Appendix A – WDT270

[redacted]

Final Report

July 14, 2010

This study has been completed in coordination with Southern California Edison Cluster Large Generator Interconnection Procedures (CLGIP) for Interconnection Requests in a Queue Cluster Window

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1. Executive Summary

[redacted] an Interconnection Customer (IC), submitted a completed Interconnection Request (IR) to Southern California Edison Company ("SCE") for the interconnection of its [redacted] (Project), pursuant to the Cluster Large Generator Interconnection Procedures ("CLGIP") under the SCE Wholesale Distribution Access Tariff ("WDAT"). The Project will utilize SunPower solar inverters with a facility maximum net output of 33 MW to the requested Point of Interconnection (POI) on Southern California Edison Company's (SCE) Littlerock – Wilsona 66 kV line. The IC has proposed a Commercial Operation Date of October 1, 2012 for the Project.

In accordance with the Federal Energy Regulatory Commission (FERC) Cluster Large Generator Interconnection Procedures ("CLGIP"), SCE Transmission and Interconnection Planning performed a Phase II Interconnection Study where the Project was grouped with Transition Cluster projects in a Phase II Interconnection Study (Transition Cluster Phase II Study or Phase II Study) to determine the impacts of the group as well as impacts of the Project on the CAISO Controlled Grid.

The group report has been prepared separately identifying the combined impacts of all projects in the group on the CAISO Controlled Grid. This individual report focuses only on the impacts associated with the Project.

The report provides the following:

1. Transmission system impacts caused by the Project;

2. System reinforcements necessary to mitigate the adverse impacts caused by the Project under various system conditions; and

3. A list of required facilities and a non-binding, good faith estimate of (a) the Project's cost responsibility, and (b) the time required to permit, engineer, design, procure and construct these facilities.

The Phase II Study results have determined that the Project contributes to overloading of transmission facilities for which mitigation plans have been proposed. These mitigation plans include the use of congestion management for base case and contingency overloads, and the use of Special Protection System (SPS) under identified contingency outage conditions.

In addition, the Project is partly responsible for overstressing circuit breakers at the Vincent 500 kV, Windhub 220 kV[1], and Antelope 66 kV buses.

[1] Identification of facility voltages (220 kV) in this Phase II Study are shown consistent with SCE System Operating Bulletin 123. However, all studies were predicated on the base voltages reflected in the Western Electricity Coordinating Council (WECC) base cases. For the SCE bulk power system, the WECC base cases reflect 230 kV and 500 kV base voltages; consequently, all per-unit calculations presented were based on 230 kV and 500 kV voltages.

The Project contributes to reactive power deficiencies in the transmission system under base case and contingency outage conditions, and voltage criteria violations under contingency conditions. The study concluded that use of congestion management under base.case conditions to limit South of Vincent flows to 8500 MW or less will be required.

The non-binding costs to interconnect the Project are:

Interconnection Facilities[2]	**$10,199,000** including ITCC[3];
Network Upgrades[4]	**$209,000**
Distribution Upgrades[5]	**$12,958,000**

The anticipated time to construct the facilities associated with the Project is approximately 48 months from the signing of the Large Generator Interconnection Agreement (LGIA. In addition there may be operational constraints related to the construction of upgrades to accommodate projects ahead in queue. See Section 9 "Operational Studies" for additional details.

2. Project and Interconnection Information

During the period between the Transition Cluster Phase I and Phase II technical analysis, the IC submitted a revised Appendix B to the CAISO LGIP which requested modifications to the Project's original plan. As a result of this request, SCE applied the following changes to the Project's depiction in the Transition Cluster Phase II Study.

Project Changes in Phase II Study:

a. Technology Change from Solar-Thermal to PV

Table 2-1 provides the Phase II general information about the project.

Table 2-1: [redacted]

Project Location	[redacted]
SCE Planning Area	[redacted]
Number and Type of Generators	[redacted]
Interconnection Voltage	[redacted]

[2] The transmission facilities necessary to physically and electrically interconnect the Project to the CAISO Controlled Grid at the point of interconnection. These costs are not reimbursable.
[3] Income Tax Component of Contribution.
[4] The additions, modifications, and upgrades to the CAISO Controlled Grid required at or beyond the Point of Interconnection to accommodate the interconnection of the Generating Facility to the CAISO Controlled Grid. Network Upgrades shall consist of Delivery Network Upgrades and Reliability Network Upgrades.
[5] These upgrades are not part of the CAISO Controlled Grid and are not reimbursable

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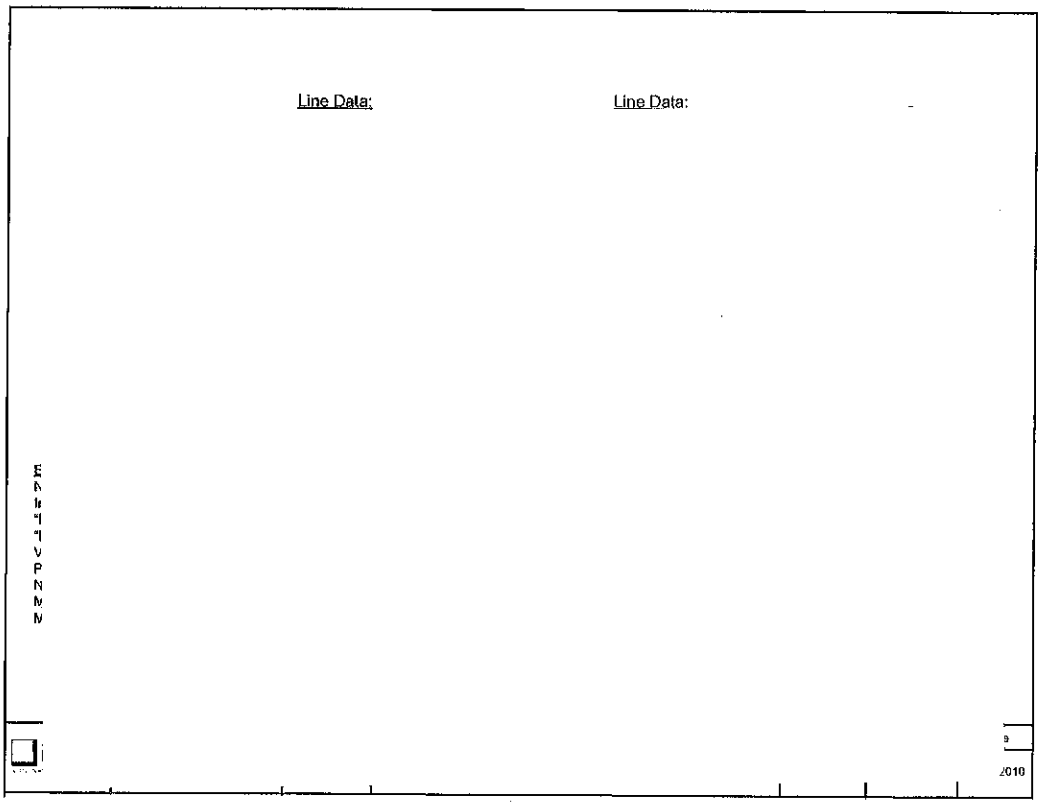

Figure 2-2: Single Line Diagram as modeled in the Phase II Study

3. Study Assumptions

For details about the Transition Cluster interconnection information and the group study assumptions, including relevant changes between the Phase I and Phase II studies, see the group report Sections 2 and 4.

The following design assumptions are applicable to the Project:

A. The following Facilities were estimated and are included in the Phase II Study:

- SCE will build the 66 kV tap line from the existing Little Rock – Wilsona 66kV line to the Project site.
- The second telecommunication path from the generating facility to the SCE tapped substation will be installed by SCE.
- It is assumed SCE would be required to install one additional dead-end structure and a total of two spans of line to reach the proposed 66 kV line position.

- The required revenue metering cabinet and retail load meters to be installed at the generating facility will be installed by SCE.
- The required remote terminal unit (RTU) to be installed at the generating facility will be installed by SCE.

B. The following Facilities were not included in the Phase II Study:

- The Project 66 kV gen tie line from the generating facility to the last structure outside the SCE tapped substation property line will be installed by Project and is not included in the Phase II Study results. The 66 kV gen tie line right of way should extend up to the edge of the SCE Substation property line.
- The Project 66 kV gen tie line must be equipped with fiber optic cable to provide [redacted] telecommunication paths required for the line protection scheme. The cost of the fiber optic cable will be included in the cost of the gen tie line and is not included in the Phase II Study results.
- All required CAISO metering equipment at the generating facility will be provided by the customer and is not included in the Phase II Study.
- All required revenue metering equipment to meter the generating facility retail load will be specified by SCE and installed by the customer at their end of the Project 66 kV gen tie line and is not included in the Phase II Study.
- The following 66 kV gen tie line protection to be installed at the generating facility will be specified by SCE and provided by the customer and are not included in the Phase II Study.
  - [redacted] current differential relay with dual dedicated digital communication channels to the SCE tapped substation.
  - [redacted] current differential relay with dual dedicated digital communication channels to the SCE tapped substation.

4. Power Flow Analysis

The group study indicated that the Project contributes to the following transmission facility overloads or non-convergence problems. The details of the analysis and overload levels a

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- T/L

4.3 Recommended Mitigations

A combination of congestion management for base case and contingency overloads, and the use of SPS under identified contingency outage conditions, is required to mitigate the power flow impacts of the project described above. See the group report for additional details.

5. Short Circuit Analysis

Short circuit studies were performed to determine the fault duty impact of adding the Transition Cluster projects to the transmission system. The fault duties were calculated with and without the projects to identify any equipment overstress conditions.

The cost responsibility of each individual project was determined based on the methodology applied in the Phase I Study once overstressed circuit breakers were identified. Costs of replacing and/or upgrading circuit breakers located within a Transition Cluster Group were allocated among all generation projects located within that Group. Costs of replacing and/or upgrading circuit breakers not located within a particular Transition Cluster Group were allocated over the entire Transition Cluster. Costs were allocated pro rata on the basis of the maximum megawatt electrical output of each proposed new Large Generating Facility or the amount of megawatt increase in the generating capacity of each existing Generating Facility.

5.1 Short Circuit Study Input Data

The following input data provided by the IC was used in this study:

Inverter Data (per IC provided data):

[redacted]

Generation Step-up Transformers

The customer identified that the Project main step-up transformer is a three-phase, three winding 66/34.5 kV (YG-D-YG) for 17.8/23.8/29.7 MVA @ 55 degree C temperature rise with the following impedance information:

[redacted]

However, this transformer reflected a change from the transformer identified in the Phase I study, and a complete set of transformer impedances for the three winding transformer was not provided with the Appendix B technical data in the Phase II study. In addition, the Little Rock – Wilsona 66 kV circuit is a three-wire circuit for which SCE assumed a delta high-side connection would be required. Finally, based on the Phase I study results which identified serious Single-Line-Ground (SLG) short-circuit duty problems, it has been previously identified that projects in the Transition Cluster with transformer connections that contribute to SLG duty will potentially need to change their transformer configuration to mitigate this problem.

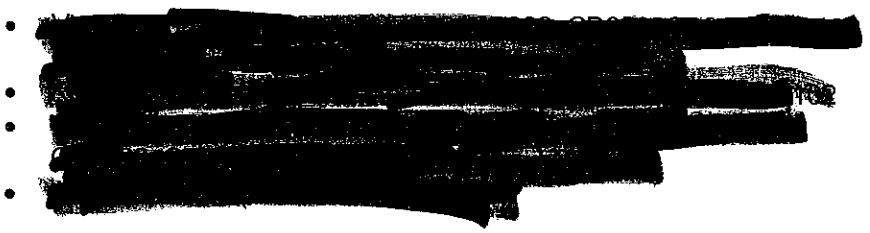
Therefore, for this Phase II study, SCE assumed a two-winding step-up transformer with a 9% H-X impedance on a 17.8 MVA base, and a delta-connected high-side, as reflected on the Single Line Diagram in Figure 2-2. The final configuration of the step-up transformer should be discussed in the Results Meeting.

Generation Tie Line

The generation tie line assumed 2.8 miles of 336 ACSR conductor.

5.2 Results

All bus locations where the Transition Cluster Projects increase the short-circuit duty by 0.1 kA or more and where duty is in excess of 60% of the minimum breaker nameplate rating are listed in Appendix H of the Group Report. These values have been used to determine if any equipment is overstressed as a result of the Transition Cluster interconnections and corresponding network upgrades, if any. The Phase II Study breaker evaluation identified the following overstressed circuit breakers:



Based on the cost assignment methodology applied in the Phase II Study, the Project will have the assigned cost responsibility for mitigation of the short-circuit duty results described above. The total cost responsibility allocated to the Project is provided in Attachment 6.

5.3 Preliminary Protection Requirements

Protection requirements are designed and intended to protect SCE's system only. The preliminary protection requirements were based upon the interconnection plan as shown in Figure 2-2.

The applicant is responsible for the protection of its own system and equipment and must meet the requirements in the SCE Interconnection Handbook provided in Attachment 3.

5.4 Additional SCD Discussion

The Phase II Study has shown significant increases in SLG short-circuit duty with the addition of numerous grounded interconnection transformers. For details, see Appendix H. It is recommended that the Project's step-up transformers be specified, if possible, in such a way to limit the Project's contribution to SLG SCD on the SCE system. This may be accomplished by installing transformers with delta-connected high side windings or with "impedance-grounded" wye-connected high side windings

6. Reactive Power Deficiency Analysis

Reactive power deficiency analysis was performed in the group study. The reactive power deficiency analysis included power flow sensitivity analysis in the [redacted] as well as reactive margin (QV) analysis on selected non-convergent cases from the power flow study. The analysis found that the project contributes to reactive power deficiencies in the transmission system under base case and contingency conditions, and voltage criteria violations under contingency conditions.

In particular, the reactive power deficiency analysis confirmed that the non-convergence cases in the power flow analysis were real transmission system deficiencies due to the addition of Transition Cluster projects – such as insufficient reactive margin – and not numerical solution problems. The study concluded that use of congestion management to limit south of Vincent flows to 8500 MW or less will mitigate this problem. For additional details, see the group report.

7. Transient Stability Evaluation

Transient stability studies were conducted using the full loop base cases to ensure that the transmission system remains in operating equilibrium, as well as operating in a coordinated fashion, through abnormal operating conditions after the Transition Cluster projects begin operation. The generator dynamic data used in the study for the Project is shown in Attachment 1.

7.1 Transient Stability Study Scenarios

Disturbance simulations were performed for a study period of 10 seconds to determine whether the Phase II Study projects will create any system instability during a variety of line and generator outages. The most critical single contingency and double contingency outage conditions in the [redacted] were evaluated. For the list of specific line and generator outages evaluated, see the group report.

7.2 Results

In the stability analysis performed in t[redacted] with the addition of Transition Cluster projects and upgrades in place to mitigate base case and outage related overload problems, no significant transmission system stability problems relative to existing stability criteria were identified. The study concluded that the Project would not cause the transmission system to go unstable under Category "B" and Category "C" outages. For a more detailed discussion on the stability analysis see the group report. The stability plots are provided in Attachment 2.

8. Deliverability Assessment

8.1 On Peak Deliverability Assessment

CAISO performed an On-Peak Deliverability Assessment. The power flow study results for Category "A", "B", and "C" are detailed in Attachment 5.

8.2 Off- Peak Deliverability Assessment

A modified version of the power flow 2013 Spring Off-Peak base case was created to perform the off-peak deliverability assessment of the QC 1 projects. The assumptions to create this case are listed in the group study. The impacts of the Project are shown in Attachment 5.

9. Operational Studies

9.1 IC Proposed Project Timelines

The latest information provided by the IC has indicated that the proposed date for the generator step-up transformer to receive back feed power is July 2012 and the proposed Commercial Operation Date is October 2012.

9.2 System Upgrade Timelines

The Project involves the installation of Interconnection Facilities described in Section 11. The anticipated time to construct these facilities is 48 months upon execution of LGIA.

The study concluded that the Project was not allocated any Delivery Network Upgrades.

This Phase II Study assumed that all previously triggered short-circuit duty impacts would be mitigated by the corresponding triggering project. Consequently, this study evaluated the incremental impacts associated with the addition of the Transition Cluster projects, including appropriate transmission upgrades as identified in this study, in an effort to cost allocate the incremental upgrades associated with the addition of the Transition

Cluster projects. However, it should be clear that for reliability reasons it may be necessary to implement mitigation upgrades previously triggered by queued ahead generation projects prior to allowing interconnection of Transition Cluster generation projects.

The circuit breaker upgrades that were triggered by queued-ahead projects are identified in Section 4.6 of the group report. The Operational Study undertaken as part of this Phase II Study identified the required timing for circuit breaker upgrades triggered by queued-ahead generation projects. The Table below identifies the first year that circuit breaker upgrades triggered by queued-ahead projects were found to be required in this Operational Study at each substation location.

Table 9-1: Circuit Breaker Upgrades Triggered by Queued-ahead Projects

Year	Location
2010	
2011	
2012	
2013	
2014	
2015	
2016	

This Phase II Study assumed that the timelines for construction of the upgrades listed in Table 9-1 to accommodate queued-ahead projects will also be sufficient to accommodate the operational requirements for the Transition Cluster projects. In the event that the Transition Cluster projects will need to accelerate these upgrades, the projects will need to do so via a separate agreement. Operational studies will be conducted on an annual basis or more frequently as needed to identify such requirements.

The circuit breaker upgrades that were triggered by Transition Cluster projects are identified in Section 8.2 of the group report. The Operational Study undertaken as part of this Phase II Study identified the required timing for circuit breaker upgrades triggered by Transition Cluster projects. The

Table below identifies the first year that circuit breaker upgrades triggered by Transition Cluster projects were found to be required in this Operational Study at each substation location.

Table 9-2: Circuit Breaker Upgrades Triggered by Transition Cluster Projects

Year	Location

9.3 TRTP Licensing and Construction Timelines

The latest information available regarding TRTP Segments 4-11 construction timelines and in-service dates can be obtained from the Quarterly Compliance Report (April 2010) of Southern California Edison Company Regarding Status of Transmission Projects, pursuant to CPUC Decision ("D,") 06-09-003. Specifically:

TRTP 4-11 Project Status (from SCE AB-970 Compliance Filing, April 2010)

TRTP SEGMENTS 4-11 PROJECT DESCRIPTION	PLANNED IN-SERVICE DATE
	2
	2
	4
	4
	4
	2012 / /2013
	/2012

The California Public Utilities Commission has issued a Certificate of Public Convenience and Necessity (CPCN) for TRTP Segments 4-11. The CPUC and the Angeles National Forest are now engaged in a joint California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) process in accordance with applicable state and federal environmental regulations, policy, and law. SCE is in the process to obtain the necessary governmental approvals, authorizations, and permits as required by federal, state, and local laws, regulations, and ordinances pursuant to the requirements specified under CPUC General Order 131-D. Appendix M of the Proponents Environmental Assessment (PEA) for TRTP lists these requirements in greater detail.

One approval item that may impact the TRTP construction schedule, specifically identified in the SCE AB-970 Compliance Filing in April 2010, is the issuance of a Biological Opinion from the U.S. Fish and Wildlife Service (USFWS). To date the Biological Opinion has not been issued. The planned in-service dates for the various segments of TRTP are subject to change based on the timing and details of these approvals, authorizations, and permits.

9.4 Conclusion

Based on information available at this time, assuming an anticipated LGIA execution date of September 2010, and taking into consideration the upgrades described above that were allocated to the Project, there are anticipated operational constraints associated with meeting the IC proposed timelines.

The ability to meet the IC proposed operating date is subject to constraints related to the completion of the Interconnection Facilities (48 months upon execution of LGIA). The requested in service date of the Project is before the projected operation date of these facilities. Therefore, the operational study conclusion is that the IC requested operating date cannot be met. The earliest that the Project is anticipated to be able to go into service is 48 months after execution of LGIA.

In addition, there are anticipated operational constraints for full delivery based on timelines to construct upgrades for higher queued projects. TRTP Segments 4-11 are currently scheduled to be completed by February 2015. This date is after the IC requested in-service date. This means that the Project may be required to interconnect on an interim "Energy Only" basis until these upgrades are ultimately constructed, based on CAISO Deliverability Study findings. This also means the Project may be subject to additional congestion, mitigated by CAISO's operating protocols, until such time as all required Delivery Network upgrades are constructed.

All of these findings assume no TRTP delay associated with the pending Biological Opinion from the USFWS. Any delays to TRTP based on the Biological Opinion or on other permitting and licensing issues will impact the conclusions in this report and may impact the Project in-service date.

This conclusion is based on the estimated time for engineering, licensing, procurement, and construction of a typical project. Schedule durations may change due to the number of projects approved and release dates. The ability to meet the IC proposed operating date is subject to constraints such as resource availability, system outage availability, and environmental windows of construction.

10. Environmental Evaluation/Permitting

Please see Section 12 of group report.

11. Upgrades, Cost Estimates and Construction schedule estimates

To determine the cost responsibility of each generation project in Transition Cluster, the CAISO developed cost allocation factors based on the individual contribution of each project (Attachment 6). The cost allocation for the Interconnection Facilities and Network Upgrades for which the Project is solely responsible is as follows:

PTO's INTERCONNECTION FACILITIES

1. **Transmission:**
   Project 66 kV Generation Tie Line
   - Install [redacted] new TSP designed for double circuit construction
   - Install [redacted] circuit feet of 336A ACSR (3,000 feet total of 336 ACSR conductor)

2. **Substations:**
   Tapped Substation
   Construct a single circuit breaker 66 kV tapped substation to terminate the new Project 66 kV gen tie line.

   The interconnection facilities will be installed as follows:
   - [redacted] dead-end structure
   - [redacted] set of 1200A disconnect switches
   - [redacted] CCVTs
   - [redacted] 66kV surge arrestors
   - [redacted] SEL-351 relays with 3 PTs

   The distribution facilities will be installed as follows:
   - [redacted] dead-end structures
   - [redacted] 66 kV CB

- [redacted] of 1200A disconnect switches
- MEER

Little Rock Substation
The Interconnection Facilities will be installed as follows:
- [redacted] relays
- [redacted] with setting group selector switch relay
- [redacted] 19" racks

Wilsona Substation
The Interconnection Facilities will be installed as follows:
- [redacted] 39'-6" high by 14' wide steel structure, foundation, and associated hardware
- [redacted] set of SMD-2B fuses and fuse holders
- [redacted] sets of disconnects

3. **Metering Services Organization**
   Install a revenue metering cabinet and revenue meters required to meter the retail load at the generating facility.

   The customer will provide the required metering equipment (voltage and current transformers).

4. **Power System Control**
   Install [redacted] RTU at the generating facility to monitor typical generation elements such as MW, MVAR, terminal voltage and circuit breaker status at each generating unit and the plant auxiliary load and transmit this information to the SCE regional grid control center.

PLAN OF SERVICE RELIABILITY NETWORK UPGRADES

No Plan of Service Reliability Network upgrades identified.

RELIABILITY NETWORK UPGRADE
Below is a list of Reliability Network Upgrades with costs that have been allocated to the Project. See group report section 11 for scope details.

- Short-Circuit Duty (SCD) Mitigation
  - Replace [redacted] CBs and upgrade [redacted] CBs to achieve 63 kA rating on overstressed Vincent 500 kV CBs

DELIVERY NETWORK UPGRADES
No Delivery Network upgrades identified.

DISTRIBUTION UPGRADES

1. **Project Tap Line (Distribution Upgrade)**
   - Install [redacted] 75 foot H5 LWS (Light Weight Steel) poles designed for single circuit construction (approximately 2.8 miles)
   - Install [redacted] TSP
   - Install [redacted] automated switches

- Install [redacted] circuit feet of 336 ACSR (44,400 feet total of 336 ACSR conductor)
- Install [redacted] feet of 4/0 ACSR FRC (fault return conductor) to be tied into the [redacted] ground grid.

2. **Telecommunications**
   Install lightwave, channel, and associated equipment at [redacted] and Little Rock substations and 9.8 miles of fiber optic cable at the Little Rock-SunTower 66 kV T/L.

3. **Real Properties, Transmission Project Licensing, and Environmental Health and Safety**
   Obtain easements and/or acquire land, obtain licensing and permits, and perform all required environmental activities for the installation of 2.8 mile 66 kV tap line and the telecom route.

Table 11.1: Upgrades, Estimated Costs, and Estimated Time to Construct Summary

Type of Upgrade	Upgrade (May include the following)	Description	Estimated Cost x 1000	Estimated Time to Construct *(Note 3)*
PTO's Interconnection Facilities *(Note 1)*	Transmission, Substations, Metering Services Organization, Power System Control	Non-network facilities needed to enable interconnection	$10,199	36 Months
Plan of Service Reliability Network Upgrades	None	Direct Assigned Network upgrades needed to enable interconnection.	$0	N/A
Reliability Network Upgrades	Substations	Allocated Network upgrades needed to maintain system Reliability	$209	24 Months
Delivery Network Upgrades	None	Network upgrades needed to support Full Delivery, if requested	$0	N/A
Distribution Upgrades *(Note 2)*	Transmission, Substation, Telecommunidations, Real Properties, Environmental Health and Safety, Transmission Project Licensing	Non-CAISO SCE Distribution Facilities	$12,958	48 Months
Total			**$23,366**	**48 Months**

Note 1: The Interconnection Customer is obligated to fund these upgrades and will not be reimbursed.

Note 2: These upgrades are not identified in ISO tariff, and are not reimbursable.

Note 3: The estimated time to construct (ETC) is for a typical project; schedules duration may change due to number of projects approved and release dates. Stacked projects impact resources, system outage availability, and environmental windows of construction. Assumption is SCE will need to obtain CPUC licensing and regulatory approvals prior to design, procurement and construction of the proposed facilities required to serve the interconnection customer and prerequisite facilities are in service.

12. Study Caveats

12.1 Plan of Service

The Plan of Service developed for the Project is based on the data submittals provided for each specific project in the cluster group and will serve as the basis for developing the LGIA and for permitting purposes. However, the final Plan of Service is subject to change based upon completion of preliminary and final engineering, identification of field conditions, and compliance with applicable environmental and permitting requirements.

12.2 Customer's Technical Data

The study accuracy and results for the Phase II Study are contingent upon the accuracy of the technical data provided by the IC. Any changes from the data provided could void the study results.

12.3 Study Impacts on Neighboring Utilities

Results or consequences of this Phase II Study may require additional studies, facility additions, and/or operating procedures to address impacts to neighboring utilities and/or regional forums. For example, impacts may include but are not limited to WECC Path Ratings, short circuit duties outside of the CAISO Controlled Grid, and sub-synchronous resonance (SSR).

12.4 Relocations and Other Use of SCE Facilities

The Interconnection Customer is responsible for all costs associated with necessary relocation of any SCE facilities as a result of this project and acquiring all property rights necessary for the Interconnection Customer's Interconnection Facilities, including those required to cross SCE facilities and property. The relocation of SCE facilities or use of SCE property rights shall only be permitted upon written agreement between SCE and the Interconnection Customer. Any proposed relocation of SCE facilities or use of SCE property rights may require a separate study and/or evaluation to determine whether such use may be accommodated, and any associated cost would be non-refundable.

12.5 SCE Interconnection Handbook

The Interconnection Customer shall be required to adhere to all applicable requirements in the SCE Interconnection Handbook. These include, but are not limited to, all applicable protection, voltage regulation, VAR correction, harmonics, switching and tagging, and metering requirements.

12.6 Western Electricity Coordinating Council (WECC) Policies

The Interconnection Customer shall be required to adhere to all applicable WECC policies including, but not limited to, the WECC Generating Unit Model Validation Policy.

12.7 System Protection Coordination

Adequate Protection coordination will be required between SCE-owned protection and Interconnection Customer-owned protection. If adequate protection coordination cannot be achieved, then modifications to the Interconnection Customer-owned facilities (i.e., Generation-tie or Substation modifications) may be required to allow for ample protection coordination.

12.8 Standby Power and Temporary Construction Power

The Phase II Study does not address any requirements for standby power or temporary construction power that the Project may require prior to the in-service date of the interconnection facilities. Should the Project require standby power or temporary construction power from SCE prior to the in-service date of the interconnection facilities, the IC is responsible to make appropriate arrangements with SCE to receive and pay for such retail service.

12.9 Construction Schedule

The estimated time to construct (ETC) is for a typical project; schedules duration may change due to number of projects approved and release dates. Stacked projects impact resources, system outage availability, and environmental windows of construction. Assumption is SCE will need to obtain CPUC licensing and regulatory approvals prior to design, procurement and construction of the proposed facilities required to serve the interconnection customer and prerequisite facilities are in service.

12.10 Telecommunication Assumptions

The cost for telecommunication facilities that were identified as part of the IC's Interconnection Facilities was based on an assumption that these facilities would be sited, licensed, and constructed by SCE as opposed to the IC doing this work. In addition, the telecommunication requirements for SPS were assumed based on tripping of the generator breaker as opposed to tripping the circuit breakers at the SCE substation. Any changes in these assumptions may affect the cost and schedule for the identified telecommunication facilities.

Attachment 1

Generator Machine Dynamic Data

Attachment 2

Dynamic Stability Plots

Please refer to Appendix F of the Group Report.

Attachment 3

SCE Interconnection Handbook

Preliminary Protection Requirements for Interconnection Facilities are outlined in the SCE Interconnection Handbook.

Attachment 4

Short Circuit Calculation Study Results

Please refer to Appendix H of the Group Report.

Attachment 5

Deliverability Assessment Results

Please refer to Appendix I of the Group Report.

Attachment 6

Allocation of Network Upgrades for Cost Estimates

Upgrades	Type	Needed For	Total Cost ($1000)	Cost Share	Allocated Cost ($1000)
Vincent Circuit Breaker	Reliability	Short circuit duty mitigation	$17,337	1.20%	$209
Plan of Service	Reliability	Interconnection & telecom	$0	100%	$0
				Total	$209