

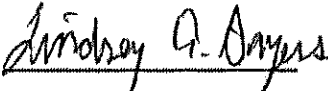


**SOUTHERN CALIFORNIA EDISON COMPANY
FACILITIES RE-STUDY**



August 14, 2009

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Southern California Edison

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I. Executive Summary

[REDACTED] applied to Southern California Edison Company (SCE) for interconnection and distribution service under the terms of SCE's Wholesale Distribution Access Tariff (WDAT). [REDACTED] will own and operate a 25 MW generating facility ([REDACTED] Project), located at [REDACTED] in Brea, to be interconnected via a new 66kV generation tie-line within the Olinda 66kV Distribution System.

The [REDACTED] consists of [REDACTED] with a net generation export of 18.4 MW. The generation facility would utilize [REDACTED] transformer to interconnect the generation to SCE's system. The Project will be interconnected to SCE's electric system at the SCE owned Brea 66kV Substation bus via a SCE-owned generation tie-line. The Point of Interconnection to the CAISO grid would be the Olinda Substation 220kV Bus.

The Project will be connected to the SCE 66kV system via a new 66kV generation tie-line to be owned, operated and maintained by SCE.

For the purpose of this study, the new generation tie-line will be referred to as Alpha 66kV Line.

The Alpha 66kV Line will be constructed between [REDACTED] facility and Brea Substation.

[REDACTED] has requested an interconnection date of January 1, 2010.

A Sub-Transmission/Distribution System Impact Study dated September 25, 2007 and a Transmission System Impact Study dated June 18, 2007 (together the SIS) was performed by SCE. The SIS identified the impact of the Project to SCE's sub-transmission/distribution system and the CAISO Grid. The CAISO reviewed the Transmission System Impact Study and provided its preliminary approval for interconnection.

FOR ADDITIONAL DETAIL REFER TO THE FOLLOWING EXHIBIT:

- EXHIBIT A: TRANSMISSION SYSTEM IMPACT STUDY – EXECUTIVE SUMMARY
- EXHIBIT B: SUB-TRANSMISSION/DISTRIBUTION SYSTEM IMPACT STUDY – EXECUTIVE SUMMARY

II. System Impact Study Results

TRANSMISSION SYSTEM IMPACT STUDY RESULTS:

The Transmission System Impact Study analyzed the System under the following conditions:

1. All four West of Devers 230kV lines have been upgraded.
2. Rancho Vista 500/230kV Substation is modeled in service.
3. Oak Valley 230/115kV Substation is modeled.
4. Wildlife 230/66kV Substation (formally called Jurupa Substation) is modeled in service.
5. WDAT230 44.5 MW is modeled.
6. WDAT231 44.5 MW is modeled.
7. WDAT236 44.5 MW is modeled.
8. CAISO136 300 MW is modeled.

[REDACTED]
[REDACTED]
FACILITIES STUDY

The Transmission SIS concluded that the existing SCE transmission System is not adequate to support the additional generation.

The SIS identified four (4) locations where the three phase short circuit duty has increased by 0.1kA or more as a result of the new generation and two (2) locations where the single line to ground short circuit duty has increased by 0.1kA or more as a result of the new generation.

The Transmission SIS's power flow study results show that no overloading problems exist on the transmission lines for base-case, N-1, and N-2 contingencies with the addition of the [REDACTED] Project. The Transmission SIS also concluded that there are no transient stability and post transient impacts to the SCE transmission system from the [REDACTED] Project.

SUB – TRANSMISSION/DISTRIBUTION SYSTEM IMPACT STUDY RESULTS:

The Sub – Transmission/Distribution System Impact Study concluded that the existing SCE Sub – Transmission/Distribution System is adequate to support the additional generation.

The Sub – Transmission System Impact Study conclusions are:

1. Thermal loadings on the SCE distribution facilities used to provide the requested WDAT service will all be within criteria limits.
2. There are no new overloads created by the Project
3. There are no pre-project overloads aggravated by the Project

Both the Transmission and the Distribution SIS concluded that a Facilities Study would be required to determine the scope of work and cost estimates for all elements required to provide the Project Interconnection.

III. Facilities Study Assumptions

- A. All required ISO metering equipment at the Generating Facility will be provided by [REDACTED] and is not included in the Facilities Study.
- B. Any required upgrades at facilities not owned by SCE are not included in the Facilities Study.
- C. An RTU will be installed at the Generating Facility by SCE and it is included in the Facilities Study. One dedicated 125VDC circuit, one 115VAC convenient circuit and all station interface wiring will be provided and brought to the RTU by the customer.
- D. SCE personnel shall be guaranteed unescorted site access for equipment maintenance and service restoration.
- E. [REDACTED] will install a 66kV disconnect switch at their switchrack that can be locked out by Edison personnel when an outage or clearance on the line is needed.
- F. The customer will install one SEL 311L for line protection.

IV. Circuit Breakers Evaluation

The Facilities Study evaluated the circuit breakers short circuit capability at all locations where the Three-Phase and/or Single Phase to Ground SCD's were increased by 0.1kA or more as a result of the Project.

The Facilities Study concluded that a total of four (4) 66kV CBs at two locations were

impacted by the Project.

V. Facilities Study Scope and Cost Estimate

V – A Facilities Study Scope

Pursuant to FERC's orders 2006-A (Small Generators) and 2003-A (Large Generators) all Facilities Studies are required to provide the customer with its "maximum possible funding exposure", which shall include the costs of upgrades that are reasonably allocable to the Interconnection Customer at the time the estimate is made, and the costs of any upgrades not yet constructed that were assumed in the interconnection studies for the Interconnection Customer but are, at the time of the estimate, an obligation of an entity other than the Interconnection Customer."

To comply with the FERC orders, the Scope of Work and Cost Estimate for all elements required for the interconnection are presented for the following two cases:

CASE A Facilities: All facilities required exclusively by the Project

And

CASE B Facilities: All additional facilities that may be required by the Project

The facilities included in Case B are those additional facilities required to mitigate overloads caused by projects placed ahead of the [REDACTED] Project in the application queue, and are expected to be implemented by such projects. However, in the event that any of the earlier queued projects withdraws or modifies their interconnection request in accordance with applicable tariff allowances, the [REDACTED] Project may become responsible for some or all of these additional facilities and the associated costs.

SCE will design, install, own, operate and maintain the new 66kV position at Brea Substation and the 66kV distribution interconnection line from the 66kV dead end rack to the customer owned [REDACTED] generation facility.

For the purpose of this study, generation interconnection line will be referred to as the Brea – Alpha 66kV line.

CASE A Facilities:

Brea Substation:

Re-arrange the existing 66kV lines to terminate the new generation tie line. Move the Olinda – Carolina – Lambert 66kV line from position 5 to position 4. Move the Olinda – Atwood – Carolina 66kV line from position 4 to position 3. Terminate the new generation tie line at the existing 66kV position 5. Install three sets of 66kV metering units on position 5. Equip position 3 at Brea Substation. Install one 66kV, 1200A, 31.5kA circuit breaker, three sets of 66kV disconnect switches, one 66kV potential transformer and install the necessary conductor.

Replace the 66kV position 5 circuit breaker with a 40kA rated circuit breaker because of charging currents.

Install Protection Relays at position 5 as follows:

- o One (1) Schweitzer SEL-311L relay for line current differential protection
- o One (1) GE D60 relay for backup, distance and non-pilot protection

Olinda Substation:

Replace two (2) 27kA 66kV circuit breakers with 31.5kA circuit breakers.

Sub-Transmission:

A separate subtransmission line study will be completed under the LGIA.

Telecommunication:

Install approximately 1.5 miles of new overhead/underground fiber optic cable from SCE's Brea Substation to the generation site. Install one sonnet terminal and one channel terminal equipment at Brea Substation. Install one sonnet terminal and one channel terminal equipment at the generation site. Provide one primary C37.94 – 64K protection data circuit and one Voice Grade Data circuit for RTU operation.

Power Systems Control:

In order to maintain the integrity and the reliability of the SCE system, a full size real-time Remote Terminal Unit (RTU) is required at the [REDACTED] Generation Facility to monitor the customer's net MW, MVAR, terminal voltage, auxillary load MW, MVAR, and necessary alarms. Point addition to the existing SAS at Brea Substation is also required to monitor the new customer-owned generation tie-line net MW, MVAR, amps, 66kV CB status/control, and necessary protection alarms.

Corporate Real Estate:

Corporate real estate will be included in the subtransmission study that will be completed under the LGIA.

CASE B Facilities:

Mesa Substation:

Install four (4) sets of TRV's to upgrade two (2) 220kV circuit breakers

V – B Facilities Study Cost Estimate

CASE A Identifies the cost of all facilities that are required exclusively by the Project.

CASE B Identifies the cost of all additional upgrades required that were triggered by projects placed ahead of the [REDACTED] in the application queue.

In the event that any project placed ahead of the [REDACTED] in the application queue is withdrawn or modified in accordance with applicable tariff allowances, a restudy would be required. Such restudy may conclude that the [REDACTED] would then trigger and have cost responsibility for some or all of the additional upgrades identified in Case B.

The total estimated cost of all elements of the interconnection as identified above in the Facilities Study Scope is as follows:

CASE A:	\$ 3,840,000
CASE B (May be added to Case A):	<u>\$ 616,000</u>
POSSIBLE MAXIMUM COST EXPOSURE:	\$ 4,456,000

SEE EXHIBIT C: COST SUMMARY.

VI. Conclusions

- A. The estimated cost to interconnect the Project is approximately \$3,840,000 for Case A with the potential additional cost of \$616,000 for Case B for a total Maximum Cost Exposure of \$4,456,000.
- B. The time required to complete the proposed project will be 18 months after receiving project authorization and funding. This time includes engineering, material procurement and construction. This timeframe is subject to final verification by SCE of available resources at the time interconnection agreement is executed. **A detailed Project Schedule will be provided during the Engineering and Design Phase of the Project.**
- C. The costs indicated in the attached tables are shown 2010 Dollars and are not firm. These are only preliminary estimates based on conceptual engineering and system unit costs, and are subject to change based on the final design and actual material costs. This Facilities Study and cost estimates as presented are valid for a period of 90 days.
- D. The estimated Project cost will be reconciled to actual costs upon closure of the associated work orders. The necessary billing adjustments will be made in accordance with the terms of the interconnection agreement.
- E. Study results may be affected by changes to projects queued ahead of the [REDACTED] [REDACTED] Such changes would require a restudy to be performed.

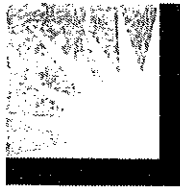
EXHIBIT A

**TRANSMISSION SYSTEM IMPACT
STUDY EXECUTIVE SUMMARY**

[REDACTED]
WHOLESALE DISTRIBUTION ACCESS TARIFF
LARGE GENERATOR INTERCONNECTION

SYSTEM IMPACT STUDY

June 18, 2007



SOUTHERN CALIFORNIA
EDISON[®]

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SYSTEM IMPACT STUDY

EXECUTIVE SUMMARY

INTRODUCTION

[REDACTED] applied to Southern California Edison (SCE) for Interconnection pursuant to Wholesale Distribution Access Tariff (WDAT). [REDACTED] proposed to interconnect a new 25 MW generation project to be installed at a [REDACTED] [REDACTED] Brea, at the Brea 66kV bus. The in-service date proposed by [REDACTED] is [REDACTED]. *The study accuracy and the results for the assessment of the system adequacy are contingent on the accuracy of the technical data provided by [REDACTED].*

Southern California Edison's Transmission & Interconnection Planning (SCE - TIP) has performed a System Impact Study (SIS) to determine the adequacy of SCE's Transmission System to accommodate the [REDACTED] Project. The study indicates that the system is adequate to accommodate the 25 MW of generation without transmission line modifications.

POWER FLOW STUDY RESULTS

The power flow study results show that no overloading problems are found on the transmission lines for base-case, N-1 and N-2 contingencies. Specifically:

Base Case (Spring and Summer Conditions)

There were no base case overloads attributed to [REDACTED]

Single Contingencies (Spring and Summer Conditions)

There were no single contingency overloads attributed to [REDACTED]

Double Contingencies (Spring and Summer Conditions)

There were no double contingency overloads attributed to [REDACTED]

TRANSIENT STABILITY AND POST TRANSIENT STUDIES

SCE used study findings from earlier Interconnection Studies for large projects electrically proximate to this project and concluded that there are no transient stability and post transient impacts to the SCE transmission system from this proposed project.

SHORT CIRCUIT DUTY STUDY

The data provided by [REDACTED] has been used to study the Short Circuit Duty contribution by the project on the affected Transmission System substation circuit breakers. The addition of the Project did not significantly increase Short Circuit Duty. Apparatus Engineering has evaluated our existing breakers and determined that there is not need for circuit breaker upgrades.

THREE-PHASE FAULT DUTY

The addition of the project has impacted four (4) 230kV substations with short circuit duty increases greater than 0.1kA.

SINGLE – LINE TO GROUND FAULT DUTY

The addition of the project has impacted two (2) 230kV substations with short circuit duty increases greater than 0.1kA.

See Tables 4.1 and 4.2 for more information

SCOPE OF WORK

The scope of work to accommodate the generation interconnection on the SCE Transmission System is listed below. This study has not assumed overload or short circuit mitigation requirements for projects ahead of it on the queue. The scope of work listed below are upgrades to mitigate pre-existing overloads, upon which this Project further increases the amount of overload, based on the current queue, at the time of this study.

- 1) No SCE Transmission System related components (Circuit Breakers and Transmission Lines) are triggered by the [REDACTED] Project. Distribution related components will be addressed by the Field Engineering SIS. The [REDACTED] Project is only exposed to Case B costs triggered by projects ahead of [REDACTED] in the queue.

COST OF UPGRADES

There is no cost of upgrades for the Transmission System assigned to the project, at this time. However, the assignment of network upgrade costs could change if the interconnection queue changes.

Note: Study results may be affected by changes in other projects ahead of the queue in the area. A re-study may be required if there are changes in the project queue or the scope of projects ahead in the queue. All cost estimates are rough order of magnitude, and are non-binding cost estimates.

EXHIBIT B

**SUB-TRANSMISSION/DISTRIBUTION
SYSTEM IMPACT STUDY EXECUTIVE
SUMMARY**

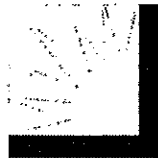
25.0 MW Generation Project

**Wholesale Distribution Access Tariff
System Impact Study**

September 24, 2007

Prepared by:

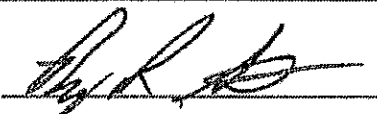
**Rodney Preijers – Distribution Engineering
Rebeca Sandoval – Distribution Engineering**



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SOUTHERN CALIFORNIA EDISON COMPANY

Approved by:


Randy R. Smith
Engineering Manager

EXECUTIVE SUMMARY

██████████ applied to Southern California Edison (SCE) Transmission and Distribution Business Units (TDBU) for distribution service under the terms of SCE's Wholesale Distribution Access Tariff (WDAT). ██████████ would own and operate a 27.6 megawatt (MW) gross output generating facility ██████████ with a net output of 25.0 MW to be interconnected to a dedicated position at the Brea 66 kilovolt (kV) switchrack. Distribution service pursuant to the WDAT is proposed to be from ██████████ to the California Independent System Operator (CAISO) grid at SCE's 230 kV Olinda Substation. The proposed in-service date of the ██████████

██████████ a generation system consisting of 27.6 MW ██████████
██████████
██████████ The generation facility would utilize ██████████
██████████ to interconnect the generation to the SCE's system. As requested by ██████████
██████████ SCE performed a System Impact Study to identify the general electrical system impacts on the distribution system as a result of the ██████████ project, possible mitigation measures to maintain conformance with SCE, CAISO, or other applicable reliability planning criteria, and non-binding order-of-magnitude cost estimates for these mitigation measures.

The System Impact Study consisted of a power flow analysis, three-phase short circuit duty analysis to determine any impacts that would be associated with the ██████████ project transmitting energy through SCE's distribution system to the CAISO grid at Olinda Substation. The study showed that, with the ██████████ project on-line:

- Thermal loadings on the SCE distribution facilities used to provide the requested WDAT service would all be within criteria limits.
- No 66 kV circuit breakers would need to be upgraded due to the ██████████ project.

Non-binding order-of-magnitude cost estimates for the required interconnection facilities and distribution system upgrades are as follows:

Interconnection (66 kV substation, 66 kV interconnection tie line, protection)	\$ 4.20M
New I.T. facilities	\$ 0.25M
RTU installed at Brea Power II	\$ 0.05M
Circuit breaker replacements (66 kV)	\$ 0.00M
35% ITCC Tax	\$ 1.58M
Total non-binding order-of-magnitude cost estimate	\$ 6.08M

Additional system studies (e.g., transient stability) will not be required unless requested by a third party. Refined cost estimates will be developed in a subsequent Facilities Study if requested by ██████████. Non-binding cost estimates do not include any G.O. 131D costs.

EXHIBIT C
COST SUMMARY

- Case A

Cost Estimate Summary (2010 Dollars)

Scope: Interconnect [redacted] Project to Brea Substation. Work scope involves upgrades at Brea, Olinda & Telegraph Substations; new Telecommunication Lines / Installations; new RTU at the Generator's Facility.

No.	ELEMENT	INTERCONNECTION FACILITIES (Subject to ITCC)	ONE TIME COSTS* (Not Subject to ITCC)	DISTRIBUTION UPGRADES (Subject to ITCC)	RELIABILITY UPGRADES* (Not Subject to ITCC)	ITCC ** (35%)	TOTAL
1	Substations						
1	Brea Substation Upgrades	\$ 950,000	\$ -	\$ -	\$ -	\$ 333,000	\$ 1,283,000
2	Brea Substation 66KV Breaker replacement	\$ 270,000	\$ -	\$ -	\$ -	\$ 95,000	\$ 365,000
3	Olinda Substation Breaker Replacement	\$ -	\$ 500,000	\$ 500,000	\$ -	\$ 175,000	\$ 675,000
4	Power System Control	\$ 93,000	\$ -	\$ -	\$ -	\$ 33,000	\$ 126,000
5	RTU at Brea Sub. Telecommunication	\$ 1,030,000	\$ -	\$ -	\$ -	\$ 361,000	\$ 1,391,000
Totals		\$ 2,343,000	\$ 500,000	\$ 500,000	\$ -	\$ 997,000	\$ 3,840,000

Additional Elements for Case B

Cost Estimate Summary (2010 Dollars)

Scope: Four sets of TRV's to upgrade two Circuit Breakers

No.	ELEMENT	INTERCONNECTION FACILITIES (Subject to ITCC)	ONE TIME COSTS* (Not Subject to ITCC)	DISTRIBUTION UPGRADES (Subject to ITCC)	RELIABILITY UPGRADES* (Not Subject to ITCC)	ITCC ** (35%)	TOTAL
6	Upgrade two 220kV Circuit Breakers	\$ -	\$ -	\$ -	\$ 616,000	\$ -	\$ 616,000
Totals		\$ -	\$ -	\$ -	\$ 616,000	\$ -	\$ 616,000

* Pursuant to FERC Order 2003A, ITCC is not collected on Reliability Upgrades.

** ITCC cost may be satisfied with a letter of credit in accordance with the tax provisions of the LGIA.