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May 31, 2017

Via Email

Mr. Christopher A. Lawrence
Office of Electricity Delivery and Energy Reliability (OE-20)
U.S. Department of Energy
1000 Independence Avenue, S.W.
Room 6H-05
Washington, DC 20585

Re: Nogales Transmission, L.L.C. – Nogales Interconnection Project – PP 420 Application Amendment

Dear Mr. Lawrence:

This letter amends the April 8, 2016, Application for a Presidential Permit for the Nogales Interconnection Project (the "Project").

I. OVERVIEW

This amendment reflects an electrical reconfiguration that has been designed to make the Project more cost-effective. Conceptually, the new configuration connects the Project to the UNS Electric ("UNSE") system at the planned Gateway Substation ("Gateway") rather than, as originally proposed, at the existing Valencia Substation ("Valencia"). As discussed in more detail below, that connection will be accomplished by severing the existing UNSE Vail to Valencia 138-kV line and connecting it to one circuit of a new double-circuit 138-kV line, to be constructed and owned by UNSE, with an origination point near Valencia and a termination point at Gateway. A second circuit on that line will originate at Gateway and terminate at an existing UNSE line near Valencia; that circuit will serve as the source for Valencia. These changes are illustrated conceptually on Attachment 1, and the specific changes are detailed below. The reconfiguration does not change the proposed Project route or right-of-way requirements set forth in the Application, and as compared to the original configuration would have equal or better reliability.

The reason for the reconfiguration is that a detailed engineering analysis conducted by UNSE as part of the Project interconnection study determined that UNSE would avoid approximately $11 million in costs if the Project connected to its transmission system from Gateway rather than Valencia. Specifically, the engineering analysis determined that Valencia could not accommodate an additional circuit, and connecting the Project there would require a complete rebuild of Valencia on a larger footprint. The cost for this rebuild would be

approximately $15 million. In contrast, terminating the existing UNSE transmission line at Gateway would require additional facilities that would cost approximately $4 million but would avoid the need for a rebuild of Valencia. The proposed reconfiguration will not reduce reliability.

This amendment contains the following attachments:

1. A conceptual diagram of the reconfiguration.

2. A map illustrating the reconfiguration.

3. A one-line electrical diagram of the reconfiguration.

4. A summary of the specific changes for each Alternative Route.

5. Conceptual arrangement of towers.

II. DETAILED DESCRIPTION OF NEW CONFIGURATION

The reconfiguration would connect the Project to the UNSE transmission system at Gateway rather than at Valencia. A new, approximately 3-mile long, overhead double-circuit 138-kilovolt (kV) alternating current (AC) transmission line would be constructed on new double-circuit monopoles. The first circuit will originate at an existing pole 1,900 feet west of the existing Valencia Substation and terminate at the new Gateway Substation. At the origination point, the existing Vail to Valencia line will be severed and connected to this new line, thereby converting the existing Vail to Valencia transmission line to the "Vail to Gateway" transmission line. The second circuit will originate at the Gateway Substation and proceed in an easterly direction to a pole 1,900 feet west of the existing Valencia Substation, where it will connect with the existing portion of the UNSE 138-kV transmission line that travels east along the north side of W. White Park Drive to the Valencia Substation. This circuit will constitute the new "Gateway to Valencia" transmission line. The reconfiguration is shown on a map at Attachment 2, and a one-line diagram of the reconfiguration is provided at Attachment 3.

A. Substation changes.

Under the new configuration, there will be only minor modifications relating to relaying equipment at the existing UNSE Valencia Substation; those modifications are necessary to accommodate the connection from the proposed 138-kV transmission line from Gateway to Valencia. Because the UNSE transmission line will now terminate at Gateway, in addition to the Gateway Substation envisioned in the original Application, a new approximately 1.8-acre UNSE 138-kV Gateway Substation will be constructed on the eastern edge of the Gateway site. This substation will consist of a three-bay, breaker and a half, open-air configuration that will accommodate the line from Vail, the line to Valencia, the connection to the DC converter and a future UNSE distribution transformer.

B. Conductor and tower changes.

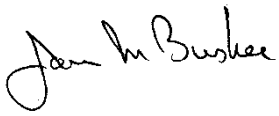
The reconfiguration will not affect the location of the alternative route segments or right-of-way width, but there will be certain changes in the conductors and towers. Under the reconfiguration, route segment 1 would utilize an existing single-circuit 138-kV line on existing double-circuit capable structures. Route segments 2 – 5 and 9 would utilize 138-kV double-circuit line on double-circuit capable structures. Route segment 6 would utilize a triple-circuit transmission line configuration on a single tower with dual circuit 138 kV and a single circuit 230 kV. Route segment 7 would utilize double-circuit 138-kV transmission line on one side of the Mariposa Ranch Road and one 230-kV circuit line on double-circuit capable structures on the opposite side of Mariposa Ranch Road. Route segment 10 would utilize one double-circuit 138-kV transmission line and one 230-kV single-circuit on double-circuit capable structures in the same corridor. A comparison of the original configuration and the reconfiguration for each of the four alternative routes is provided in Attachment 4.

There would be changes to the tower configuration for route segments 6, 7 and 10. As noted above, route segment 6 would utilize a triple-circuit transmission line configuration, and route segments 7 and 10 would utilize double-circuit 138-kV transmission line and one 230-kV single-circuit on double-circuit capable structures in the same corridor. A conceptual arrangement for those tower configurations is provided at Attachment 5.

III. CONCLUSION

The April 8, 2016, Application for a Presidential Permit for the Nogales Interconnection Project is hereby amended to include the above-described electrical configuration. Please do not hesitate to contact me if you have questions or need additional information.

Respectfully,

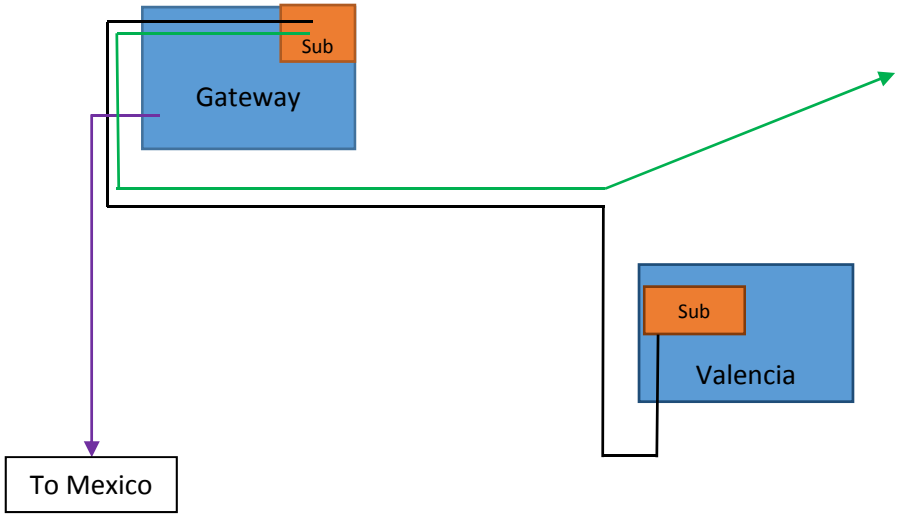


James M. Bushee
Daniel E. Frank
Attorneys for Nogales Transmission, L.L.C. and Nogales Frontier Operations, L.L.C.

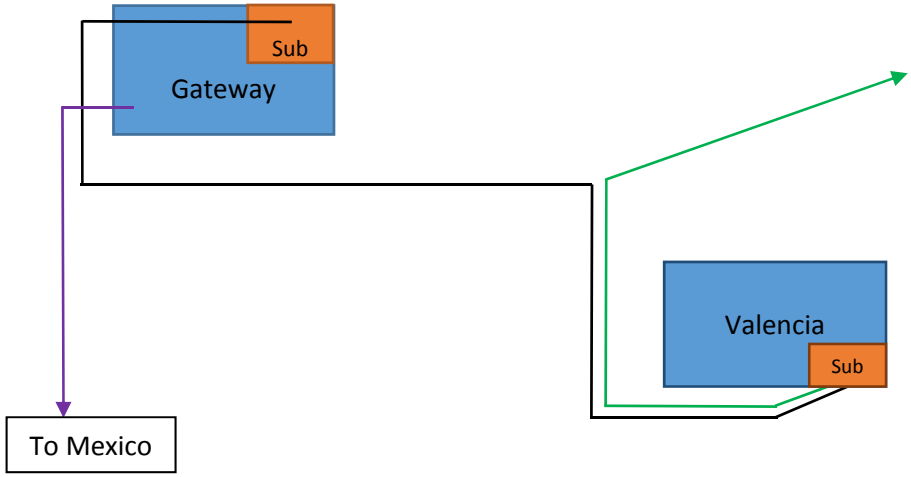
Attachment 1

Project Configuration Diagrams

Project Configuration Diagrams



Option 1 – Revised Plan



Option 2 – Original Plan

Attachment 2

Map Illustrating the Reconfiguration

OPTION 3
MAY, 2017
NOGALES INTERCONNECTION

PROPOSED GATEWAY SUBSTATION

VALENCIA SUBSTATION

- Origination Point
- Substation Site
- 230 kV Route Alternative
- 138 kV Double Circuit Route Alternative
- Existing UniSource Energy Services Vail to Valencia 138 kV
- Access Road
- International Border
- Interstate / US / State Highway
- Other Road
- Coronado National Forest

NOTES:
1. N. TARGET RANGE RD IS A PUBLIC ROAD AND CAN BE SURVEYED.
2. EXISTING EASEMENTS CAN BE SURVEYED BY RIGHT OF EASEMENT.

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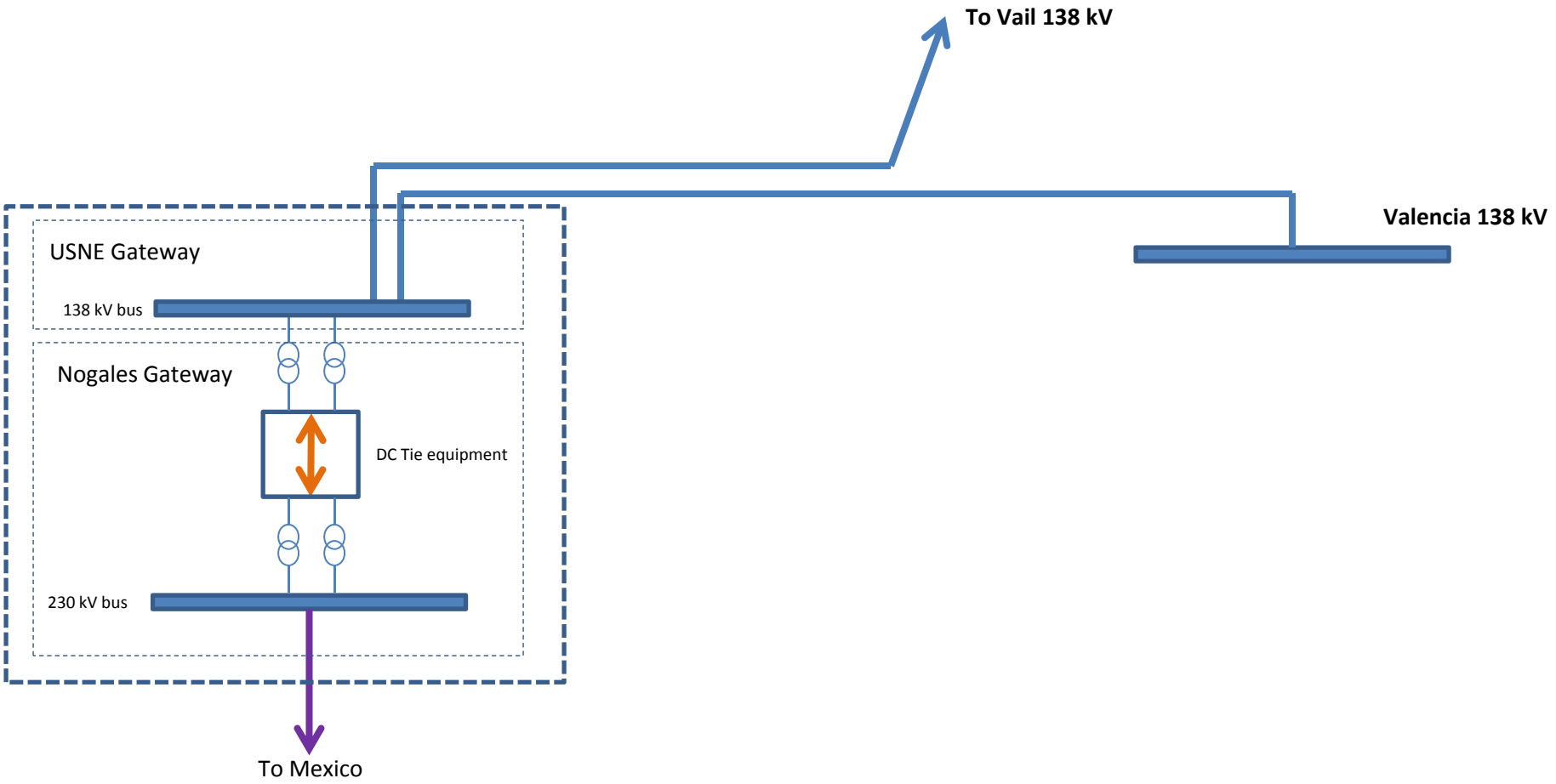
PATH: \\MSPE-GIS-FILE\GISPROJ\HUNT\244842\MAP_DOCS\DRAFT\DOE\OPTION3_11X17LMXD - USER: STUOHEY - DATE: 5/31/2017

Attachment 3

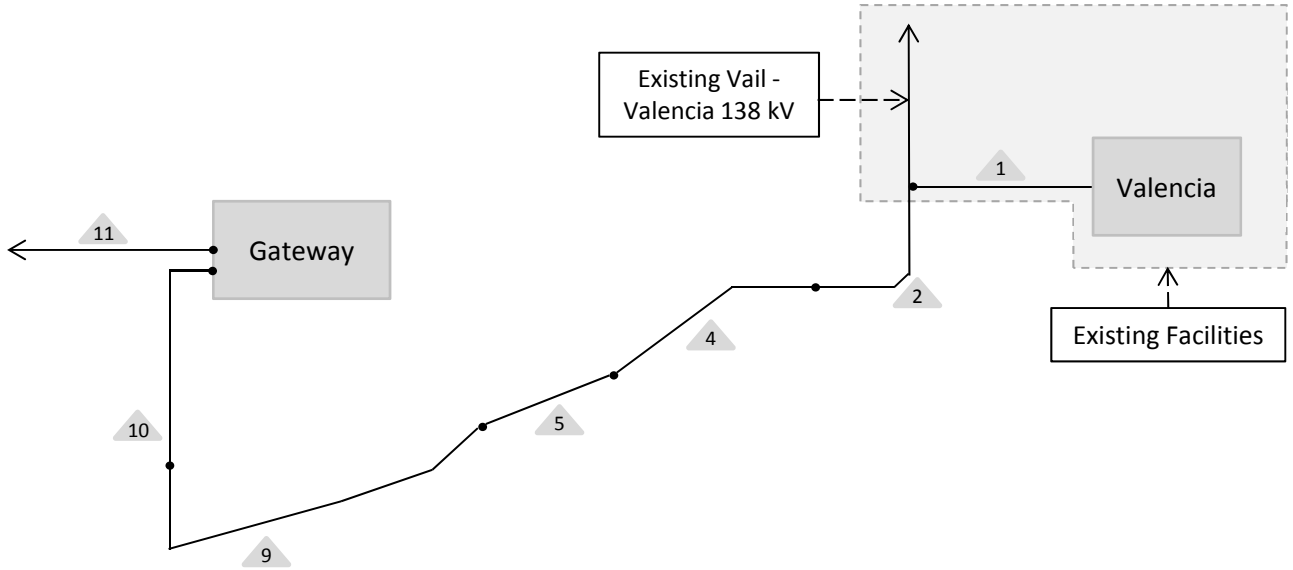
Project One-Line Diagram


To Vail 138 kV
Valencia 138 kV
USNE Gateway
138 kV bus
Nogales Gateway
DC Tie equipment
230 kV bus
To Mexico

Attachment 4

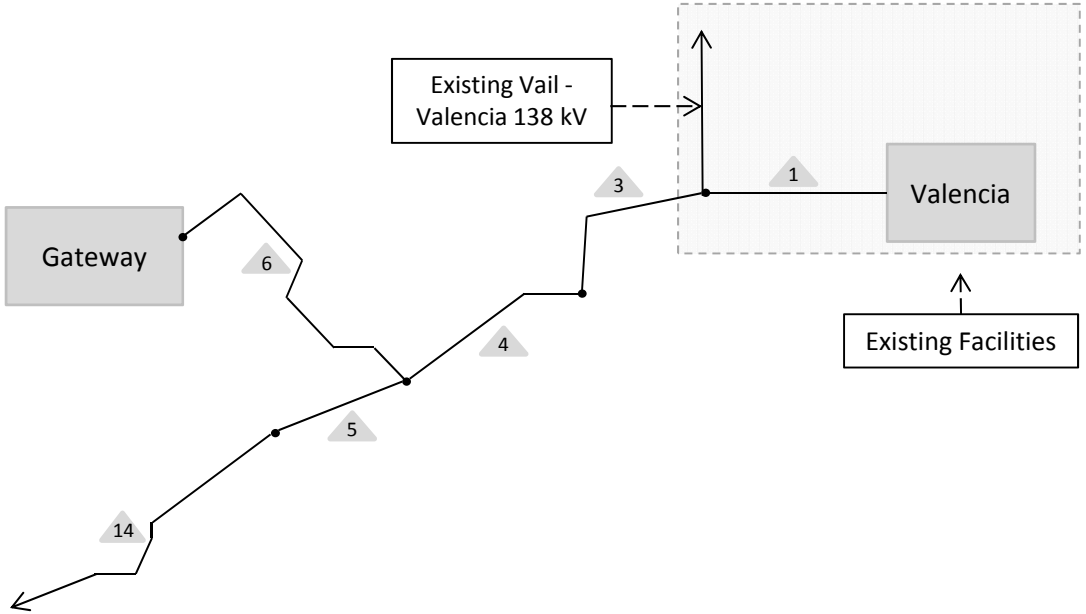
Summary of Specific Changes for Each Alternative Route

Alternative 1 – Original vs Alternate Configuration



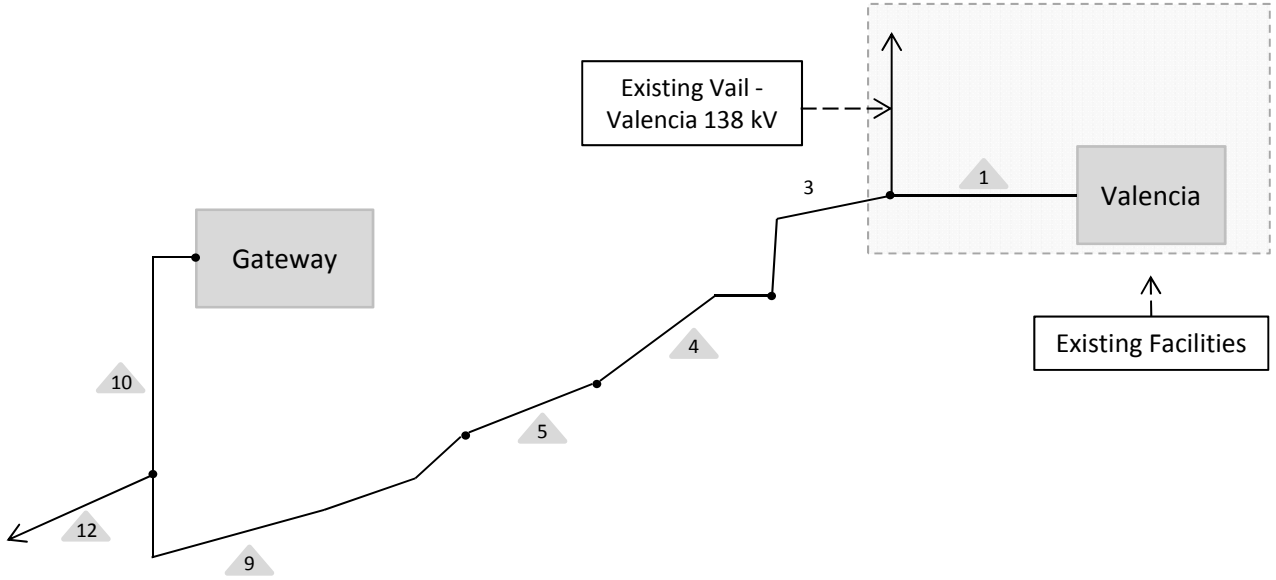
Segment	Original Configuration	Alternate Configuration
Valencia	Rebuild required	No rebuild required
1	Double-circuit 138kV on existing double-circuit poles	Single-circuit 138kV on existing double-circuit poles
2/4/5/9/10	Single-circuit 138kV on double-circuit poles	Double-circuit 138kV on double-circuit poles. Adding a second circuit does not impact pole height.
11/13/15	Single-circuit 230kV on double-circuit poles	No change
Gateway	Expansion and buildout	Same, with incremental 138kV facilities
ROW Width	150'	No change
ROW length	Approximately 5.8 miles	No change
Access Roads	3.08 miles of Access Type A and 0.24 mile of Access Type B, and require the upgrade of 3.22 miles of Access Type C roads. Additionally, 2.27 miles of Access Type D and 0.49 mile of Access Type E roads would be constructed.	No change

Alternative 2 – Original vs Alternate Configuration



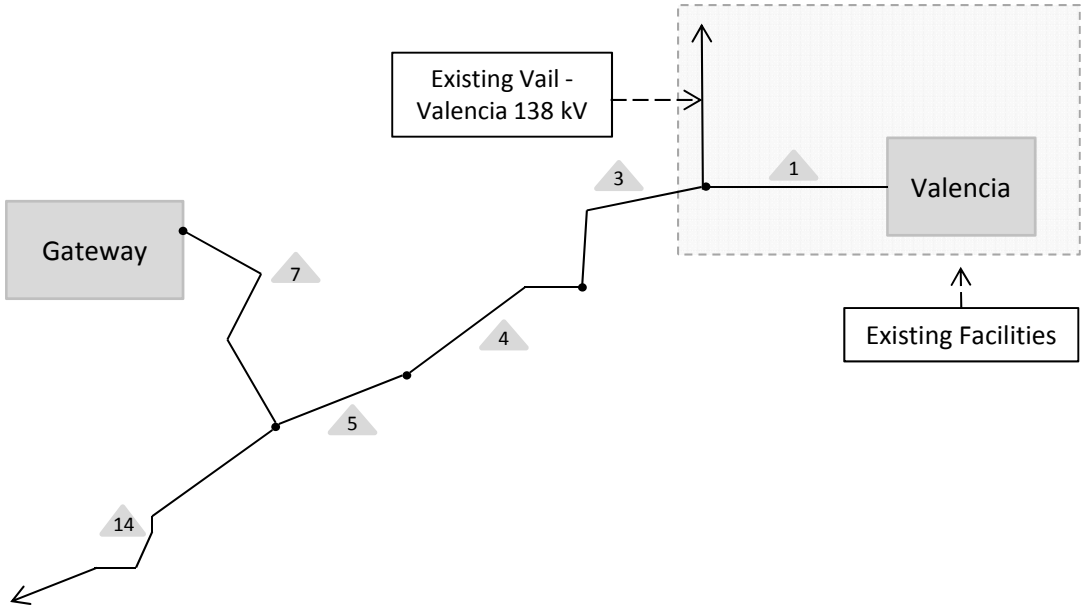
Segment	Original Configuration	Alternative Configuration
Valencia	Rebuild required	No rebuild required
1	Double-circuit 138kV on existing double-circuit poles	Single-circuit 138kV on existing double-circuit poles
3/4	Single-circuit 138kV on double-circuit poles	Double-circuit 138kV on double-circuit poles. Adding a second circuit does not impact pole height.
6	One circuit 230kV, one circuit 138kV on double-circuit poles; Seven poles with an average height of ~115 feet.	One circuit 230kV, two circuits 138kV on triple-circuit capable poles; Seven poles with an average height of ~140 feet.
5/14/15	Single-circuit 230kV on double-circuit poles	No change
Gateway	Expansion and buildout	Same, with incremental 138kV facilities
ROW Width	150'	No change
ROW length	Approximately 4.9 miles	No change
Access Roads	1.57 miles of Access Type A and 0.86 miles of Access Type B, and require the upgrade of 1.60 miles of Access Type C roads. Additionally, 2.00 miles of Access Type D and 0.38 mile of Access Type E roads would be constructed.	No change

Alternative 3 – Original vs Alternate Configuration



Segment	Original Configuration	Alternative Configuration
Valencia	Rebuild required	No rebuild required
1	Double-circuit 138kV on existing double-circuit poles	Single-circuit 138kV on existing double-circuit poles
3/4/5/9	Single-circuit 138kV on double-circuit poles	Double-circuit 138kV on double-circuit poles. Adding a second circuit does not impact pole height.
10	One circuit 230kV, one circuit 138kV on double-circuit poles; Five poles with an average height of ~110 feet.	Single-circuit 230kV on double-circuit poles, double-circuit 138kV on double-circuit poles; Twelve poles with an average height of ~100 feet.
12/13/15	Single-circuit 230kV on double-circuit poles	No change
Gateway	Expansion and buildout	Same, with incremental 138kV facilities
ROW Width	150'	No change
ROW length	Approximately 5.1 miles	No change
Access Roads	2.23 miles of Access Type A and 0.76 miles of Access Type B, and require the upgrade of 2.60 miles of Access Type C roads. Additionally, 1.97 miles of Access Type D and 0.26 mile of Access Type E roads would be constructed.	Same, with incremental 0.3 miles of Type E roads (spur roads).

Alternative 4 – Original vs Alternate Configuration

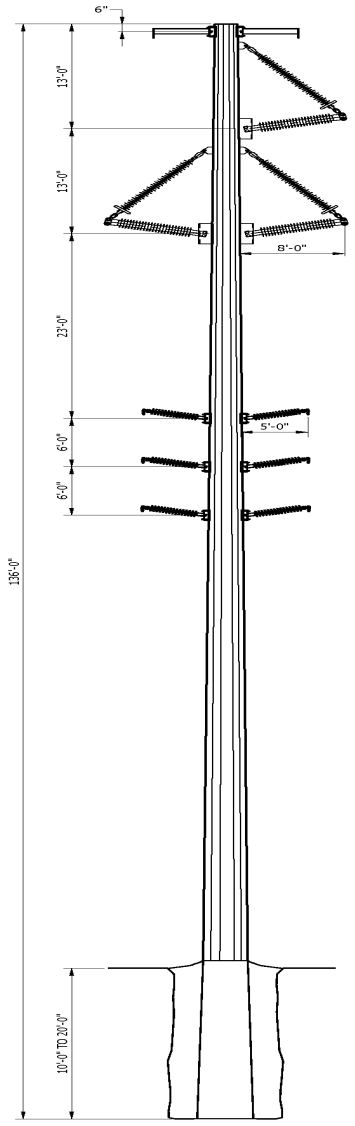


Segment	Original Configuration	Alternative Configuration
Valencia	Rebuild required	No rebuild required
1	Double-circuit 138kV on existing double-circuit poles	Single-circuit 138kV on existing double-circuit poles
3/4/5	Single-circuit 138kV on double-circuit poles	Double-circuit 138kV on double-circuit poles. Adding a second circuit does not impact pole height.
7	One circuit 230kV, one circuit 138kV on double-circuit poles; Five poles with an average height of ~115 feet.	Double-circuit 138kV line on double-circuit poles on one side of Mariposa Ranch Road and one 230 kV circuit line on double-circuit capable structures on the opposite side of Mariposa Ranch Road. Ten poles with an average height of ~105 feet.
14/15	Single-circuit 230kV on double-circuit poles	No change
Gateway	Expansion and buildout	Same, with incremental 138kV facilities
ROW Width	150'	No change
ROW length	Approximately 4.6 miles	No change
Access Roads	1.60 miles of Access Type A and 1.15 miles of Access Type B, and require the upgrade of 1.26 miles of Access Type C roads. Additionally, 2.04 miles of Access Type D and 0.26 mile of Access Type E roads would be constructed.	Same, with incremental 0.4 miles of Type E roads (spur roads).

Attachment 5

Typical Tower Arrangement Diagrams

Relevant for Alternative 2: Typical Arrangement of triple circuit capable poles within 150’ ROW, Segment 6



Relevant for Alternative 3: Typical Arrangement of 138 kV and 230 kV poles within 150’ ROW, Segment 10