

[REDACTED]

SOUTHERN CALIFORNIA EDISON COMPANY

FACILITIES STUDY



MARCH 20, 2007

Prepared by:

Edgardo A. Romero

Approved by:

Charles E. Nieto

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I. Executive Summary

[REDACTED] applied to Southern California Edison (SCE) for the interconnection of 44.5MW of generation from their [REDACTED] Generating Facility [REDACTED] to the existing SCE Ameron – Etiwanda – Pipe 66kV Line, within the Etiwanda 66kV System, under the terms of SCE's Wholesale Distribution Access Tariff (WDAT).

The Project will be connected to the SCE 66kV Line via a new 66kV Interconnection Facility to be owned, operated and maintained by SCE.

For the purpose of this study, the new facility will be referred to as [REDACTED]. [REDACTED] will be a single – line facility, equipped with one circuit breaker and all required protective relays, connected to the SCE Etiwanda 66kV System by tapping the Ameron – Etiwanda – Pipe 66kV Line into it, and will serve [REDACTED] owned 66/13.8kV Transformer.

The [REDACTED] will be located adjacent to [REDACTED] and the [REDACTED] facilities will be connected by a single span of conductors.

The [REDACTED] will interconnect to the CAISO Grid at the Etiwanda Generating Station 220kV Bus.

The Project consists of one 13.8kV LM6000 Gas Turbine, with a Net Generation Capacity of 44.5MW, and [REDACTED] 45MVA 66/13.8kV step-up Transformer Bank to interconnect the generation to the SCE 66kV System.

The [REDACTED] will be installed inside the [REDACTED] property limit, just outside the peaker unit perimeter fence and both facilities will be connected via a short span of 66kV Line Conductors.

[REDACTED] requested an interconnection date of July 1, 2007. SCE is currently performing Engineering and Design activities and ordering the necessary equipment to meet this date.

A Transmission System Impact Study (SIS), dated December 18, 2006, was prepared to address the impact of the new generation to the SCE Transmission System.

A Sub – Transmission System Impact Study (SIS) dated December 22, 2006, was prepared to address the impact of the new generation to the SCE Sub – Transmission System.

CAISO reviewed the SIS's and granted Preliminary Interconnection Approval for the Mira Loma Peaker on a letter to SCE (Robert Lugo) dated January 29, 2007.

SEE EXHIBIT A: [REDACTED] AND 66kV LINE ARRANGEMENT.

SEE EXHIBIT B: TRANSMISSION SIS – EXECUTIVE SUMMARY.

SEE EXHIBIT C: SUB-TRANSMISSION SIS – EXECUTIVE SUMMARY.

SEE EXHIBIT D: CAISO LETTER TO SCE (ROBERT LUGO) DATED 01/29/07.

II. Transmission System Impact Study Results.

The SIS analyzed the System including all interconnections placed ahead of the Project in the Application Queue on line and concluded that:

1. The Project does not trigger any Base Case, N – 1 or N – 2 overloads.
2. The Project does not aggravate any pre-existing Base Case, N – 1 or N – 2 overloads.

3. The project does not impact the transient stability conditions on the Transmission System.
4. The project does not impact the post – transient conditions on the Transmission System.
5. The Project does increase the Three – Phase and / or Single Phase to Ground Short Circuit Duties by 0.1kA or more at the following [REDACTED] 500kV and [REDACTED] 220kV locations:

500kV:	Lugo	Serrano			
220kV:	Alamitos	Chino	Etiwanda	Hinson	Mira Loma
	San Bernardino	Serrano	Vincent	Vista	

The Transmission SIS considered a total of one hundred and [REDACTED] potential Generation Projects, presently ahead of the Project on the Interconnection Application Queue, as already interconnected to the SCE System.

SEE EXHIBIT D: EARLIER INTERCONNECTION – APPLICATION QUEUE.

The Transmission SIS concluded that a Facilities Study would be required to determine the scope of work and cost estimates for any required 500kV or 220kV Circuit Breaker replacements or upgrades.

III. Sub-Transmission System Impact Study Results

1. The Project does not trigger any Base Case, N – 1 or N – 2 overloads.
2. The Project does not aggravate any pre-existing Base Case, N – 1 or N – 2 overloads.
3. The Project does increase the Three – Phase and / or Single Phase to Ground Short Circuit Duties by 0.1kA or more at the following [REDACTED] 66kV locations:

[REDACTED]

The SIS initially concluded that the project requires the replacement of [REDACTED] 66kV CB's and the upgrade of [REDACTED] 220kV CB. However, changes in the CB Evaluation Process performed during the Facilities Study show different conclusions for both the Facilities and the Operational Studies.

Final results are shown on Section V – A of this Report and on the attached Addendum.

IV. 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. The required RTU to be installed at the Generating Facility will be installed by SCE and it is included in the Facilities Study.
- C. The following line protection equipment, to be installed at the [REDACTED] termination point of the 66kV Line connecting to [REDACTED] will be specified by SCE and provided by [REDACTED] and is not included in the Facilities Study.
 - [REDACTED] SEL-311L Line Current Differential Relay.

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: All facilities required exclusively by the Project

And

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

The facilities included on Case B are those additional facilities required to remedy situations caused by earlier Projects, placed ahead of the Project in the Application Queue, and are expected to be implemented by them.

However, in the event that any of these earlier Projects withdraws their Application, the Project may become responsible for any or all of these additional facilities.

CASE A:

- [REDACTED] Install a new 66kV Interconnection Facility.
- Ameron Substation Upgrade Pilot Wire Protection on Etiwanda – Pipe 66kV Line Position to allow for the line to be changed to the new Etiwanda [REDACTED] – Pipe 66kV Line.
- Chino Substation Upgrade [REDACTED] 50kA 220kV CB to 63kA.
- Ameron – Etiwanda – Pipe 66kV Line Tap the line into [REDACTED]
- Telecommunications Install new circuits as required to support new Ameron – Etiwanda [REDACTED] – Pipe 66kV Line Protection Scheme and RTU.
- Power System Control Install new RTU's, at the Generating Facility and the new [REDACTED]

CASE B:

- Etiwanda Gen. Sta. Replace [REDACTED] 220kV CB's with 80KA Rated units and upgrade the 220kV Switchyard to 80KA Rating.
- Mesa Substation Replace [REDACTED] 220kV CB's with 80KA Rated units and upgrade the 220kV Switchyard to 80KA Rating.
- Mira Loma Substation Replace [REDACTED] 220kV CB's with 80KA Rated units and upgrade the 220kV Switchyard to 80KA Rating.

NOTE: The Short Circuit Duties (SCD) at the Etiwanda Gen. Sta. and the Mesa and Mira Loma Substations is higher than the present design standard of 63kA.

This increase in SCD requires that, in addition to the CB replacement, the 220kV Switchyard at each location be upgraded to 80kA Rating.

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 evaluation included a total of [REDACTED] 500kV CB's at [REDACTED] locations, [REDACTED] 220kV CB's at [REDACTED] locations and [REDACTED] 66kV CB's at [REDACTED] locations.

The results of the evaluation are shown above as elements of the Case A and Case B scopes.

SEE EXHIBIT E: FACILITIES STUDY SCOPE – ADDITIONAL DETAILS.

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 upgrades required that were triggered by earlier Applicants placed ahead of the Project in the Application Queue.

In the event that any Applicant, presently placed ahead of the Project in the Application Queue, withdraws its Application, the system would need to be re-evaluated. The new evaluation may conclude that the Project would now trigger any of these upgrades and would then become responsible for some or all of the upgrades identified on 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:	\$ 3,251,000
CASE B (May be added to Case A):	\$82,111,000
POSSIBLE MAXIMUM COST EXPOSURE:	\$85,362,000

NOTE:

The costs of upgrading the 220kV Switchyards at the Etiwanda G.S. and the Mesa and Mira Loma Substations to 80kA Rating is only an approximate value based on an existing estimate prepared for a similar facility.

SEE EXHIBIT F: COST SUMMARY.

VI. Project Timeline

1. The Project is presently under Engineering and Design and major equipment has already been ordered.
2. The present Project Schedule shows an Interconnection Date of July 1, 2007.
3. At this time there is no definite schedule for the replacement and upgrades of 220kV Circuit Breakers at all locations addressed as Case B.
4. For the purpose of this Facilities Study these upgrades are shown in 2008 Dollars but they may still be postponed beyond 2008 if the System does not require them until later.

5. Future Operational Studies for those interconnections placed ahead of the Project in the Application Queue, but after the Project in the Operational Queue, will determine the actual dates when these upgrades will be required.

VII. Conclusions

- A. The estimated cost for the Interconnection is approximately \$3,251,000 for Case A with the potential additional cost of \$82,111,000 for Case B for a total Maximum Exposure of \$85,362,000.
- B. The costs indicated in the Cost Summary are shown 2007 Dollars, except for the cost of the 220kV Circuit Breaker replacements and upgrades identified under Case B, which are shown in 2008 Dollars due to the time required for these elements of the Project and the uncertainty as to the exact time when the SCE Transmission System would really require these upgrades.
These costs are not firm 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.
- C. [REDACTED] will pay SCE based on actual costs. The estimated Project Cost will be reconciled to actual costs upon closure of the subject work orders. The necessary billing adjustments will be made at that time.

EXHIBIT A



and

66kV LINE ARRANGEMENT

**PAGES OMITTED FOR
CEII REGULATIONS**

EXHIBIT B

**TRANSMISSION
SYSTEM IMPACT STUDY
EXECUTIVE SUMMARY**

[REDACTED]

SYSTEM IMPACT STUDY

December 18, 2006



SOUTHERN CALIFORNIA
EDISON[®]
An EDISON INTERNATIONAL[®] Company

Prepared by

Brandon Besch / David Franklin

Southern California Edison Company

Patricia C. Arons

Approved by Patricia Arons

for

EXECUTIVE SUMMARY

INTRODUCTION

[REDACTED] applied to Southern California Edison Transmission Distribution Business Unit (TDBU) for Interconnection pursuant to Wholesale Distribution Access Tariff (WDAT). [REDACTED] proposed to interconnect a new 44.55 MW generation project [REDACTED] to the 66kV bus at Etiwanda substation. The in-service date proposed by [REDACTED] is July 2, 2007. *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 Company (SCE) has performed a System Impact Study (SIS) to determine the adequacy of SCE's transmission system to accommodate the [REDACTED]. The results of the SIS will be used as the basis to determine project cost allocation for facility upgrades in the Facilities Study. The study indicates that the system is adequate to accommodate the 44.55 MW of generation without transmission line modifications. However, Circuit Breaker replacements, for greater capacity, are required. A Facilities Study will be required for the [REDACTED].

RESULTS / CONCLUSION

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 close to this project and concluded that there are no negative transient stability and post - transient impacts to the SCE transmission system from this proposed project.

SHORT CIRCUIT DUTY STUDY RESULTS

3-PHASE FAULT DUTY

Evaluate the need for circuit breaker replacement at [REDACTED] - 500kV substation and [REDACTED] - 230kV substation.

SINGLE – LINE TO GROUND FAULT DUTY

Evaluate the need for circuit breaker replacement at [redacted] – 500kV substations and [redacted] – 230kV substations.

SCOPE OF WORK

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

Power Flow Study Conclusions

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 close to this project and concluded that there are no negative transient stability and post – transient impacts to the SCE transmission system from this proposed project.

Short Circuit Duty Study Conclusions

3-PHASE FAULT DUTY

Evaluate the need for circuit breaker replacement at [redacted] – 500kV substation and [redacted] – 230kV substation.

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SINGLE - LINE TO GROUND FAULT DUTY

Evaluate the need for circuit breaker replacement at [redacted] - 500kV substations and [redacted] - 230kV substations.

Bus Name	Rank	kv
Lugo	1	
Etiwanda	4	
Mira Loma	3	
San Bernar	1	
Serrano	1	
Vista	1	

COST OF UPGRAD...

No overload problems were identified for [redacted]. This project did not increase any existing loading by 1% or more.

Engineering has evaluated the circuit breakers at all substations where the project contributed to the Short Circuit Duty results in an increase of 0.1kA or greater.

Circuit breaker replacements and upgrades to accommodate the generation interconnection on the SCE network are listed below. This study has not assumed overload mitigation requirements for projects ahead of the queue. The total cost of 37,111,000 was not triggered by the [redacted] and only shown as maximum exposure in case of changes in the queue.

The following cost are given in Year 2008 Level Dollars and do not include 35% ITCC Tax.

CASE A - Triggered by [redacted] Etiwanda Project

STATION	SYSTEM	Replace	Upgrade	Sets of TRV's required	Cost of CB	Cost of TRV set of 3	Sub-Total CB	Sub-Total TRV	GRAND TOTAL
Chino	220kV		1	1		\$ 144,000	\$ -	\$ 144,000	\$ 144,000
		0	1				\$ -	\$ 144,000	\$ 144,000

CASE B - Triggered by earlier Projects ahead of [redacted] Etiwanda in Application Queue

STATION	SYSTEM	Replace	Upgrade	Sets of TRV's required	Cost of CB	Cost of TRV set of 3	Sub-Total CB	Sub-Total TRV	GRAND TOTAL
Etiwanda **	220kV	24			\$ 629,000		\$ 15,096,000	\$ -	\$ 15,096,000

Mesa *	220kV	23			\$ 629,000		\$ 14,467,000	- \$	\$ 14,467,000
Mira Loma*	220kV	12			\$ 629,000		\$ 7,548,000	- \$	\$ 7,548,000
		59	0				\$ 37,111,000	- \$	\$ 37,111,000

*Additional costs of upgrading the Etiwanda, Mira Loma and Mesa 220kV Switchyards to 83kA is approximately \$15,000,000 at each location.

**Requires SCE's Field Engineering concurrence.

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 C

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

WDT 230

System Impact Study

December 22, 2006

Prepared by:

***Eric Hester – Distribution Engineering
Roger Salas P.E. – Distribution Engineering***



**SOUTHERN CALIFORNIA
EDISON**

An EDISON INTERNATIONALSM Company

SOUTHERN CALIFORNIA EDISON COMPANY

Approved by:

***Randy R. Smith
Engineering Manager***

EXECUTIVE SUMMARY

[REDACTED] 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"). [REDACTED] will own and operate a 45.5 MW generating facility [REDACTED] to be interconnected at a new interconnection facilities to be constructed by SCE. [REDACTED] will be served by tapping the Etiwanda-Ameron-Pipe transmission line coming from Etiwanda 66KV switchrack. Distribution service pursuant to the WDAT is proposed to be from the [REDACTED] to the California Independent System Operator ("ISO") grid at SCE's 230 kV Etiwanda Substation. The proposed in-service date of the [REDACTED] is July 2, 2007.

The [REDACTED] is a generation system consisting of [REDACTED] 13.8 kV, 71.2 KVA LM6000 Gas Turbine with net generation export of 44.5 MW. The generation facility will utilize [REDACTED] 45 MVA, 13.8 kV/66 kV step-up transformer to interconnect the generator to the SCE's system. As requested by [REDACTED] SCE performed a System Impact Study to identify the general electrical system impacts of the [REDACTED] possible mitigation measures to maintain conformance with SCE, ISO, 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 analysis and single-line-to-ground short circuit duty to determine whether the energy associated with the [REDACTED] can be transmitted through SCE's system to the ISO grid at Etiwanda Substation, without creating the need for modifications to SCE's system and/or the ISO grid. The study showed that, with the [REDACTED] on-line:

- Thermal loadings on the SCE subtransmission facilities used to provide the requested WDAT service were all within criteria limits.
- [REDACTED] 66kV breakers will need to be replaced and [REDACTED] 230kV breaker needs to be upgraded due to the [REDACTED]
- Appendix B details study results for the ISO-controlled transmission grid.

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

Interconnection (Substation and 66kV interconnection tie line)	\$1.69M
Protection Upgrades	\$0.30 M
New IT Facilities	\$0.25 M
RTU installed at [REDACTED]	\$ 0.05M
Circuit breaker replacements (66 kV, 230 kV)	\$ 4.86M
35% ITCC Tax	\$ 2.50M
Total non-binding order of magnitude cost estimate	\$9.65M

Additional system studies (i.e., 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 [REDACTED] Non-binding cost estimate does not include any GO 131D costs.

MEMORANDUM

Date: January 17, 2007

Subject: [REDACTED] Re-evaluation

To: [REDACTED]

From: Southern California Transmission and Distribution Business Unit – Field Engineering

[REDACTED] 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"). [REDACTED] will own and operate a 45.5 MW generating facility [REDACTED] to be interconnected at a new interconnection facilities to be constructed by SCE. [REDACTED] substation will be served by tapping the Etiwanda-Ameron Pipe transmission line coming from Etiwanda 66KV switchrack. Distribution service pursuant to the WDAT is proposed to be from the [REDACTED] to the California Independent System Operator ("ISO") grid at SCE's 230 kV Etiwanda Substation. The proposed in-service date of the [REDACTED] is July 2, 2007.

On December 22, 2006, TDBU issued a System Impact Study which outlined the distribution system upgrades which are triggered by the interconnection of the [REDACTED]. This study indicated the following:

Application Queue

- [REDACTED] 66kV breakers will need to be replaced due to the [REDACTED]
- Non-binding cost estimate of \$9.65 Million

Operational Queue

- [REDACTED] 66kV breakers will need to be replaced due to the [REDACTED]
- Non-binding cost estimate of \$3.58 Million

Further investigation and analysis of the [REDACTED] interconnection indicates the following:

Application and Operational Queue

- No 66kV breakers will need to be replaced due to the [REDACTED]
- Non-binding cost estimate of \$3.09 Million

Interconnection (Substation and 66kV interconnection tie line)	\$1.69M
Protection Upgrades	\$0.30M
New IT Facilities	\$0.25M
RTU Installed at [REDACTED]	\$0.05M
Circuit breaker replacements (66 kV)	\$0.00M
35% ITCC Tax	\$0.80M
Total non-binding order of magnitude cost estimate	\$3.09M

Prepared by:
Roger Salas P.E.

Approved by:


Randy R. Smith
Engineering Manager

EXHIBIT D

**CAISO LETTER TO SCE
(ROBERT LUGO) DATED 01/29/07**



January 29, 2007

Mr. Robert Lugo
Manager of Grid Interconnections & Contract Development
Southern California Edison
PO Box 800
Rosemead, CA 91770

Subject: [REDACTED] - System Impact Study

Dear Mr. Lugo:

The California ISO (CAISO) has reviewed the Southern California Edison Company (SCE) System Impact Study (SIS) dated December 15, 2006 for the [REDACTED] ("the Project") proposed by the [REDACTED]. For the proposed project, the maximum net output to the grid will be 44.55 MW; and the in-service date will be July 2 2007. The Project proposes to interconnect to the SCE Ellwanda Substation 66kV bus.

Based on our review of the SIS, the CAISO is granting preliminary interconnection approval to the [REDACTED] provided that the Project meets the conditions outlined in the attachment.

Please note that this letter approving the interconnection of the Project allows the Project to be eligible to deliver the Project's output to the CAISO Controlled Grid using available transmission. However, it does not establish the Project's level of deliverability for purposes of determining its Net Qualifying Capacity under the CAISO Tariff and in accordance with CPUC-adopted Resource Adequacy Rules. Therefore, this letter makes no representation, and [REDACTED] cannot rely on any statements herein, regarding the ability, or amount, of the output of the Project to be eligible to sell Resource Adequacy Capacity. We encourage the [REDACTED] to continue to follow the baseline deliverability studies ongoing at the CAISO. For more information on generation deliverability, please reference the web link: <http://www.caiso.com/181c/181c902120c80.html>

If you have questions about the CAISO review of this study, please contact Yi Zhang at (916) 608-5734 (yzhang@caiso.com) or myself at (916) 608-5880 (GDeShazo@caiso.com).

Sincerely,

Original signed by Gary DeShazo

Gary DeShazo
Director of Regional Transmission
California ISO

cc:

Paul Phelan

[REDACTED]

Robert J. Lugo (SCE via e-mail, Robert.Lugo@sce.com)
Antonio Velarde (SCE via Antonio.Velarde@sce.com)
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Armando Perez (CAISO via email)
Judy Nickel (CAISO via e-mail)
Dennis Peters (CAISO via e-mail)
CAISO Regional Transmission – South (CAISO via e-mail)

Attachment
Summary Information about the [REDACTED]

1 General Background

[REDACTED] applied to the SCE Transmission and Distribution Business Unit (TDBU) for interconnection of a new 44.55 MW generation project [REDACTED] (or the Project) to the 66kV bus at the SCE Etiwanda substation, pursuant to the SCE Wholesale Distribution Access Tariff (WDAT). The in-service date proposed by the [REDACTED] is July 2, 2007.

The proposed Project is geographically located on the parcel of land in the Northwest corner of SCE's Etiwanda Substation property. The Project has proposed to connect to the 66kV bus at the SCE Etiwanda Substation with a loop or tap of the existing Ameron -- Pipe 66kV distribution line. Figure 1 shows the single system configuration for the Project.

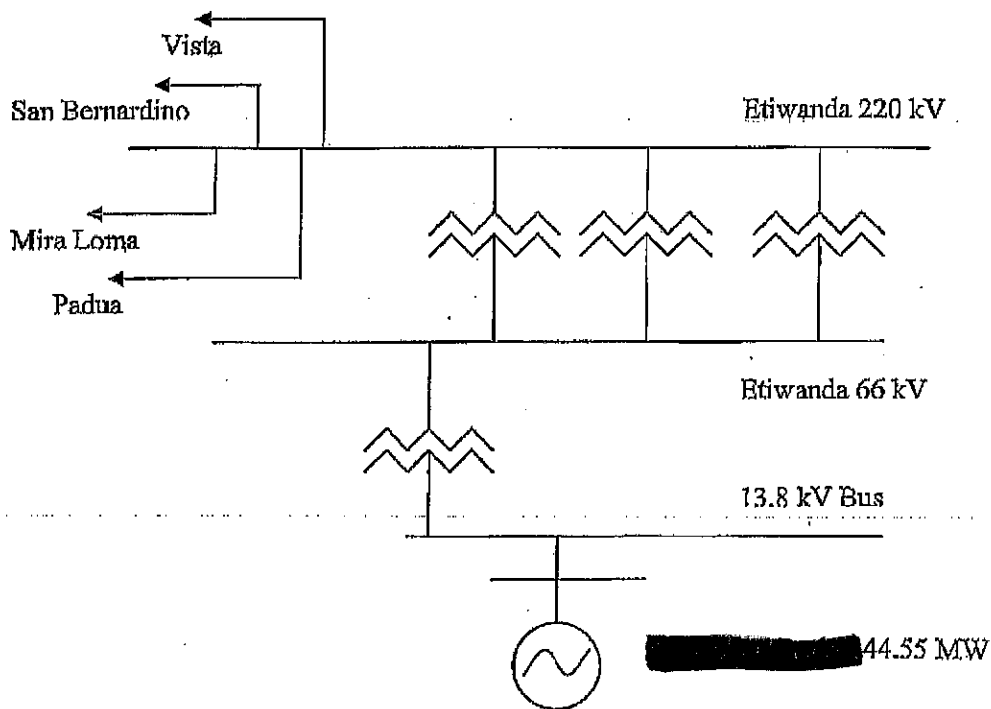


Figure 1. System Configuration of the [REDACTED]

2 Study Assumptions and Conclusions

The SIS was based on the load scenarios of 2007 Heavy Summer load forecast (one-in-ten-year heat wave assumption) and 2008 Light Spring load forecasts. The study conclusions are summarized as follows.

2.1 Power Flow Analysis

The power flow study identified no overloading caused by the Project.

2.2 Short-Circuit Duty Evaluation

In three-phase and single line to ground short circuit duty evaluations, the Project does not trigger any circuit breaker upgrades. All replacement/upgrade of the circuit breakers were identified as pre-project conditions. Should any projects placed ahead of the [REDACTED] in the application queue withdraw, a restudy must be performed to re-evaluate the short-circuit duty of all circuit breakers.

2.3 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.

2.4 Operational Studies

The SCE conducts further operational study to address the extent of network upgrades that should be built by the Project in-service date. Power flow studies considered all existing generation and all projects which are expected to be on line by the in-service date of the Project, July 2, 2007.

There were overloads under Base Case, Single and Double Contingencies that were identified for multiple lines throughout the system that are not attributed to the addition of the Project. These overloads have been identified in the SCE 2007 – 2016 Expansion Plan. The planned mitigations are also addressed in the SCE Expansion Plan. Transient stability and post transient studies concluded that there are no transient stability and post transient impacts to the SCE transmission system from the Project.

3 CAISO Comments and Conclusions

Based on the results from the SIS, the CAISO is granting preliminary interconnection approval to the [REDACTED] to connect to the grid, provided that the Project meets the conditions outlined in this attachment. The Project can move to the Facilities Study stage if the [REDACTED] chooses to proceed with the Project.

Please note that this letter approving the interconnection of the Project allows the Project to be eligible to deliver the Project's output to the CAISO Controlled Grid using available transmission. However, it does not establish the Project's level of deliverability for purposes of determining its Net Qualifying Capacity under the CAISO Tariff and in accordance with CPUC-adopted Resource Adequacy Rules. Therefore, this letter makes no representation, and the Interconnection Customer cannot rely on any statements herein, regarding the ability, or amount, of the output of the Project to be eligible to sell Resource Adequacy Capacity.

We encourage the [REDACTED] to follow the baseline deliverability studies ongoing at the CAISO. For more information on generation deliverability, please reference the following web links:
<http://www.caiso.com/181c/181c902120c80.html>

EXHIBIT E

**EARLIER INTERCONNECTIONS –
APPLICATION QUEUE**

APPENDIX A. Application Queue

Project Name	Project Size (MW)
TOT005	830
WDT011	9
WDT034	2.1
WDT016	11.57
TOT022	16.5
WDT028	2.5
TOT023	3.71
1114	2.8
TOT015	45
TOT004	1000
TOT010	450
TOT018	750
WDT044	49.9
WDT014	5.6
WDT038	110
WDT040	17.1
WDT041	34
WDT042	40
TOT019	44.4
TOT021	22.2
TOT051	22.44
TOT032	850
TOT040	110
TOT041	280
WDT054	16.5
WDT072	10.5

TOT04B	45.3
TOT056	90.6
WDT073	80
WDT075	39.6
WDT082	19.8
WDT080	28.5
TOT005	20
7019	1.5
WDT086	8
WDT085	2.4
WDT063	42.6
TOT067	330
WDT092	66
7033	6
7030	6
7044	2.25
2495	1.28
2502	2.7
7045	7.3
7034	2
7042	1
7068	47
WDT109	4.2
WDT110	5.6
WDT111	3.93
7056	2.12
WDT098	40
7057	1.3
2530	1.21

7075	2
7071	1.13
7036	3.8
2535	1
2521	10.6
EAK049	134
2529	2.28
2522	1.06
7070	5.74
2538	14.66
2540	1.1
7088	8
WDT118	9
WDT112	16.54
7084	2.4
TOT095	185
WDT019	45.5
TOT100	63
7094	1.4
7010	3.3
7100	1.5
7101	1.77
WDT133	48.3
WDT129	2.56
WDT123	8.73
WDT123	3
WDT123	6.75
2531	2.4
2546	4.9

TOT096	50
WDT124	32
WDT082	1.2
2543	1.1
TOT079	520
TOT102	65
TOT108	300
WDT147	45.6
TOT109	72
TOT111	17
TOT112	82
WDT131	8.4
TOT113	201
TOT117	300
TOT116	10
WDT163	5.6
WDT164	80
TOT119	157
WDT165	325
TOT120	100.5
WDT177	96
TOT121	599
WDT176	6.5
TOT037	810
TOT127	65
TOT129	1650
WDT179	49.9
TOT135	500.5
WDT182	507

TOT138	424.8
TOT131	850
TOT132	500
WDT190	49.9
TOT148	250
WDT205	99
TOT146	51
TOT149	610
TOT150	60
WDT213	49
TOT151	400
TOT152	120
TOT155	33
TOT156	34
TOT166	613.5
TOT160	570
TOT153	51
TOT154	570
TOT161	220
TOT164	180
TOT162	550
TOT163	600
TOT165	160
TOT167	120
TOT149	304
WDT221	8.5
TOT159	635
TOT157	600
TOT158	1400

CSDLA Puente Hills Project A	8
TOT171	150
TOT169	50
TOT170	150
WDT223	49.9
TOT172	550
TOT173	500
TOT174	1200
WDT227	102
WDT228	63
TOT175	300
[REDACTED] - WDT230	44.55

EXHIBIT F

**FACILITES STUDY SCOPE –
ADDITIONAL DETAILS**

[REDACTED]

FACILITIES STUDY SCOPE – ADDITIONAL DETAIL
CASE A

A. Substations:

1. [REDACTED]

Install new 66kV interconnection Facility equipped with [REDACTED] circuit breaker and all required protection relays to serve the [REDACTED]

The work requires installation of the following equipment:

- One 66KV switchrack equipped as follows:
 - [REDACTED] 22 Ft. Wide by 30 Ft. High 66kV Dead-End Structure
 - [REDACTED] 66kV 2000A 40kA Circuit Breaker
 - [REDACTED] 66kV vertically mounted, group-operated, disconnect switches
 - [REDACTED] 66kV horizontally mounted, group-operated by-pass disc. switch.
 - [REDACTED] 69kV-197/115 X 115/67V, 7.5kVA potential transformers
- [REDACTED] 20 Ft. x 16 Ft. Mechanical-Electrical Equipment Room (MEER) to house the following equipment:
 - [REDACTED] cell batteries and battery charger
 - CB controls and metering
 - Remote Terminal Unit (RTU IR 8600)
 - Station Light & Power Panel
 - AC & DC Distribution Panels
 - The following protection relays:
 - [REDACTED] HCB w/PMA Line Current Differential Relay with Pilot Wire Monitor;
 - [REDACTED] SEL-311C Distance and Directional Phase & Ground Over-current Relay
 - [REDACTED] SEL-311L Line Current Differential Relay with dual Fiber Optic Channels
 - [REDACTED] SEL-351 Directional Phase & Ground Over-current Relay
 - [REDACTED] SEL-2030 Communication processor
 - [REDACTED] telecommunications terminal rack
- 280 Linear Ft. of perimeter fence with barbed wire and a 16-Ft. Double Door gate to cover an approximate area of 65 Ft. x 75Ft..
- [REDACTED] 5" PVC conduits to connect the fiber optic cable from the MEER to the [REDACTED]
- All required conduit and control cable to connect the CB controls and metering to the MEER building
- Ground grid to cover an approximate area of 71 ft. x 81F. (3 ft. outside fence)

2. **Ameron Substation:**

Install a Balancing Resistor on Pilot Wire Protection Scheme of the existing Etiwanda – Pipe 66kV Line to allow the line to be changed to the new Etiwanda – [REDACTED] – Pipe 66kV line. Also update all station drawings and data base to show the new line name.

3. **Chino Substation:**

Install one set of Transient Recovery Voltage (TRV) Line to Ground Capacitors (Total of three units) to upgrade one 220kV 50kA CB to 63kA Rating.

B. Sub - Transmission Line:

Etiwanda – Ameron – Pipe 66kV Line:

Tap the existing line to serve the Grapeland Substation and form a new Etiwanda – Ameron – [REDACTED] – Pipe 66kV Line.

This construction requires the installation of [REDACTED] 35Ft. and [REDACTED] 70Ft. wood poles and 30 Circuit Ft. of new 954CAS Conductors plus the replacement and relocation of [REDACTED] existing 66kV line Switch.

C. Telecommunications:

Install [REDACTED] fiber optic cable from [REDACTED] to the [REDACTED] and taps from the existing fiber and copper pilot wire cables into [REDACTED]. Also install 3-Node Optical Multiplex System and Communications Alarm Equipment.

D. Power System Controls:

1. Main RTU at Generating Facility.

Install a new full size real-time Remote Terminal Unit (RTU) at the [REDACTED] to monitor the following elements:

- Net and Gross MW
- MVAR
- Amps on each phase
- Voltage at the Generator Bus
- Unit Status
- Unit Circuit Breaker Status

The RTU will be connected to the [REDACTED] to collect the data described above. This information will be transmitted to the Mira Loma Regional Control Center (RCC). The RTU will use Distributed Network Protocol (DNP) to communicate with the RCC.

2. Main RTU at [REDACTED]

Install a new full size real-time Remote Terminal Unit (RTU) at [REDACTED] to monitor and control the following elements:

- Net and Gross MW
- MVAR
- Amps on each phase
- Bus Voltage
- Circuit Breaker Status and Control
- Unit Circuit Breaker Status

The RTU will be connected to the [REDACTED] to collect the data and provide CB control as described above. This information will be transmitted to the Mira Loma Regional Control Center (RCC). The RTU will use Distributed Network Protocol (DNP) to communicate with the RCC.

**FACILITIES STUDY SCOPE – ADDITIONAL DETAIL
ADDITIONAL ELEMENTS FOR CASE B**

A. Substations:

1. Etiwanda Gen. Sta.:

Replace [REDACTED] 220kV 63kA CB's with new 80kA Rated units and upgrade the 220kV Switchyard to 80kA Rating.

2. Mesa Substation:

Replace [REDACTED] 220kV 63kA CB's with new 80kA Rated units and upgrade the 220kV Switchyard to 80kA Rating.

3. Mira Loma Substation:

Replace [REDACTED] 220kV 63kA CB's with new 80kA Rated units and upgrade the 220kV Switchyard to 80kA Rating.

NOTE RELATED TO ELEMENTS 1, 2 and 3 ABOVE:

- The scope of work for the upgrades of the Etiwanda, Mesa and Mira Loma 220kV Switchyards to 80kA Rating has not been completed at this time.
- A scope of work and cost estimate has been prepared for the upgrade of a similar facility.
- At this time it is expected that the type of upgrades for this location would be very similar to those already scoped and estimated for the similar facility.
- Based on this assumption, it is expected that, in addition to the CB replacements addressed above, the following upgrades would be required:
 1. Replacement of all 220kV Disconnect Switches.
 2. Replacement of all 220kV Surge Arresters.
 3. Replacement of all line and bank vertical risers with tubular conductors.
 4. Replacement of all 4/0CU connections to the ground grid with new 350KCMIL ACSR.
 5. Installation of new sections of 350KCMIL ACSR Ground Grid to be connected to the existing 4/0CU Grid.

E. A. ROMERO
03/20/07

EXHIBIT G
COST SUMMARY

Elements for Case A

Cost Estimate Summary (2007 Dollars)

Scope:

Interconnect 47.21MW of Net Generation to the SCE 66kV Bus.

ELEMENT	INTERCONNECTION FACILITIES	DISTRIBUTION SYSTEM UPGRADES	RELIABILITY UPGRADES	Income Tax Component of Contribution *	ONE TIME PAYMENT
- New 66kV Interconnection Facility	\$ 150,000	\$ 1,377,000	\$ -	\$ 534,000	\$ 2,061,000
Ameron Sub. - Upgrade Pilot Wire Protection	\$ -	\$ 50,000	\$ -	\$ 18,000	\$ 68,000
Chino Sub. - Upgrade 220kV CB	\$ -	\$ -	\$ 144,000	\$ -	\$ 144,000
Etiwanda - Ameron - Pipe 66kV Line - Tap into Telecommunications - Line Protection & RTU	\$ 155,000	\$ -	\$ -	\$ 54,000	\$ 209,000
Power Systems Control - RTU at [REDACTED]	\$ 503,000	\$ -	\$ -	\$ 176,000	\$ 679,000
Power Systems Control - RTU at [REDACTED]	\$ 33,000	\$ -	\$ -	\$ 12,000	\$ 45,000
TOTAL	\$ 841,000	\$ 1,450,000	\$ 144,000	\$ 806,000	\$ 3,251,000

Additional Elements for Case B

Cost Estimate Summary (2008 Dollars)

Scope:

Replace 220kV CB's at [REDACTED] locations and upgrade [REDACTED] 220kV Switchyards to 80kA Rating.

ELEMENT	INTERCONNECTION FACILITIES	DISTRIBUTION SYSTEM UPGRADES	RELIABILITY UPGRADES	Income Tax Component of Contribution *	ONE TIME PAYMENT
Etiwanda Gen. Sta. - Replace 220kV CB's	\$ -	\$ -	\$ 15,096,000	\$ -	\$ 15,096,000
Mesa Sub. - Replace 220kV CB's	\$ -	\$ -	\$ 14,467,000	\$ -	\$ 14,467,000
Mira Loma Sub. - Replace 220kV CB's	\$ -	\$ -	\$ 7,548,000	\$ -	\$ 7,548,000
Etiwanda Gen. Sta. - Upgrade 220kV Switchyard to 80kA Rating **	\$ -	\$ -	\$ 15,000,000	\$ -	\$ 15,000,000
Mesa Sub. - Upgrade 220kV Switchyard to 80kA Rating **	\$ -	\$ -	\$ 15,000,000	\$ -	\$ 15,000,000
Mira Loma Sub. - Upgrade 220kV Switchyard to 80kA Rating **	\$ -	\$ -	\$ 15,000,000	\$ -	\$ 15,000,000
TOTAL	\$ -	\$ -	\$ 82,111,000	\$ -	\$ 82,111,000

This document includes confidential trade secrets and proprietary information of Southern California Edison, to be used only by the [REDACTED] in connection with its evaluation of this Facility Study Proposal. Southern California Edison retains all rights to maintain the confidentiality of this information and requests that [REDACTED]'s confidentiality.

* ITCC tax (calculated at 35%) is collected via Letter of Credit.

** Pursuant to FERC Order 2003A, there will be no ITCC collected on Reliability Upgrades.

*** The costs of upgrading the Etiwanda, Mesa and Mira Loma Substation 220kV Switchyards to 80kA Rating is only an approximate value based on an existing estimate prepared for a similar facility.