structures in the viewshed by introducing linear elements of a larger scale and more prominent color. This is the only KOP that shows views of VRM Class II areas; all other KOPs show views of VRM Class III or VRI Class III areas.

Overall, the proposed project would not result in substantial degradation of the landscape. The proposed project would be consistent with VRM or VRI objectives for seven of the eight KOPs due to distance; relatively low viewer concern by many of the temporary visitors to the area; and the fact that the proposed project would replace an existing line, repeating the patterns currently visible in the landscape. There would be two new structures constructed as part of the proposed project: the Ivanpah Substation and the microwave tower. As described above in MM AES-1, the applicant would consult with the BLM to paint these structures a color that would minimize visual contrast with the surrounding landscape, reducing the level of contrast that would be introduced. MM AES-2 would further reduce contrast in color and line that would be introduced by the proposed Ivanpah Substation by requiring the applicant to stain rock disturbed by clearing and grading activities. MM AES-3 would reduce the color contrast that would be introduced by a white microwave dish or cover by requiring the applicant to consult with the BLM prior to construction to chose a BLM approved color. Additionally, the proposed project would be located in an energy corridor already crossed by numerous transmission lines. Therefore, even though the proposed project would conflict with VRM or VRI objectives for one of the eight KOPs, the proposed project would not *substantially* degrade the existing visual character or quality of the landscape and would result in a less than significant impact under this criterion.

IMPACT AES-3: Create a New Source of Light or Glare
Less than significant without mitigation

Lighting would only be installed for the proposed Ivanpah Substation. The applicant would install manually operated substation lighting, which would only be required for non-routine nighttime work. Lighting would be directed downward and shielded to eliminate off-site light spill (APM AES-8). Therefore, the proposed project would result in a less than significant impact under this criterion.

NO IMPACT. Adverse Impact to Scenic Resources within a State Scenic Highway. The proposed project does not traverse any designated or eligible state scenic highways within the proposed project area. Consequently, the proposed project would not have the potential to substantially damage scenic resources (including trees, rock outcroppings, and historic buildings) within a designated or eligible state scenic highway.

3.2.3.6 No Project / No Action Alternative

Under the No Project Alternative, the proposed project, including the transmission line, the proposed Ivanpah Substation, the telecommunications line, and all other components of the proposed project, would not be constructed. Therefore, none of the changes to the existing visual environment discussed in Section 3.2.3.5, "Proposed Project," would occur, and there would be no adverse impact to visual resources.

3.2.3.7 Transmission Alternative Route A

Regarding potential construction and operation aesthetics impacts to sensitive viewpoints, Transmission Line Alternative A is similar to the proposed project. Alternative A would be visible only from KOP 7; all other segments of this alternative would be identical to the proposed project, as discussed in Section 3.2.3.5, "Proposed Project."

Transmission Line Alternative A would be present, but not visually distinguishable from KOP 7. This alternative would follow the same route as the portion of the proposed transmission line present in this view, except for a portion in the far middleground. In the far middleground, the alternative route would continue running southwest toward the McCullough Pass instead of turning northwest to follow the existing transmission line route. This alternative would reconnect with the existing transmission line before entering the McCullough Mountain Range. These changes would result in stronger overall visual contrast where the route would veer from the existing 115-kV transmission line route than the proposed project due to the structures not paralleling existing transmission facilities. However, these changes would still be consistent with a VRM Class III designation; therefore, implementation of transmission line Alternative A and the expansion of the Eldorado Substation would result in minor adverse effects.

Impacts from this alternative would be less than significant, and mitigation would not be required.

3.2.3.8 Transmission Alternative Route B

Regarding potential construction and operation aesthetics impacts to sensitive receptors, Transmission Line Alternative B is similar to the proposed project. Alternative B would be visible only from KOP 7; all other segments of this alternative would be identical to the proposed project, as discussed in Section 3.2.3.5, "Proposed Project."

Transmission Line Alternative B would be present but not visually distinguishable from KOP 7. This alternative route would originate at the Eldorado Substation and then run north-northeast before turning southwest, reconnecting with the existing transmission line route in the far middleground of this view. These changes would result in stronger overall visual contrast where the route would veer from the existing 115-kV transmission line route than the proposed project due to the structures not paralleling existing transmission facilities. However, these changes would still be consistent with a VRM Class III designation; therefore, implementation of transmission line Alternative A and the expansion of the Eldorado Substation would result in minor adverse effects.

Impacts from this alternative would be less than significant, and mitigation would not be required.

3.2.3.9 Transmission Alternative Route C

Regarding potential construction and operation aesthetics impacts to sensitive receptors, Transmission Line Alternative C is similar to the proposed project. Alternative C would only differ from the proposed project analysis at KOPs 4, 5, and 6; all other segments of this alternative would be identical to the proposed project, as discussed in Section 3.2.3.5, "Proposed Project."

The Transmission Line Alternative C route would not be visible from KOPs 4 and 5. This alternative would re-route the proposed transmission line to the west of the town of Primm, through the Spring Mountain Range, and would run the route along the west side of the Ivanpah Lake before it reconnected with the existing transmission line route. Implementation of this route would result in removal of the existing transmission line adjacent to the Desert Oasis Apartment Complex. These changes would result in stronger overall visual contrast where the route would veer from the existing 115-kV transmission line route than the proposed project due to the structures not paralleling existing transmission facilities. However, these changes would still be consistent with a VRM Class III designation; therefore, implementation of transmission line Alternative C would result in minor adverse effect from KOPs 4 and 5 and would lessen the visual impact on residents of the Desert Oasis Apartment Complex and recreational users of the Ivanpah Dry Lake.

This alternative also would not be visible in the views from KOP 6, which represents views from I-15. However, this alternative would still cross I-15, albeit in a different location and, therefore, would not lessen visual impacts to motorists along I-15.

Impacts from this alternative would be less than significant, and mitigation would not be required.

3.2.3.10 Transmission Alternative Route D and Subalternative E

Regarding potential construction and operational impacts to sensitive viewpoints, Transmission Line Alternative D and Subalternative E are similar to the proposed project. These alternatives would only differ from the proposed project analysis at KOPs 4, 5, and 6; all other segments of these alternatives would be identical to the proposed project as discussed in Section 3.2.3.5, "Proposed Project."

Transmission Line Alternative D and Subalternative E would not be visible in the view from KOP 4. These alternatives would re-route the proposed transmission line to the east of Primm to match the footprint of an existing 500-kV transmission line. The route would cross the Ivanpah Lake before reconnecting with the existing transmission line route. Implementation of these routes would result in removal of the existing transmission line adjacent to the Desert Oasis Apartment Complex. These changes would be consistent with the VRM Class III designation for the area. Therefore, implementation of transmission line Alternatives D and E would result in no adverse effect from KOP 4 and would lessen the impacts to residents of the Desert Oasis Apartment Complex.

These alternatives would be visible from KOPs 5 and 6. These alternatives would route the transmission line closer to KOPs 5 and 6 and would result in stronger overall visual contrast due to the structures not paralleling existing transmission facilities along this alternative route; however, the increased visual contrast due to the proximity of the transmission line to the KOPs would represent only an incremental change and would not substantially change the analysis in Section 3.2.3.5, "Proposed Project." Transmission Alternative D and Subalternative E would have the same visual impact on recreational users of the Ivanpah Dry Lake and motorists along I-15 as would the proposed project. .These changes would still be consistent with a VRM Class III designation; therefore, implementation of transmission line Alternative D and Subalternative E would only result in minor adverse effects.

While these alternatives would match the footprint of an existing 500-kV transmission line which would mimic the linear pattern of that line, these alternatives would require a new ROW and therefore would result in a slight increase in visual impacts. However, impacts from this alternative would still be less than significant, and mitigation would not be required.

3.2.3.11 Telecommunication Alternative (Golf Course)

Regarding potential construction and operation aesthetics impacts to sensitive receptors, the Golf Course Alternative is similar to the proposed project. This alternative would only differ from the proposed project analysis at KOP 8; all other segments of this alternative would be identical to the proposed project as discussed in Section 3.2.3.5, "Proposed Project."

The Golf Course Alternative would consist primarily of installing the telecommunications line underground along Nipton Road for an additional 9 miles and stringing the telecommunications line along existing 33-kV distribution lines to connect with the proposed Ivanpah Substation. This alternative would result in moderate temporary impacts due to an additional segment of trenching along Nipton Road. The portion of the telecommunications line that would be strung along the existing 33-kV distribution lines would not result in a visual impact because the line would be imperceptible except at an extremely close distance.

This alternative would be installed in a new underground duct beneath the Primm Valley Golf Course. This would result in an increased visual impact to users of the Golf Course during the construction period due to trenching activities, exposure of soils, storage of construction equipment, and transportation of materials. These impacts would be temporary, and overall this alternative would only result in minor adverse visual effects.

Impacts from this alternative would be less than significant, and mitigation would not be required.

3.2.3.12 Telecommunication Alternative (Mountain Pass)

Regarding potential construction and operation aesthetics impacts to sensitive receptors, the Mountain Pass Alternative is similar to the proposed project. This alternative would only differ from the proposed project analysis at KOP 8; all other segments of this alternative would be identical to the proposed project as discussed in Section 3.2.3.5, "Proposed Project."

The Mountain Pass Alternative would consist primarily of installing the telecommunications line underground along Nipton Road for an additional 9 miles and stringing the telecommunications line along existing 33-kV distribution lines to connect with the proposed Ivanpah Substation. This alternative would result in moderate temporary impacts due to an additional segment of trenching along Nipton Road.

The segment that would be strung along existing 33-kV distribution lines would traverse an area designated VRI Class II, which has stricter objectives for visual resources than the proposed route, which would cross areas with VRI Class III designations. The segment of the telecommunications line that would be strung along the existing 33-kV distribution lines would not result in a visual impact because the line would be imperceptible except at an extremely close distance. Impacts would be limited to construction activities including stringing the telecommunication line, transporting materials, storing equipment, and possibly constructing new or upgrading existing access roads. These impacts would be temporary, and overall this alternative would only result in minor adverse visual effects.

Impacts from this alternative would be less than significant, and mitigation would not be required.

3.2.4 Mitigation Measures

The following mitigation would be required to lessen impacts on aesthetics and visual resources:

MM AES-1: Painting the Ivanpah Substation. Prior to construction, the applicant will consult with the BLM to select an appropriate color from the BLM approved palette to paint any enclosed structures that would be constructed for the Ivanpah Substation. The applicant will submit photographs following substation construction to the BLM and the CPUC to document compliance with this measure.

MM AES-2: Rock Staining near the Ivanpah Substation. For areas that are cleared and/or graded to construct the Ivanpah Substation, the applicant would consult with the BLM regarding feasible methods to treat the exposed rock to match the overall color of the adjacent weathered rock.

MM AES-3: Microwave Dish Color. Prior to construction, the color of the microwave dishes or covers must be approved by the BLM. White dishes or covers will be avoided to minimize color contrast with the existing landscape.

3.2.5 Whole of the Action/Cumulative Action

Below is a brief summary of information related to visual resources in the ISEGS Final Staff Assessment / Draft Environmental Impact Statement (FSA/DEIS) prepared by the California Energy Commission (CEC) and the BLM. This section focuses on differences in the ISEGS setting and methodology compared with the setting and methodology discussed above for the EITP. This section also discloses additional impacts or mitigation imposed by the CEC for ISEGS.

3.2.5.1 Setting

The ISEGS project would be developed on four square miles of BLM land west of I-15 and the northern half of the Ivanpah Dry Lake bed, east of the foot of the Clark Mountains. The ISEGS site consists of primarily bajada scrub with minimal surface disturbance. There is a vivid 416-foot rock formation at the center of the proposed site. The ISEGS project site would be collocated with the proposed Ivanpah Substation site. The existing visual character of this location and the potentially affected viewer groups are described in greater detail in Section 3.2.1.2, "Ivanpah and Eldorado Substations."

BLM and CEC staff determined that the Ivanpah Valley floor has moderate overall visual sensitivity (with moderate existing visual quality, moderately high viewer concern, and high viewer exposure), which was determined to be generally consistent with a Visual Resource Inventory (VRI) Class III assigned by the BLM for the area.

Key Observation Points

The BLM and the CEC selected KOPs that represent typical views of project components and views from sensitive locations. For the visual resources analysis in the ISEGS document, BLM and CEC staff selected the following 10 KOPs:

- KOP 1: View from Primm Valley Golf Course
- KOP 2: Second View from Primm Valley Golf Course
- KOP 3: View of Ivanpah 2 and 3 from I-15 near Yates Well Road (middleground-distance viewpoint)
- KOP 4: View of Ivanpah 1 from I-15 near Yates Well Road (middleground-distance viewpoint)
- KOP 5: View from I-15 at Nipton Road (background-distance viewpoint)
- KOP 6: View from the east side of Ivanpah Dry Lake
- KOP 7: View from the west side of Ivanpah Dry Lake

- KOP 8: View from Primm, Nevada
- KOP 9: View from the Umberci Mine in the Stateline Wilderness Area
- KOP 10: View from the Mojave National Preserve near the Benson Mine

A map showing these points in relation to the proposed ISEGS project, photos from these locations, and a description of the visual character of these views are included in the ISEGS FSA/DEIS.

Applicable Laws, Regulations, and Standards

The ISEGS project is subject to the same federal, State of California, and San Bernardino County laws, regulations and standards as EITP, as discussed in Section 3.2.2, "Applicable Laws, Regulations, and Standards."

3.2.5.2 Methodology

The analysis of impacts to visual resources for the ISEGS FSA/DEIS was conducted using the methods typically used by the CEC to assess impacts to visual resources; CEC and BLM stated that this method and the findings that resulted from this analysis were essentially consistent with findings that would be obtained using the BLM VRM methodology as described in Section 3.2.3.3, "Methodology." Ratings of visual sensitivity and the visual contrast that would be introduced by the proposed project were made based on field observation, photo documentation, and review of applicant-prepared simulations and project information.

Staff considered whether there would be a significant impact under NEPA using the following criteria:

- Significant impacts to visual resources are analyzed in terms of context and intensity (40 CFR 1508.27). Context considers the affected region and interest in and use of the region, among other factors. Intensity refers to the severity of the impact; for the analysis of impacts to visual resources, relevant factors include "unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands…," degree of controversy, degree of uncertainty about possible effects, degree to which an action may establish a precedent for future actions, and potential for cumulatively significant impacts.

Staff considered whether there would be a significant impact under CEQA using the following criteria:

- Would the project have a substantial adverse effect on a scenic vista?
- Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway?
- Would the project substantially degrade the existing visual character or quality of the site and its surroundings?
- Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Staff additionally considered whether the project would violate any local laws, ordinances, or regulations related to visual resources, including light and glare.

3.2.5.3 Impacts

The CEC and the BLM have published the impacts described below related to visual resources for the ISEGS project.

Construction

It is estimated that project construction would take place over a 48-month period. Impacts to visual resources during the construction phase of the ISEGS project would result from construction parking and laydown areas, including temporary fabrication buildings; exposed soils due to grading of the 4-square-mile project site; fugitive dust from grading and other construction-related activities; and nighttime construction lighting. These activities would create a strong degree of visual change from vantage points along I-15, in the Clark Mountains, and from the Mojave National Preserve.

To address fugitive dust concerns, the BLM and CEC staff recommends Conditions of Certification AQ-SC3, AQ-SC4, and AQ0SC7 as well as SOIL&WATER-1, which would reduce impacts to visual resources from fugitive dust to less than significant levels. To address potential light pollution impacts, staff recommend Condition of Certification VIS-4 (described in Section 3.2.5.4, "Mitigation Measures"), which would reduce impacts due to nighttime construction to less than significant. To address long-term impacts due to grading of the site, staff recommends Condition of Certification BIO-14, referenced in Condition of Certification VIS-3 (described in Section 3.2.5.4, "Conditions of Certification/Mitigation Measures" below), which requires the revegetation of all disturbed soil surfaces.

Operation (as seen from Key Observation Points)

As noted in Section 3.2.5.1, "Setting," BLM and CEC staff determined that the Ivanpah Valley floor has moderate overall visual sensitivity (with moderate existing visual quality, moderately high viewer concern, and high viewer exposure), which is generally consistent with VRI Class III. The BLM and CEC determined that the ISEGS project would result in potentially substantial adverse impacts to existing scenic resources from six of the 10 KOPs, as described below.

KOPs 1-2: View from Primm Valley Golf Course

From these vantage points, the ISEGS project would create a strong level of contrast by introducing a strong vertical line and form, the effect of which would be amplified by reflected sunlight; a textural contrast with the existing character of the desert scrub landscape; and contrast in hue and brightness with the existing undisturbed soil surfaces. Additionally, the ISEGS project would exhibit strong special and scale dominance. The ISEGS document concludes that while the strong level of visual change from this vantage point would result in a potentially significant impact given the moderate overall sensitivity of the Ivanpah Valley, implementation of Conditions of Certification VIS-1 and VIS-2 (described in Section 3.2.5.4, "Mitigation Measures") would mitigate the impact to less than significant levels.

KOPs 3-4: Middleground-distance viewpoints on I-15

From these vantage points, the ISEGS project would introduce a strong vertical line and form, which would create a strong level of visual contrast that would be amplified by reflected sunlight. Additionally, the vast scale and visual magnitude of the mirrors would create a strong textural contrast with the existing character of the desert scrub landscape, and visible areas of disturbed soil could create a strong contrast with the hues and brightness of the existing undisturbed soil surface. BLM and CEC staff stated that implementation of Condition of Certification VIS-1 would lessen the impact to visual resources from KOPs 3 and 4, but would not fully address the level of contrast that would be introduced by the ISEGS project.

KOP 9: View from the Umberci Mine in the Stateline Wilderness Area

From this vantage point, the ISEGS project would introduce strong contrast in form, line, color, and texture. Due to the relative proximity of the project and the elevated angle of the view, the scale and spatial dominance of the project would be high, and the bright solar receivers would obstruct views of the Clark Mountains to a moderate to strong degree. The strong degree of visual contrast that would be introduced by ISEGS at this KOP would not be compatible with the moderate overall visual sensitivity of the Ivanpah Valley or the high overall sensitivity of the Stateline Wilderness area. Therefore, there would be a significant adverse impact to visual resources from this viewpoint even with the incorporation of mitigation.

KOP 10: View from the Mojave National Preserve near the Benson Mine

From this vantage point, the ISEGS project would introduce strong contrast in form, line, color, and texture. From the elevated viewpoint, the mirror arrays would be a dominant feature in the view and would produce nuisance glare at various periods throughout the day. The strong level of contrast that would be introduced by the ISEGS project from this vantage point would not be compatible with the overall moderate visual sensitivity of the Ivanpah Valley and would disrupt scenic views from the Mojave National Preserve. Therefore, there would be a significant adverse impact to visual resources from this viewpoint even with the incorporation of mitigation.

The BLM and the CEC staff determined that the project would not result in a substantial adverse impact to existing scenic resources from four of the 10 KOPs, as described below.

KOP 5: Background-distance viewpoint on I-15
From this vantage point, the ISEGS project would introduce a moderate level of visual contrast and project dominance would be moderate (or co-dominant). Impacts to visual resources from this KOP would be less than significant because moderate visual contrast would be consistent with the site's moderate overall sensitivity. However, staff notes that the degree of contrast would increase as motorists travel toward the project site, increasing the level of visual contrast from middleground distances and resulting in potentially significant impacts to visual resources.

KOP 6: View from the east side of the Ivanpah Dry Lake
From this vantage point, the overall visual change introduced by the ISEGS project would be weak to moderate, due to the distance and the low, oblique viewing angle. This level of visual change would be compatible with the overall moderate visual sensitivity of the project area, and therefore impacts to visual resources from this viewpoint would be less than significant without mitigation.

KOP 7: View from the west side of Ivanpah Dry Lake
From this vantage point, the ISEGS project would introduce weak to moderate levels of overall visual change due to the distance and the low, oblique viewing angle. These would be compatible with the moderate overall visual sensitivity of the project area; therefore, impacts to visual resources from this viewpoint would be less than significant without mitigation.

KOP 8: View from Primm, Nevada
From this vantage point, viewer exposure and orientation to the ISEGS project site would be limited. Visual quality at this location is relatively low due to development in Primm. Due to the oblique angle and distance, overall visual change from this vantage point would be weak to moderate, and would be compatible with the moderate overall visual sensitivity of the Ivanpah Valley. Impacts would be less than significant without mitigation.

CEQA Impact Discussion

The BLM and CEC staff additionally determined that the ISEGS project would result in significant impacts to visual resources under the four CEQA criteria listed above in Section 3.2.5.2, "Methodology." Impacts to scenic vistas, to scenic highways, to the existing visual character of the project area, and due to light and glare are summarized below.

Scenic Vistas

There are no designated scenic vistas in the ISEGS project area; however, given the high scenic quality and high levels of recreational use, for the purpose of the analysis, the CEC and the BLM staff considered viewpoints within the Clark Mountains in the Stateline Wilderness Area (KOP 9) and viewpoints within the Mojave National Preserve (KOP 10) equivalent to designated scenic vistas. Additionally, CEC and BLM staff stated that views of the Clark Mountains from I-15 could be considered a designated scenic vista in light of the county scenic highway designation for I-15.

As described above for KOPs 9 and 10, which represent views from the State Wilderness Area and the Mojave National Preserve, respectively, the ISEGS FSA/DEIS concluded that the project would alter panoramic views of the Ivanpah Valley from mostly undisturbed desert scrub landscape to views of industrial development dominated by expansive mirror arrays, 459-foot-tall solar collector towers, substantial grading, and associated project components and equipment. BLM and CEC staff concluded that the resulting visual change would constitute a substantial adverse visual effect.

Views from the I-15 corridor would not be substantially obstructed by the ISEGS project, but glare from the project could strongly alter the character of these views.

State Scenic Highways

There are no eligible or designated State Scenic Highways within the ISEGS project area. The project would be located adjacent to I-15, immediately adjacent to a prominent rock outcropping that is a landmark for viewers in the area. The ISEGS FSA/DEIS states that the project would not directly damage the rock outcropping, but would dramatically alter its visual setting.

Existing Visual Character

The BLM and CEC staff determined that the Ivanpah Valley floor has moderate overall visual sensitivity (with moderate existing visual quality, moderately high viewer concern and high viewer exposure), which is generally consistent with VRI Class III. Impacts of the ISEGS project to visual character from the 10 KOPs are described above. Impacts to visual resources from six of the 10 KOPs would be significant and adverse even with implementation of Conditions of Certification VIS-1 through VIS-4.

Light and Glare

Glare is considered a major issue of concern for the ISEGS project and is analyzed as a safety concern in the Traffic and Transportation section of the FSA/DEIS. In that section, the BLM and CEC staff recommended Conditions of Certification TRANS-3 and TRANS-4 to lessen the effects of glare. The FSA/DEIS visual analysis concludes that even with the incorporation of these conditions, glare from the ISEGS project would dominate the view, would alter the character of the view, and could detract from the public's ability to enjoy views.

Additionally, light pollution from nighttime construction and permanent FAA-required safety lighting would impact night sky views, particularly from the Mojave National Preserve. BLM and CEC staff recommended Condition of Certification VIS-4, which would require that lighting be shielded and directed downward (with the exception of FAA-required safety lighting) and would mitigate the impact to night sky views from the Mojave National Preserve to less than significant levels.

Compliance with Local Laws, Ordinances, and Regulations

The BLM and CEC staff concluded that the project would not comply with three applicable goals and policies of San Bernardino County as stated in the San Bernardino County General Plan Conservation and Open Space Element. The goals and policies with which the ISEGS project would conflict are:

- Conservation Element Goal D/CO 1, which calls for preservation of the unique environmental features and natural resources of the Desert Region, including scenic vistas
- Open Space Element Goal OS 5 and Policy OS 5.2, which states that the county will maintain and enhance the visual quality of county scenic routes and requires that development along scenic routes demonstrate compatibility with existing scenic resources through a visual analysis

Closure and Decommissioning

When ISEGS is no longer in use, the applicant will decommission the project as outlines in the Draft Closure, Revegetation, and Rehabilitation Plan. Original contours will be restored and the site will be revegetated; however, given the difficulty of revegetating in an arid region and given the prominent color contrast between graded, disturbed soils and undisturbed soils in the vicinity, decommissioning of the project and visual recovery would likely occur over a long period of time.

3.2.5.4 Conditions of Certification/Mitigation Measures

The ISEGS FSA/DEIS recommends that the following Conditions of Certification be required by the CEC and the BLM to lessen impacts to noise if the project is approved:

VIS-1. The project owner will treat the surfaces of all project structures and buildings visible to the public such that (a) their colors minimize visual intrusion and contrast by blending with the existing tan and brown color of the surrounding landscape, (b) their colors and finishing do not create excessive glare, and (c) their colors and finishes are consistent with local policies and ordinances. The transmission line conductors will be non-specular and non-reflective, and the insulators will be non-reflective and non-refractive.

This mitigation measure also outlines the verification process to ensure that the measure is followed and to document its success.

VIS-2. At the request of and in consultation with BLM's Authorized Officer, the CEC's Compliance Project Manager (CPM), and the golf course owner, the project owner will prepare a perimeter landscape screening plan to reduce the visibility of the proposed ISEGS project as seen from the golf course. The intent of the plan will be to provide screening of the power project, particularly the mirror fields, while retaining as much of the scenic portion of the overall views of Ivanpah Valley and Clark Mountains as feasible. The design approach will be developed with prior consultation with the golf course owner, and implemented only at the golf course owner's request. The project owner will submit to BLM's Authorized Officer and CPM for review and approval, and simultaneously to the golf course owner for review and comment, a preliminary conceptual landscaping plan whose objective is to provide an attractive visual screen to views of the ISEGS project mirror fields. Upon approval by BLM's Authorized Officer, the CPM, and the golf course owner, the project owner will submit to BLM's Authorized Officer and the CPM for review and approval, and simultaneously to the golf course owner for review and comment, a landscaping plan the proper implementation of which will satisfy these requirements. The plan will include:

A. A detailed landscape, grading, and irrigation plan, at a reasonable scale. The plan will demonstrate how the requirements stated above will be met. The plan will provide a detailed installation schedule demonstrating installation of as much of the landscaping as early in the construction process as is feasible in coordination with project construction.

B. A list (prepared by a qualified professional arborist familiar with local growing conditions) of proposed species, specifying installation sizes, growth rates, expected time to maturity, expected size at five years and at maturity, spacing, number, availability, and a discussion of the suitability of the plants for the site conditions and mitigation objectives, with the objective of providing the widest possible range of species from which to choose.

C. Maintenance procedures, including any needed irrigation and a plan for routine annual or semi-annual debris removal for the life of the project.

D. A procedure for monitoring for and replacement of unsuccessful planting for the life of the project.

E. One set each for BLM's Authorized Officer and the CPM of 11-inch-by-17-inch color photo simulations of the proposed landscaping at five years and 20 years after planting, as viewed from adjoining segments of I-15.

This plan will not be implemented until the project owner receives final approval from BLM's Authorized Officer and the CPM.

This mitigation measure also outlines the verification process to ensure that the measure is followed and to document its success.

VIS-3. The project owner will revegetate disturbed soil areas to the greatest practical extent, as described in Condition of Certification BIO-14. To address specifically visual concerns, the required Closure, Revegetation, and Rehabilitation Plan will include reclamation of the area of disturbed soils used for laydown, project construction, and siting of the substation and other ancillary operation and support structures.

For verification of this measure, the ISEGS document refers to Certificate of Certification BIO-14.

VIS-4. To the extent feasible, consistent with safety and security considerations, the project owner will design and install all permanent exterior lighting and all temporary construction lighting such that (a) lamps and reflectors are not visible from beyond the project site, (b) lighting does not cause excessive reflected glare, (c) direct lighting does not illuminate the nighttime sky, except for required FAA aircraft safety lighting, (d) illumination of the project and its immediate vicinity is minimized, and (e) the plan complies with local policies and ordinances. The project owner will submit to BLM's Authorized Officer and the CPM for review and approval, and simultaneously to the County of San Bernardino for review and comment, a lighting mitigation plan that includes the following:

A. Location and direction of light fixtures will take the lighting mitigation requirements into account.

B. Lighting design will consider setbacks of the project features from the site boundary to aid in satisfying the lighting mitigation requirements.

C. Lighting will incorporate fixture hoods/shielding, with light directed downward or toward the area to be illuminated.

D. Light fixtures that are visible from beyond the project boundary will have cutoff angles that are sufficient to prevent lamps and reflectors from being visible beyond the project boundary, except where necessary for security.

E. All lighting will be of minimum necessary brightness consistent with operation safety and security.

F. Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) will have (in addition to hoods) switches, time switches, or motion detectors so that the lights operate only when the area is occupied.

This mitigation measure also outlines the verification process to ensure that the measure is followed and to document its success.

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