

**SDG&E 3/17/10 Response**  
**A.09-08-003 East County Substation (ECO) PTC**  
**Energy Division Data Request 1 Dated March 3, 2010**  
**SDGE-ED-003: Q1-2**

**Question 1:**

**Alternative Boulevard Substation Location near Tule Wind Project**

1. Please provide the following data associated with the alternative site for the rebuild of the Boulevard substation at the location indicated on the attached map.
  - Impact on existing distribution facilities in the area, need for new construction including need for new crossings of Hwy 8.
  - Impact of new location on the proposed 138kV line from ECO substation, including need for new crossings of Hwy 8.
  - How would SDG&E propose to connect the new site with the 60kV back up line to Crestwood?
  - Please discuss other impacts (positive and negative) that may arise from rebuilding the Boulevard substation at the alternate site.

**SDGE Response to Q1:**

- Impact on existing distribution facilities in the area, need for new construction including need for new crossings of Hwy 8.

If Boulevard Substation was to be rebuilt at the alternate site, distribution facilities would need to be underbuilt (two 12kV circuits) on the SDG&E transmission system that would need to be routed to the alternate site, or be built on a separate distribution pole line from the area of the existing Boulevard Substation to the alternate site. This would lengthen each of the distribution circuits approximately four miles, which would increase the exposure for a distribution circuit outage. In addition, locating Boulevard Substation at the alternate substation site would require distribution circuits to cross Interstate 8, or the re-conductor of existing overhead distribution lines that cross Interstate 8.

- Impact of new location on the proposed 138kV line from ECO substation, including need for new crossings of Hwy 8.

If Boulevard Substation was rebuilt at the alternative site indicated on the map that was provided with the data request and is titled "Project Alternatives Figure 1," the proposed 138kV line from ECO Substation would require an extension. This extension would be of similar construction as

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the proposed 138kV transmission line from ECO Substation. Additional studies would be required to determine the preferred routing of the 138kV line from a technical feasibility and environmental impact standpoint. However, conceptually, one likely option would extend the proposed 138kV line from the area of the existing Boulevard Substation along the route titled “Alternate Transmission Line II” on the map, which appears to parallel Highway 80 to the east before continuing north, parallel to McCain Valley Road. This route would include one overhead or underground crossing of Interstate 8. This extension would require at least 4.5 additional miles of 1) acquisition of a permanent 100 foot wide Right of Way and 2) construction of the 138kV pole line. There would be additional permanent impacts related to additional maintenance pads and access roads as necessary for the extension of the 138kV line, as well as visual impacts to the area. In addition, there would be temporary impacts related to additional work areas, conductor pulling sites, and material staging yards for construction of the transmission line extension. Details of those maintenance and construction requirements and their impacts would require further routing and engineering study.

- How would SDG&E propose to connect the new site with the 60kV back up line to Crestwood?

SDG&E’s existing transmission system in the area of Boulevard is 69kV, so SDG&E will answer this request on the assumption that the Energy Division meant to state 69kV in this question.

If Boulevard Substation was rebuilt at the location indicated on the map that was provided with the data request and is titled “Project Alternatives Figure 1,” the existing 69kV line to Crestwood Substation would require extension to the new site that was identified in the map provided with this data request. Additional studies would be required to determine preferred routing of the 69kV line from a technical feasibility and environmental impact standpoint. However, conceptually, one likely option would re-route the existing 69kV line between Crestwood Substation and the existing Boulevard Substation such that where the existing 69 kV line crosses Jewell Valley Road from east to west, the line would instead turn north, parallel with Jewell Valley Road and then generally follow the route titled “Alternate Transmission Line III” on the map, which appears to continue to parallel Jewell Valley Road and Ribbonwood Road. The route would include one overhead or underground crossing of Interstate 8. This extension would require at least 5 additional miles of 1) acquisition of a permanent 100 foot wide Right of Way and 2) construction of the 69kV pole line. There would be additional permanent impacts related to additional maintenance pads and access roads as necessary for the extension of the 69kV line, as well as permanent visual impacts to the area. In addition, there would be temporary impacts related to additional work areas, conductor pulling sites, material staging yards for construction of the transmission line extension. This connection to SDG&E’s existing transmission system

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would still require a 138kV to 69kV voltage transformation at the new Boulevard Substation site. Details of the maintenance and construction requirements and their impacts would require further routing and engineering study.

- Please discuss other impacts (positive and negative) that may arise from rebuilding the Boulevard substation at the alternate site.

Using the alternate site for Boulevard would shift the cost from the generation developer to the transmission provider by reducing the length of generation tie lines and increasing the scope and as a result the cost of the transmission lines. This increased cost would be borne directly by SDG&E ratepayers. Extending the 69 kV line between Crestwood and Boulevard for approximately an additional 5 miles based conceptually on a route following “Alternate Transmission Line III” would increase the exposure of this line to forced outage events when in service.

It should be noted that the alternate substation location given in this request significantly increases the impacts between the existing Boulevard Substation and the alternate site. There would be a transmission corridor with the 138kV transmission line from ECO, an additional corridor for the extension of the existing 69kV transmission line from Crestwood Substation, and two 12kV distribution circuits that would be underbuilt on one of the transmission lines or on a separate distribution pole line. This scenario will increase permanent environmental and visual impacts to the area when compared to the proposed project.

Other generation developers planned for the area would potentially have to travel a farther distance to connect to the system which could jeopardize the feasibility of their projects due to the increased cost of building longer tie lines.

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**Question 2:**

2. To the extent it is not feasible to relocate the distribution facilities from the vicinity of the present Boulevard substation, please explain how the existing Boulevard site could be upgraded to meet the reliability requirements noted in the Purpose and Need statement and provide 138kV service to a wind collector substation located at the alternative site.

**SDGE Response to Q2:**

If Boulevard Substation remained in its existing location, as indicated on the map that was provided with the data request and is titled "Project Alternatives Figure 1," the proposed 138kV line from ECO Substation would require to be extended to the new site bypassing the existing Boulevard Substation. This extension would be of similar construction as the proposed 138kV transmission line from the ECO Substation. Additional studies would be required to determine the preferred routing of the 138kV line from a technical feasibility and environmental impact standpoint. However, as stated previously, one likely option would extend the proposed 138kV line from the area of the existing Boulevard Substation along the route titled "Alternate Transmission Line II" on the map, which appears to parallel Highway 80 to the east before continuing north, parallel to McCain Valley Road. This route would include one overhead or underground crossing of Interstate 8. This extension would require at least 4.5 additional miles of 1) acquisition of a permanent 100 foot wide Right of Way and 2) construction of the 138kV pole line. There would be additional permanent impacts related to additional maintenance pads and access roads as necessary for the extension of the 138kV line, as well as permanent visual impacts to the area. In addition, there would be temporary impacts related to additional work areas, conductor pulling sites, and material staging yards for construction of the transmission line extension. Details of those maintenance and construction requirements and their impacts would require further routing and engineering study.

To meet the reliability requirements of the Purpose and Need statement, which specifies the project objective of providing a second source for the southeastern transmission system to increase the reliability of electrical service to the neighboring communities, an additional transmission source would be required at the existing Boulevard Substation site. Additional studies would be required to determine the preferred routing of the second transmission source from a technical feasibility and environmental impact standpoint. However, as stated previously, one likely option would include the construction of a new 69kV transmission line along the route titled "Alternate Transmission Line III" on the map, which appears to parallel Highway 80, Jewell Valley Road and Ribbonwood Road and would include one overhead or underground crossing of Highway 8. This new 69kV line would require at least 5 additional miles of 1) acquisition of a permanent 100 foot wide Right of Way and 2) construction of the 69kV pole line. There would be additional permanent impacts related to additional maintenance pads and access roads as necessary and temporary impacts related to additional work areas, conductor

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pulling sites, and material staging yards for construction of the transmission line extension. Details of those maintenance and construction requirements and their impacts would require further routing and engineering study.

This scenario will expand the scope of the existing Boulevard Substation upgrade requiring additional land for the alternate site and additional Right of Way due to longer 138kV transmission connections. If the alternate location is only 138kV, then the existing Boulevard Substation would need to be upgraded to accommodate 138, 69, and 12kV (as is currently proposed). If the existing Boulevard stays as 69kV, then the alternate location needs to have both 138 & 69kV voltage levels. The 138kV facilities would accommodate the generation interconnections and the 138kV line back to ECO, and the 69kV facilities would be needed to provide service to the existing Boulevard Substation. The upgrades to the existing Boulevard Substation would entail replacing the vintage 1950's equipment and due to the size of the existing Boulevard Substation, the fenced area will have to be increased to build the additional structures necessary to connect a second 69kV line. This will result in impacts at both the existing Boulevard Substation site and the alternate 138kV substation site.

Another alternative that can provide increased reliability to Boulevard is to build an additional 69kV line from Cameron Tap to the existing Boulevard site. The existing three-terminal line between Cameron-Descanso-Crestwood would then be split into two 69kV lines: Cameron-Boulevard, and Descanso-Crestwood. While this option would provide a second source from the existing SDG&E 69kV system, it would also leave Boulevard exposed to forced outages and loss of service resulting from a single structure failure. This alternative would require either an additional minimum 50' easement for a separate 69kV line or the rebuild of the existing 69kV line between Cameron Tap and Boulevard to accommodate the second 69kV circuit, and it would also require more structures at the existing Boulevard Substation. It should be noted that this alternative may require extensive outages to the residents fed from Boulevard and Crestwood Substations to perform the work on the existing radial 69kV system. In addition, due to the size of the existing Boulevard Substation, the fenced area will have to be increased to build the additional structures necessary to connect a second 69kV line. This will result in impacts at both the existing Boulevard Substation site and the alternate 138kV substation site.