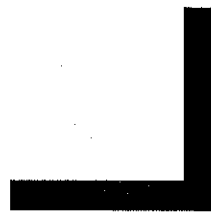




Facilities Study

September 30, 2011



SOUTHERN CALIFORNIA

EDISON

An *EDISON INTERNATIONAL*SM Company

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I. Executive Summary

[REDACTED] to the California Independent System Operator (CAISO) to interconnect 20 MW of wind generation through their [REDACTED] [REDACTED] under the terms of Southern California Edison Company's (SCE's) Wholesale Distribution Access Tariff (WDAT).

[REDACTED] will utilize twenty individual wind turbine 1.0 MW for total output of 20 MW. These units are to be connected to pad-mounted step up transformers which provides voltage at 34.5 kV for the power collection system within the plant.

[REDACTED] requested an in-service date of March 31, 2011 and a commercial operation date of September 30, 2011.

The SCE Transmission Planning group performed a System Impact Study (SIS) dated September 10, 2009 to address the impacts the new generation to the transmission system.

FOR ADDITIONAL DETAIL REFER TO THE FOLLOWING EXHIBIT:

- **EXHIBIT A: SYSTEM IMPACT STUDY – EXECUTIVE SUMMARY**

II. System Impact Study Results

Power Flow

With all queued ahead generation projects and all corresponding transmission upgrades, the system was found to have sufficient transmission capability to deliver the total output of all queued generation projects up to and including [REDACTED]

Transient Stability

The study identified that the [REDACTED] with the technical data provided resulted in initialization errors of the WECC base case. Such finding has also been observed for other previous projects in the queue utilizing the same technical data.

Given the technical problems associated with the model and data provided to model the [REDACTED] a sensitivity stability analysis was performed using a generic Type 1 wind model with default data. The inclusion of the [REDACTED] did not exacerbate existing WECC Performance criteria violations that were observed in pre-project stability results. Therefore, it is anticipated that no facilities are needed to mitigate any transient voltage issues in the area.

However, given that the WECC has recently approved the use of a generic wind models, it is recommended that the use of a generic model that better represents the [REDACTED] be evaluated as part of the Facilities Study. [REDACTED] will need to update the technical parameters of the generic selected to represent the [REDACTED] and a new transient stability assessment will be incorporated into the Facilities Study.

NOTE: No transient stability assessment was performed as a part of this Facilities Study.

Future model validation for comparison purposes will proceed as necessary based on resource availability.

Post-Transient Voltage

With all queued ahead generation projects and all corresponding transmission upgrades, the study results did not identify any voltage violations for the critical contingencies evaluated with addition of the [REDACTED]

Short-Circuit Duty (SCD)

The short-circuit duty analysis included all queued ahead generation projects based on their application date and all known corresponding transmission upgrades.

SCD studies (Three-Phase-to-Ground and Single Phase-to-Ground) identified one 230 kV and ten 115 kV substation locations requiring engineering review. Detailed circuit breaker review at these locations was not conducted as part of this study but will be included in the Facilities Study.

It is important to note that SCE has identified a need to replace a total of thirteen 115 kV circuit breakers (CBs) at the Devers Substation. In response to this need, SCE has recommended and received approval from the CAISO for the replacement of these circuit breakers. The current anticipated breaker replacement in-service date is June 2010. Due to the fact that the existing system does not have any short-circuit duty margin available, [REDACTED] cannot be interconnected until all these circuit breakers are replaced.

NOTE: A SCD analysis was performed during this facilities study and found no locations where this project would increase the duty by 0.1 kA or more.

The circuit breakers identified in the 2009 SIS Report for replacement have been completed, and therefore, the Project interconnection will not be limited by the SCD performed in the 2009 SIS Report.

III. Facilities Study Assumptions

- A. Devers – Venwind 115 kV line is in-service.
- B. [REDACTED] is located adjacent to the Devers – Venwind 115 kV line.
- C. [REDACTED] will be located directly adjacent to the new SCE tapped substation.
- D. Fiber optic cables will be installed on existing poles with sufficient rights.
- E. Any required upgrades at facilities not owned by SCE are not included in the Facilities Study.
- F. The schedule for the Environmental Impact Statement and/or Environmental Impact Report and all other regulatory filings required for the Project are not included in the Facilities Study.

IV. Facilities Study Scope and Cost Estimate

IV – 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 [REDACTED] in the Application Queue, and are expected to be implemented by them.

However, in the event that any of these earlier Projects withdraws or modifies their application in accordance with applicable tariff allowances, [REDACTED] may become responsible for any or all of these additional facilities.

NOTE: There is no Case B for this Project.

SCE will install a new 115 kV interconnection facility to tap the proposed Devers – Venwind 115 kV line.

CASE A:

Substation:

WDT401 Substation

Install one new 115 kV interconnection facility with one circuit breaker and one overhead feed to the customer's generation tie line. Station One Line and Plot Plan Diagrams are attached for reference in Exhibit B.

Devers Substation

Relay setting changes.

Sub-Transmission:

Install tubular steel poles with foundations, lightweight steel poles, and approximately 500 circuit feet of [REDACTED]

Information Technology:

Install required terminal equipment at WDT401 and the customer substation, build two 5" risers, and install approximately 5,600' of [REDACTED] and 300' of [REDACTED] cable.

Corporate Environmental Health & Safety/Real Properties/Transmission Projects & Licensing:

Provide mapping, survey, title work, land acquisition labor, licensing, and other activities related to the tapped substation, tap line, and Information Technology requirements.

Power Systems Control:

A full size real-time Remote Terminal Unit (RTU) is required at WDT401 Substation and the customer's generating facility to monitor the 115 kV lines MW, MVAR, phase amps, 115 kV CB status/control and generation data such as 115 kV gen-tie line net MW, net MVAR, kV, CB status, units MW, MVAR, terminal voltage, auxiliary load MW, MVAR and relay protection status alarm.

Metering Services Organization:

Install revenue metering units and associate metering materials at WDT401 Substation.

IV – 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:		\$	10,587,000
CASE B:	:	\$	0
TOTAL MAXIMUM COST EXPOSURE:		\$	10,587,000

SEE EXHIBIT C: COST SUMMARY

V. Conclusions

- A. The estimated cost for the Interconnection is approximately \$10,587,000 for Case A with the potential additional cost of \$0 for Case B for a total Maximum Cost Exposure of \$10,587,000.
- B. The time required to complete the proposed project will be 24 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 of the Project. The 24 month period does not include the time required for the preparation of the Environmental Impact Statement and/or Environmental Impact Report as required per CEQA and NEPA, if required, as well as any other approvals and permits to be provided by the CPUC or other regulatory agencies.

A detailed Project Schedule will be provided during the Engineering and Design Phase of the Project.

[REDACTED]

FACILITIES STUDY

- C. The costs indicated in the attached tables are shown 2012 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 subject work orders. The necessary billing adjustments will be made at that time.
- E. 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.
- F. Although study results reflect no adverse impact on the high-voltage CAISO controlled transmission system with the addition of the [REDACTED] the Interconnection Customer will still be required to adhere to all applicable WECC policies including, but not limited to, the WECC Generating Unit Model Validation Policy. For example, the Interconnecting Customer will be required to provide validated dynamic models for the proposed project within the timelines identified in the WECC policy. The latest policy is available on the WECC website at www.wecc.biz .