

SDG&E April 12 2012 Response
A. 10-06-007 South Bay Substation Relocation Project PTC
Energy Division Data Request 13 Dated March 19, 2012
SDGE-ED-013: Q A-D

The following data request is being submitted to obtain information from SDG&E regarding the No Project Alternative. CPUC staff also recognize the potential for action items that may occur under the No Project Alternative to be used to provide area support should the South Bay substation ultimately be removed.

A. No Project Alternative

CEQA requires an evaluation of the No Project Alternative so that decision makers can compare the impacts of approving the project with impacts of not approving the project. According to CEQA Guidelines the No Project Alternative must include the assumptions that conditions at the time of the NOP (i.e. baseline conditions including not removing the existing South Bay Substation) would not change since the Proposed Project would not be installed. The No Project Alternative must also describe the events or actions that would be reasonably expected to occur in the foreseeable future if the project were not approved.

Under the No Project Alternative, CPUC staff have identified the following components that may be reasonably expected to be developed as needed over time to support the area system while maintaining the South Bay Substation in place.

SDG&E Response:

SDG&E understands that CEQA requires the CPUC to evaluate a No Project Alternative, that conditions at the time of the NOP normally constitute the baseline for this evaluation, and that evaluation of the No Project Alternative must describe the events or actions that can be reasonably expected to occur in the foreseeable future if the project were not approved.

If "No Project" is approved (such that the existing South Bay Substation is not replaced and not upgraded to 230kV as proposed), a range of unacceptable consequences will result. The possible consequences include 1) reduced local and/or regional transmission system reliability due to reliance on aging and obsolete equipment at South Bay Substation 2) conditions on the 138kV and 69kV transmission systems that exceed the capabilities of the existing South Bay Substation and the surrounding transmission network, and 3) inability to serve future distribution load. Each of these is explained below.

1. The existing South Bay Substation is more than 50 years old and must be replaced to maintain system reliability. While it is technologically feasible to replace much of the equipment at the existing South Bay Substation location, some of the equipment, such as

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some of the structural steel, is not built to modern seismic standards and cannot be replaced at the existing location.

2. The transmission system will exceed its capabilities and will no longer meet CAISO planning criteria. The existing 138 kV bus is undersized for current transmission system conditions. The 69 kV bus is also configured in such a way that overloads of the 69 kV transmission line occur in the South Bay region caused by 69 kV bus outages at the South Bay Substation.
3. Distribution load will not be met at the existing South Bay Substation site which does not have physical room to allow for future distribution load. SDG&E notes that prior to the NOP, both the City of Chula Vista and the San Diego Unified Port District approved the Chula Vista Bayfront Master Plan, which can reasonably be expected to substantially increase distribution load in the immediate area.

SDG&E will take all appropriate steps to avoid these consequences, however SDG&E does not agree that the components identified by CPUC staff constitute the correct set of foreseeable other actions that SDG&E and the CAISO would take to avoid the consequences of not approving the Project. Rather, SDG&E and the CAISO have identified other activities that are likely to occur in the foreseeable future if the Project is not approved, in order to safely and reliably serve customer load and meet NERC/WECC/CAISO reliability criteria. These activities went through a lengthy and detailed analysis by the CAISO and described in the CAISO staff's Memorandum to the CAISO Board of Governors on February 3, 2010. A copy of the Memorandum was provided in the response to ED DR11 Question 2 and is attached here. These activities are discussed in more detail in response to ED DR 13 Question D, below.

Nonetheless, in response to this Data Request, SDG&E has evaluated the No Project Alternative components as identified by CPUC staff, each of which is discussed below. Although some of these components appear to be feasible from a technological perspective, SDG&E notes that the CEQA definition of "feasible" requires consideration of whether a particular alternative is "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors." SDG&E further notes that the No Project Alternative as identified by CPUC would not meet the Project objectives.

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No Project Alternative Components (As Identified by CPUC Staff):

1. Add a third 230/69-kV transformer at Miguel

SDG&E Response:

The installation of the third 230/69 kV, 224 MVA transformer (Bank 72) at Miguel Substation is technologically feasible within the existing substation fence. However, note that this component is not a part of the No Project alternative identified by SDG&E and the CAISO, and is not necessary to meet any of the four objectives identified for the Preferred Project. The component described in this question would not meet any of the four Project Objectives, and may not meet NERC/WECC/CAISO reliability criteria for the entirety of the ten-year planning window. The correct No Project alternative is described in the response to ED DR13 Question D.

The following issues would also need to be resolved:

- The 230 kV leads from 230 kV Bay 3S will have to be underground.
- The 69 kV rack will have to be rearranged and expanded to accommodate a double breaker configuration for Bank 72 low side connection.

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2. Convert the Montgomery substation from a 69-kV feed substation to a 138-kV substation by looping the adjacent South Bay –Grant Hill 138-kV circuit into it.

SDG&E Response:

It is technologically feasible to convert the Montgomery Substation from a 69 kV feed substation to a 138 kV substation. However, note that this component is not a part of the No Project alternative identified by SDG&E and the CAISO, and would not meet any of the four objectives identified for the Preferred Project. This component may not meet NERC/WECC/CAISO reliability criteria for the entirety of the ten-year planning window. The correct No Project alternative is described in the response to ED DR13 Question D.

The following issues would also need to be resolved:

- The substation would need to be permanently expanded by an additional approximately 75 ft by 150 ft to the west. The substation cannot be expanded to the east because underground transmission facilities exist in SDG&E's existing ROW
- Land use by adjacent landowner, Goodrich, needs to be evaluated to determine feasibility of SDG&E expansion of the substation.
- TL13815 will have to be tapped underground and looped into the substation.
- Grant Hill Substation and Montgomery Substation reliability will be reduced with TL13815 looping into Montgomery Substation.

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3. Construct a new 69-kV line from Miguel to the Sunnyside tap and rearrange the lines so that a Miguel – Sunnyside line and a Miguel – Sweetwater line are created.

SDG&E Response:

While it may be technologically feasible to construct a new 69 kV line from Miguel Substation to Sunnyside Substation, note that this component is not a part of the No Project alternative identified by SDG&E and the CAISO, and would not meet any of the four objectives identified for the Preferred Project. The component may not meet NERC/WECC/CAISO reliability criteria for the entirety of the ten-year planning window. The correct No Project alternative is described in the response to ED DR13 Question D.

The following substation issues would also need to be resolved:

- The 69 kV rack at Miguel Substation would need to be expanded.
- Sunnyside Substation will have to be rebuilt. There is enough property at Sunnyside to rebuild, but the fence line will have to be expanded.

In terms of the transmission scope of work, SDG&E determined that it would be technologically feasible to construct a new 69kV transmission line from Sunnyside to Miguel Substation. From a preliminary analysis, the new line would reside within existing SDG&E ROW and franchise positions. Preliminary analysis also indicates there probably is not a need to acquire any additional ROW to build the new 69kV transmission line. However, the overhead portion of the proposed upgrade would need to be modeled in PLS-CADD to verify. Modeling the overhead portion of the proposed line would also allow SDG&E to determine if any blowout issues would result from rebuilding the TL628 tie line with a double circuit configuration.

The construction of the new 69kV transmission line would involve utilizing the existing TL628 transmission alignment from Sunnyside to Miguel Substation. From Sunnyside Substation, the new transmission line would be constructed underground and utilize a vacant duct position within the TL628 underground duct package. This existing duct package travels for approximately 1.8 miles in a general southeast direction toward Miguel Substation. Although the new circuit would reside within the vacant position in the TL628 duct package, the installation of new underground transmission vaults (off-setting from existing vaults) would be required to maintain reliability and mitigate additional circuit outages during future maintenance work. The

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vaults would be placed adjacent to the existing TL628 duct package on the vacant side. Additionally, some trenching would be required to intercept and route the existing conduits to the new vaults as well as some underground configuration work at the Miguel Tap location. At this point, it appears as though all underground facilities would reside within SDG&E owned-property and franchise positions. New underground cable (one cable per phase) and associated cable accessories would then be installed within the newly constructed underground transmission duct package and substructures.

From the underground segment, the new line would then transition overhead at an existing riser structure on TL628, and then continue eastward, utilizing the same TL628 overhead alignment to Miguel Substation. To utilize the existing TL628 overhead alignment would require replacing approximately 3.0 miles of existing 69kV single-circuit overhead facilities (TL628) with double-circuit facilities. The rebuild would entail replacement of all existing overhead facilities with anchor-bolt foundation steel poles to accommodate the additional pole loading, and to mitigate blowout issues with adjacent transmission lines in the corridor. As stated above, based on preliminary analysis, it appears as though SDG&E could rebuild TL628 as a double circuit line within the existing corridor, but additional engineering/modeling would need to be performed to be certain.

Upon completion of the new line (Miguel to Sunnyside), the Miguel to Sweetwater line (TL628) would be created by reconfiguring and opening Miguel Tap.

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4. Provide additional support to the South Bay area (should such support be required) by one or both of the following actions.
 - a. Operation of the existing Peaker units in the vicinity of Border substation during times of peak loads as necessary to maintain reliable service.
 - b. Placing series capacitors in the Miguel – Border 69-kV line to allow for the injection of additional power into the South Bay region.

SDG&E Response:

Note that neither SDG&E nor the CAISO consider this to be the correct “No Project” alternative (see the response to ED D13 Question D)

Neither SDG&E nor the CAISO have analyzed the application of series capacitors on the Miguel-Border 69 kV line within the ten-year planning window to determine if it meets the applicable NERC, WECC, and CAISO planning criteria. However, SDG&E and CAISO analysis underlying the correct “No Project” alternative described in ED D13 QD did include the ability to dispatch the peaking units at Border to mitigate thermal overloads where possible. Note that the Border generation is currently subject to a generation runback SPS to prevent overloading the 69 kV system between Miguel and South Bay; additional injection into this network from Miguel substation by reducing the impedance on the Miguel-Border line would likely present similar issues.

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With respect to each of the above components or sub-components please provide the following information as well as any additional information that may be pertinent to the feasibility and performance of the No Project Alternative.

- Can the system resulting from the implementation of the above components (on an incremental basis) and maintaining the existing South Bay substation in place meet NERC and WECC reliability criteria?
 - If not, why not, in what time frame will the criteria be violated and what are the contingencies / circumstances that would result in non-compliance?
 - If so, what is seen as the best timing to implement each component?

SDG&E Response:

Note that neither SDG&E nor the CAISO consider this alternative to be the “No Project” alternative. The correct “No Project” alternative is described in the response to ED DR13 Question D as well as in SDG&E’s original PEA document.

Neither SDG&E nor the CAISO have analyzed this alternative within the ten-year planning window to determine if it meets the applicable NERC, WECC, and CAISO planning criteria.

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- What are the construction & environmental related issues that may be created by the alternative? (R/W acquisition/expansion, space limitations, etc.) In particular please respond at least to the following:
 - With respect to the new 69-kV line to Sunnyside Tap, please note the possibility for double circuit 69-kV construction as well as undergrounding of at least one of the 69-kv circuits.
 - With respect to conversion of the Montgomery substation please note the extent of additional land required. Also please note the magnitude of the impact on distribution level short circuit duty and the resultant impact on distribution equipment.
 - With respect to the need for additional operation of area peaking generation, estimate the additional annual run time for the generation if the alternative were to be implemented.

SDG&E Response:

Please refer to SDG&E's response on question A3 of this data request as it already discusses our methodology of incorporating a new 69kV line from Sunnyside Tap to Miguel Substation.

For a new 69kV line from Miguel to Sunnyside Tap, SDG&E anticipates all underground work to reside within SDG&E easements and franchise positions. Some short-term construction impacts would occur within Otay Lakes Road during the trenching and excavation of the conduit connections and vaults. It is not known whether there would be new ROW required for the overhead portion of this line. It is anticipated that SDG&E would expand the existing ROW in the area and no new alignment would be proposed. The current ROW may not be feasibly expandable into adjacent land uses and there is limited ability in the area for a new overhead route. Continuing the 69kV underground through streets in franchise area for the length required would result in reliability issues and unacceptable line losses. Also, as stated previously the Sunnyside Substation would have to be rebuilt and expanded. It appears that the expansion can be accommodated within the substation property but outside of the existing substation fenced area.

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The expansion would require the removal of several large mature trees located to the north of the substation fence line see below:



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The rebuild and upgrade of Montgomery Substation would result in at least a partial displacement of an existing business (Goodrich) that would not occur with the SDG&E No Project alternative or the Proposed Project. Depending on how much area is required and whether the facility can operate with reduced square footage, the entire facility may be considered subject to a full taking. Depending on wall footings, grounding grid and safety setbacks, up to 20,000 square feet of existing industrial use would need to be displaced.



SDG&E is unable to answer the question pertaining to construction and environmental related issues with respect to the need for additional operation of area peaking generation as we cannot estimate the additional annual run time for the generation if the alternative were to be implemented. SDG&E is also unable to answer this question as we do not know which element the congestion occurs on, for which contingency or at what load level.

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B. Removal of the South Bay Substation as Planned Combined with Components Described Under the No Project Alternative

Assuming the South Bay Substation is removed as planned, please provide the following information with respect to each of the components or subcomponents described under the No Project Alternative as well as any additional information that may be pertinent to the feasibility and performance of removing the South Bay Substation as planned combined with the implementation of the components described under the No Project Alternative.

- Will the system resulting from the implementation of the components described under the No Project Alternative combined with the removal of the South Bay Substation as planned meet NERC and WECC reliability criteria?
 - If not, why not, and in what time frame will the criteria be violated and what are the contingencies / circumstances that would result in non-compliance?
 - If so, what is seen as the best timing to implement each component?

SDG&E Response:

As noted in the response to ED DR13 Question A, neither SDG&E nor the CAISO consider this alternative to be the “No Project” alternative. The correct “No Project” alternative is described in the response to ED DR13 Question D and in the original PEA filing.

Neither SDG&E nor the CAISO have analyzed this alternative within the ten-year planning window to determine if it meets the applicable NERC, WECC, and CAISO planning criteria. SDG&E Transmission Planning has reviewed this alternative and has the following observations:

Generally, the removal of the existing South Bay 138/69 kV substation without replacement by either the Preferred Project or a rebuilt 138/69 kV substation appears problematic. The 69 kV subtransmission system in the South Bay area was designed to carry power from the South Bay generation to load in the South Bay area via the six (6) 69 kV lines that terminate at the existing South Bay 69 kV bus. In the absence of that generation, the energy is supplied by the 138 kV system via the 230/138 kV transformers at Mission and Miguel substations. Removal of the South Bay substation without replacement will shift the South Bay load to Silvergate, Old Town, and Miguel substations, and increase the demand on the 69 kV system. Essentially, this will

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likely force the South Bay load to be served from more remote sources, increasing loop flows on the 69 kV system and increasing line losses.

Additionally, because the six South Bay 69 kV lines will have no bus to terminate at, they will have to be tied directly to each other. SDG&E and the CAISO have not looked at the details of such an arrangement, but the number of lines would presumably drop by half, from six to three.

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- It is assumed the construction & environmental related issues associated with this plan would be the same as those described under the No Project Alternative. If there are any additional issues that should be considered please so note.

SDG&E Response:

SDG&E has not analyzed in detail the potential construction and environmental issues associated with this plan. Additional activities associated with serving the South Bay load from more remote resources could potentially have environmental and construction related issues.

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C. South Bay Substation Site Alternative

Finally, additional information is requested regarding use of the existing South Bay Substation site to develop the Proposed Project.

- Please indicate whether construction and operation of an AIS as well as GIS is feasible within the existing South Bay Substation site. In the event the footprint needs to be expanded under either the AIS or GIS configuration, please identify the area that would be expanded. If there are any additional issues that should be considered please so note.

SDG&E Response:

The construction and operation of an AIS substation in the existing South Bay Substation site is technologically feasible.

The following issues would also need to be resolved:

- An approximate additional 3 acres would be required to accommodate the future four 69/12 kV transformers, 12 kV switchgear and circuits. If additional land is not available adjacent to the existing site; then in the future an entirely new site would need to be acquired for the distribution substation. Additionally, new or existing transmission lines would need to be extended to this new distribution substation site.
- Removal of existing equipment and construction of the new 230/69 kV substation would have to be staged to keep the existing circuits in service.
- Operational constraints would be required during construction and cutovers.
- The estimated construction duration would increase.
- A reduced scope would be required.

The construction and operation of a GIS Substation in the existing South Bay Substation site is technologically feasible.

The following issues would also need to be resolved:

- Removal of existing equipment and construction of the new 230/69 kV GIS substation would have to be staged to keep the existing circuits in service.
- Operational constraints would be required during construction and cutovers. The estimated construction duration would increase.
- A reduced scope might be required.

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From a technical standpoint, replacing the current 138/69 kV South Bay substation with a rebuilt 230/69/12 kV substation (AIS or GIS) on the existing site is electrically very similar to the Preferred Project. This alternative will meet some of the four objectives identified for the Preferred Project, including meeting NERC/WECC/CAISO reliability criteria. However, it does not meet all of the four objectives, specifically compliance with the MOU with the City of Chula Vista.

The attached correspondence from the City of Chula Vista demonstrates that rebuilding the substation at the existing is not socially or environmentally feasible. Relocation of the substation will facilitate implementation of the Chula Vista Bayfront Master Plan, which as noted above has been approved by the City of Chula Vista and the San Diego Unified Port District.

D. SDG&E No Project Alternative Components

The reasonably foreseeable “No Project” alternative is that previously evaluated by the CAISO and described in the CAISO staff’s Memorandum to the CAISO Board of Governors on February 3, 2010. A copy of the Memorandum was provided in the response to ED DR11 Question 2 and is attached here.

SDG&E and the CAISO describe the correct “No Project” alternative as follows:

- In-kind replacement of the existing 138/69 kV South Bay substation
- Mitigation of overloads on the Old Town 230/69 kV transformers #1 & #2
- Mitigation of overloads on the Old Town-Kettner 69 kV line
- Mitigation of overloads on the Kettner-B St. 69 kV line
- Installation of the Miguel 230/138 kV transformer #2¹

Note that SDG&E and the CAISO differ somewhat on the mitigation for the four overloaded elements. The CAISO proposed installation of load shedding SPS to mitigate the thermal violations, since all are the result of N-1-1 contingencies (the outage of the Southwest Powerlink followed by a subsequent N-1). SDG&E believes that in order to provide the same level of

¹ Note that the Miguel 230/138 kV bank installation was approved as a separate project by the CAISO.

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reliability as the Preferred Project (i.e. no risk of load shedding for the same set of contingencies) it would be necessary to upgrade the overloaded facilities. Either approach meets WECC, NERC, and CAISO reliability criteria.

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With respect to each of the above components or sub-components please provide the following information as well as any additional information that may be pertinent to the feasibility and performance of the No Project Alternative.

- Can the system resulting from the implementation of the above components (on an incremental basis) and maintaining the existing South Bay substation in place meet NERC and WECC reliability criteria?
 - If not, why not, in what time frame will the criteria be violated and what are the contingencies / circumstances that would result in non-compliance?
 - If so, what is seen as the best timing to implement each component?

SDG&E Response:

Yes.

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What are the construction & environmental related issues that may be created by the alternative? (R/W acquisition/expansion, space limitations, etc.)

SDG&E Response

It is anticipated that the rebuild of the South Bay Substation at 138kV would occur within or adjacent to the current location. In either case, the area is developed with utility uses either associated with the substation or the adjacent power plant facility and environmental effects would be minimal. This would however, conflict with the MOU and the approved Chula Vista Bayfront Master Plan.

With regards to Old Town-Kettner 69 kV line and Kettner-Station B 69 kV line SDG&E anticipates all underground work to reside within SDG&E easements and franchise positions. Some short-term construction impacts would occur within downtown roads during the trenching and excavation of the conduit packages, connections and vaults. It is not known whether there would be new ROW required for the overhead portion of this line (Old Town to Kettner Substation). It is anticipated that SDG&E would expand the existing ROW width in the area and no new alignment would be proposed. There is a possibility that the current ROW may not be expandable due to adjacent land use encroachment and there is limited ability in the area for a new overhead route. Proposing the 69kV underground through streets in franchise area for the length required on the overhead segment (Old Town to Kettner Substation) will result in reliability issues and unacceptable line losses.



Memorandum

To: ISO Board of Governors

From: Dr. Keith Casey, Vice President, Market & Infrastructure Development

Date: February 3, 2010

Re: **Decision on the Bayfront Substation Transmission Project**

This memorandum requires Board action

EXECUTIVE SUMMARY

This memorandum seeks approval of the Bayfront substation transmission project. San Diego Gas & Electric Company proposed the project to meet a reliability need. Specifically, this project is needed to mitigate reliability concerns on the sub-transmission network facilities in the event that the remaining South Bay power plant (South Bay) Units 1, 2 and the 15 MW gas turbine are retired. The planned operational date for the proposed project is December 2012.

The California Independent System Operator identifies projects needed to meet reliability needs, including projects needed to meet standards established by the North American Electric Reliability Corporation (NERC), and the system must be planned and built in anticipation of circumstances that would lead to reliability impacts. In this instance, Dynegy has stated publicly that it intends to retire the South Bay plant if the ISO determines that the plant is no longer needed for reliability must run (RMR) purposes. Additionally, the existing South Bay power plant utilizes once-through cooling, which has been identified by the State Water Resources Control Board as one of nineteen plants that would be phased out due to its cooling technology.

The Bayfront project has an estimated total cost of \$129.2 million, of which \$57.2 million includes the cost for the 230 kV upgrades, \$60.8 million for 69 kV and 138 kV related construction and \$11.2 million is for the cost of borrowing funds until the project is placed into operation. In reviewing the project, ISO staff also evaluated one other alternative, which was found to be less cost effective than the Bayfront substation transmission project.

Moved, that the ISO Board of Governors finds that the Bayfront Substation Transmission Project, as detailed in the memorandum dated February 3, 2010, is a necessary and cost-effective long-term transmission addition to the ISO controlled grid; and

Moved, that the ISO Board of Governors directs San Diego Gas and Electric Company to continue with the design, licensing and construction of this project.

DISCUSSION AND ANALYSIS

Background

Downtown San Diego is presently served from the 500/230/138/69 kV Miguel substation by the Miguel-Silvergate-Old Town 230 kV line, two Miguel-Sycamore Canyon 230 kV and two Miguel-Mission 230 kV transmission lines, as well as by underlying 138 and 69 kV systems. The 138 kV lines connect Miguel substation with South Bay and Main Street substations in the north and Los Coches substation in the northeast. South Bay power plant is connected to the 138 kV and 69 kV systems, and at this time South Bay, or a portion of it, is essential in meeting local capacity requirement in the San Diego area.

The proposed project is needed to address transmission overloads that would occur when the South Bay power plant is retired. The project involves relocating and upgrading the South Bay substation from 138/69 kV to 230/69 kV and other system modifications described in the body of the memo. In addition to mitigating identified overloading concerns, there are two other issues that SDG&E cited as factors supporting the Bayfront project. First, the existing South Bay substation is over forty years old. The substation has aging infrastructure concerns, including undersized circuit breakers and 138 kV bus, outdated seismic standards, and an unreliable 69 kV configuration during bus outages. Secondly, per a Memorandum of Understanding between SDG&E and the City of Chula Vista regarding franchise agreements, SDG&E agreed to relocate the existing South Bay substation to a new location on Chula Vista's Bayfront in coordination with the retirement of the South Bay power plant. This relocation may be the only opportunity to bring the needed 230 kV source into the area.

South Bay has been included as RMR generation unit since 1998 to meet local reliability needs in the San Diego area. With the addition of new generation located within San Diego County, the need for maintaining South Bay as an RMR unit has been decreasing. For 2010 RMR requirements for South Bay, the ISO has determined that 296 MW (or two units) are needed, provided that the Otay Mesa power plant (573 MW) is proven to be a reliable generating station prior to summer 2010.

Reliability criteria violations

The proposed project will eliminate the following reliability criteria violations that occur for the following contingencies under a complete South Bay retirement scenario:

- 1) Overloading of the Miguel 230/138 kV bank # 2 based on a normal rating starting in 2012. If emergency rating¹ can be utilized on an extended basis, the ISO staff expects that there will be no overloads. However, SDG&E planning staff expressed concerns on the length of time it takes to bring in and install the spare transformer at Miguel substation, which can take up to two weeks or more. The emergency rating limit for the transformer is intended not for use more than 24 hours for five days (occurrences) in a year. The overloading occurs under T-1 contingencies.
- 2) Overloading of the Kettner-Station B 69kV transmission line starting in 2019 under an N-1-1 contingency condition.
- 3) Overloading of the Old Town-Kettner 69 kV transmission line starting in 2019 under an N-1-1 contingency condition.
- 4) Overloading of the Old Town 230/69 kV transformer banks under an N-1/T-1 contingency condition starting in 2010, if normal rating is utilized. However, if the emergency rating is utilized, the ISO staff does not expect the transformer to be overloaded. Similar to item # 1 above, SDG&E staff expressed concerns on the extended use of the emergency rating of the transformer while the spare bank is being relocated to Old Town.

Project description

The Bayfront substation transmission project includes the following scope of work:

1. Construct a new 230/69 kV substation that will replace the existing 138/69 kV substation;
2. Install two 224 MVA 230/69 kV transformers;
3. Loop in the Miguel-Silvergate 230 kV transmission line into the new substation;
4. Transfer all 69 kV lines presently connected to the South Bay 138/69 kV substation to the new substation;
5. Re-configure existing 138 kV lines to eliminate the need for the South Bay 138 kV bus.

¹ An emergency rating, which generally should not be exceeded, is a higher rating on a transmission line or transformer to allow higher flow than normal rating for a short duration of time (i.e., typically 15 minutes to 24 hours, depending on the equipment) to address contingency overloads.

Project cost

The proposed project has an estimated total cost of \$129.2 million, in which \$57.2 million includes the cost for the 230 kV upgrades; \$60.8 million for the 69 kV, 138 kV and distribution upgrades and \$11.2 million is for the cost of borrowing funds until the project is placed into operation.

Other alternatives considered

In addition to the proposed project, ISO staff also evaluated another option (alternative 2) under the assumptions that the South Bay power plant is retired.

Alternative 1 (preferred): Proposed project of rebuilding South Bay substation in a different location with 230 kV upgrades – This alternative has an estimated cost of \$129.2 million. With this project, identified facility loading concerns under contingency conditions will be mitigated. This alternative also allow connection of 230 kV transmission facilities to serve downtown load, thus enable for more robust option of serving future load growth.

Alternative 2: Rebuild South Bay 138/69 kV substation in a different location and upgrade identified individual overloaded transmission facilities – This alternative is expected to have substantially higher cost than the proposed project. The alternative includes additional upgrades and estimated costs, shown in Table 1, in addition to \$112.9 million for constructing a new South Bay substation with the same voltage (138/69 kV) at a nearby location. With this alternative, load curtailment in the order of about 50 MW would be required to mitigate loading concerns under N-1-1 contingency conditions and the facility upgrades, shown in Table 1, are proposed for mitigating loading concerns under an N-1 contingency.

TABLE 1

Overloaded Equipment	Mitigation	Cost
Miguel Bank 230/138 kV transformer #2	Upgrade 230/138 kV bank	\$27.4 M
Old Town 230/69 kV transformers #1 & #2	Install System Protection System for load curtailment under contingency conditions	\$0.1 M
Old Town-Kettner 69 kV line	Install System Protection System for contingency load curtailment	\$0.1 M
Kettner-B 69 kV line	Install System Protection System for contingency load curtailment	\$0.1 M
South Bay Substation Rebuild (In-kind Replacement)	N/A	\$112.9 M
Total Cost of Alternative # 2		\$140.6 M

MANAGEMENT RECOMMENDATION

Based on the ISO staff findings that the proposed project is the most cost effective transmission alternative to address overloading concerns associated with South Bay's retirement, Management recommends that the Board approve the project and that SDG&E be directed to proceed with necessary permitting, engineering and construction of the project. To allow for continued delivery of the South Bay generation until the ISO removes reliability must run designation for South Bay Units 1 and 2, the construction and energization of the new Bayfront substation should be coordinated such that there is no loading impact to the sub-transmission facilities.



Development Services Department

April 6, 2012

Jensen Uchida, CPUC Project Manager
California Public Utilities Commission
505 Van Ness Avenue
San Francisco CA 94102

David L. Geier, Vice President
San Diego Gas & Electric
8315 Century Park Court, CP21G
SAN DIEGO, CA 92123-1548

SUBJECT: The South Bay Substation Relocation Project (Application A-10-06-007).

Dear Mr. Uchida and Mr. Geier:

The purpose of this letter is to state the City of Chula Vista's (City) strong opposition to a proposal to rebuild the South Bay Substation at its existing location and the City's support for the relocation of the Substation. Relocation of the Substation from its existing location allows for the implementation of the vision as contained in the Chula Vista Bayfront Master Plan (CVBMP), Local Coastal Plan Amendment (LCPA) and San Diego Port District Port Master Plan Amendment (PMPA).

For the past ten years the City and the San Diego Port District (Port) have been working together on the development of a joint community vision and master plan for the development and revitalization of the Chula Vista Bayfront. This planning effort, which included a multitude of community meetings and public input, culminated in the unanimous adoption of the CVBMP, LCPA and PMPA at a joint meeting of the City Council, the City's Planning Commission and the Port Board on May 18, 2010. In 2011, the Port and City submitted the respective Bayfront plans to the California Coastal Commission (Commission) for review and certification. The Commission is expected to act on the Bayfront plans in the summer of 2012.

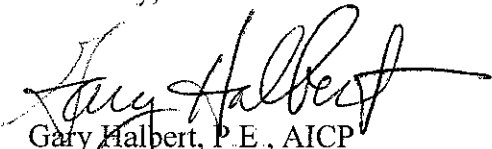
The Port's Master Plan establishes the land use designations over the lands currently occupied by the South Bay Power Plant (currently under demolition) and the South Bay Substation (currently proposed to be relocated to the site on Bay Boulevard north of Palomar Street). The Master Plan envisions the removal of the existing uses and designates those lands for the development of an Ecological Buffer, construction of a Community Park, an RV Park, and Industrial Business Parks. These land uses will protect the coastal sensitive resources, provide park and open space, affordable recreational space, and jobs and income for the community. This is the social and environmental vision that the Community, Port and City have been diligently working to achieve during the past decade.

Major steps have already been taken to adopt the land use and financial mechanisms to implement this vision and reclaim these lands for the benefit of the Community. Reconstruction of the Substation at its existing location would not only preclude the implementation of this vision but it would also allow existing blighting influences to remain on site. This would represent a major drawback in an effort that is at the verge of implementation. The reconstruction of the Substation at its existing location would preclude the implementation of environmental and social projects that will have significant benefits for the Community. In addition, reconstruction of the Substation at its existing location is inconsistent with the land use designations for the subject sites in the CVBMP. This makes reconstruction of the Substation at its existing location socially and environmentally infeasible, as it would preclude the achievement of important benefits for the community and the environment.

The City has worked with San Diego Gas and Electric (SDG&E) on the relocation of the Substation and believes that any outstanding project design issues can be resolved with SDG&E. In fact, the City, Port and SDG&E have been actively working to resolve all outstanding issues, and this process is expected to continue successfully. Furthermore, the Port and the State Lands Commission have consistently supported the site on Bay Boulevard north of Palomar Street for the relocation of the Substation.

In conclusion, the City supports relocation of the Substation and strongly opposes the reconstruction of the Substation at its existing location because this would preclude the implementation of the vision of the CVBMP.

Sincerely,



Gary Halbert, P.E., AICP
Director of Development Services/Assistant City Manager

CC: Glen R. Googins, City Attorney, City of Chula Vista
Michael J. Shirey, Deputy City Attorney III, City of Chula Vista
Scott Tulloch, Assistant City Manager, City of Chula Vista
Estela de Llanos, Senior Counsel, SDG&E
Miguel Z. Tapia, Senior Planner, City of Chula Vista