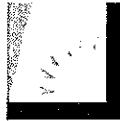


[REDACTED]

**WDAT 884ISP – [REDACTED]**

***WDAT  
Independent Facility Study***

***Revised October 31, 2012***



**SOUTHERN CALIFORNIA  
EDISON**  
An EDISON INTERNATIONAL<sup>SM</sup> Company

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## EXECUTIVE SUMMARY

[REDACTED] applied to Southern California Edison ("SCE") for interconnection and wholesale distribution service for its proposed Solar Project pursuant to SCE's Wholesale Distribution Access Tariff ("WDAT") Generation Interconnection Procedures. SCE performed an Independent Facility Study as requested by [REDACTED] for a 12 kV interconnection and distribution service from an existing 12 kV distribution line ("Minotaur 12 kV"). The interconnection is an applicant owned 12 kV switchgear, which will be located approximately 0.65 miles from San Bernardino Substation on the Minotaur 12 kV circuit out of SCE's San Bernardino 66/12 kV Substation. The request is for a WDAT photovoltaic ("PV") generation facility with a total capacity of 4.95 MW. The initial request is for service to commence by [REDACTED].

The new generation, consisting of photovoltaic panels, [REDACTED] 500 kW Satcon inverters, and [REDACTED] 500 kVA 0.208/12 kV transformers would receive interconnection service from SCE's existing Minotaur 12 kV out of San Bernardino Substation via an underground line extension to the applicant owned 12 kV switchgear. The generated power would be delivered to the California Independent System Operator ("CAISO") grid at the 220 kV bus of SCE's San Bernardino Substation.

The purpose of this Independent Facility Study is to determine:

- The estimated cost for the Distribution Upgrades and Interconnection Facilities which were identified in the Independent System Impact Study<sup>2</sup>.
- The estimated time required to complete the design and construction of the Distribution Upgrades and Interconnection Facilities which were identified in the Independent System Impact Study.

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<sup>1</sup> Date as requested in the application. Actual operating date depends on design, procurement, and construction requirements. Interconnection Studies will ultimately determine in-service date.

<sup>2</sup> Copy of the Independent System Impact Study is provided as attachment A.

Non-binding order of magnitude cost estimates for the required interconnection facilities and 12 kV system upgrades are as follows:

**Distribution Upgrades**

\$212.2 K

- 4-way Automated Pad Mounted Gas Switch
- New Automatic Recloser
- 1300 feet of primary 350 JCN cable going from an existing structure (V5504282) to the new 4-way padmounted gas switch.
- 620 feet of primary 1/0 JCN cable going from the new 4-way padmounted gas switch to an existing structure (X5585737).

**Distribution Upgrades (Substation)**

\$8.0 K

- Addition of Watt and VAR data points to RTU

**EH&S Distribution Upgrades**

\$35.6 K

- Obtain licensing and permits and perform all required environmental activities for the construction of the following project elements if applicable: Construct a 1920 feet 12 kV underground line extension using existing ducts and structures on the existing Minotaur 12 kV line.

**Interconnection Facilities**

\$77.6 K

- Approximately 600 feet primary 350 JCN cable going from the new 4-way padmounted gas switch to the generating facility.
- Remote Control Switch
- 12 kV Metering, CTs, PTs, and associated wiring

**Telemetry Requirements<sup>3</sup>** \$ 3.70 K

- Data Programming

**EH&S Interconnection Facilities** \$30.1 K

- Obtain licensing and permits and perform all required environmental activities for the construction of the following project elements if applicable: Construct a 600 feet 12 kV underground line extension from the mainline to the Customer's switchgear.
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Total non-binding order of magnitude cost estimate **\$367.2 K**

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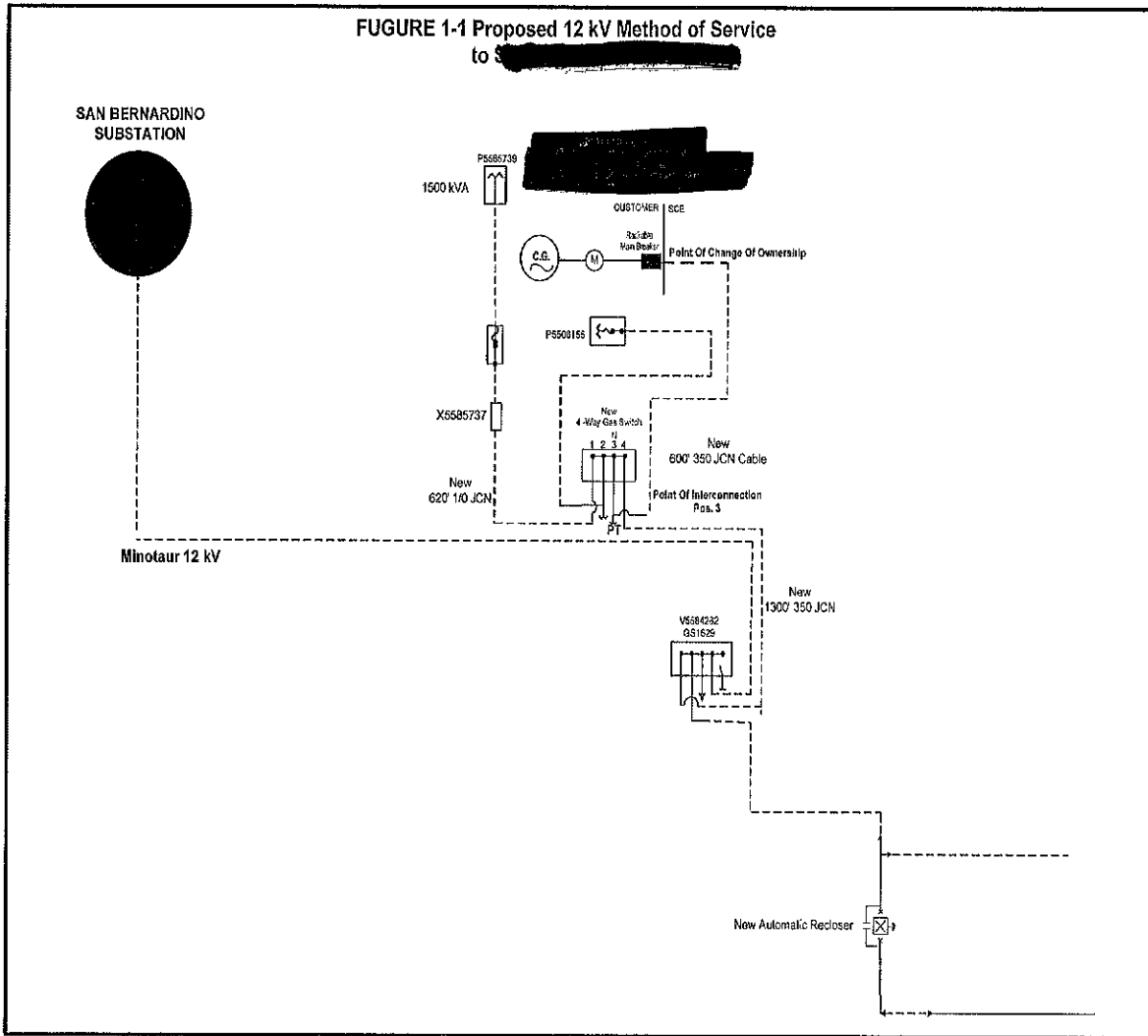
<sup>3</sup> Real time telemetry will be required. In order to provide the adequate telemetry requirements, the existing Data Processing Gateway (DPG), RTU and Telecom installed under WDAT 347 will be utilized. SCE Power System Control (PSC) will be required to program the additional data points in SCE's RTview servers.

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<b>Attachment A: Independent System Impact Study</b>		

# I. INTRODUCTION

[REDACTED] applied to Southern California Edison ("SCE") for interconnection and wholesale distribution service for its proposed Solar Project pursuant to SCE's Wholesale Distribution Access Tariff ("WDAT") Generation Interconnection Procedures. SCE performed an Independent Facility Study as requested by [REDACTED] for a 12 kV interconnection and distribution service from an existing 12 kV distribution line ("Minotaur 12 kV"). The interconnection is an applicant owned 12 kV switchgear, which will be located approximately 0.65 miles from San Bernardino Substation on the Minotaur 12 kV circuit out of SCE's San Bernardino 66/12 kV Substation. The request is for a WDAT photovoltaic ("PV") generation facility with a total capacity of 4.95 MW. The initial request is for service to commence by [REDACTED]<sup>4</sup>.



<sup>4</sup> Date as requested in the application. Actual operating date depends on design, procurement, and construction requirements. Interconnection Studies will ultimately determine in-service date.

The new generation, consisting of photovoltaic panels, [REDACTED] [REDACTED] in [REDACTED] [REDACTED] 500 kVA 0.208/12 kV transformers would receive interconnection service from SCE's existing Minotaur 12 kV out of San Bernardino Substation via an underground line extension to the applicant owned 12 kV switchgear. The generated power would be delivered to the California Independent System Operator ("CAISO") grid at the 220 kV bus of SCE's San Bernardino Substation.

The purpose of this Independent Facility Study is to determine:

- The estimated cost for the Distribution Upgrades and Interconnection Facilities which were identified in the Independent System Impact Study.
- The estimated time required to complete the design and construction of the Distribution Upgrades and Interconnection Facilities which were identified in the Independent System Impact Study.

## VI. SUMMARY

1. Distribution Upgrades will include the installation of a new 4-way Padmounted Gas Switch, an Automatic Recloser, addition of MW and MVAR data points to the existing RTU at San Bernardino Substation, and the installation of approximately 1920 feet of new underground cable (350 JCN & 1/0 JCN).
2. Interconnection Facilities will include the approximately 600 feet of underground primary 350 JCN cable, a RCS controller, 12 kV metering CTs and VTs, metering, and associated wiring.
3. Real time telemetry will be required. In order to provide the adequate telemetry requirements, the existing Data Processing Gateway (DPG), RTU and Telecom installed under WDAT 347 will be utilized. SCE Power System Control (PSC) will be required to program the additional data points in SCE's RTview servers.
4. Interconnection service and distribution service pursuant to the WDAT would be expected to commence within 6-8 months of executing a Generator Interconnection Agreement ("GIA") and associated Distribution Service Agreement. The time required to install the Watt Transducer will be negotiated in the SGIA.
5. Non-binding order of magnitude cost estimates for the required interconnection facilities and 12 kV system upgrades are as follows, these do not include any costs driven by Part B of the study.

12 kV Distribution Upgrades	\$212.2 K
Substation Distribution Upgrades	\$8.0 K
Interconnection Facilities/Automation	\$77.6 K
Telemetry Requirements <sup>5</sup>	\$3.70 K
Environmental Health and Safety	\$65.7 K
<hr/>	
Total non-binding order of magnitude cost estimate	<b><u>\$367.2 K</u></b> <sup>6</sup>

<sup>5</sup>Applicant will utilize existing RTU and DPG installed under WDAT 347 to provide the telemetry data, Only programming will be required

<sup>6</sup> Cost estimate are in 2012 Dollars.



6. The design of the Interconnection Facilities will take be approximately 60 business days from the execution of the Small Generator Interconnection Agreement (SGIA) and from the time the applicant has provided the following to SCE:
  - *Approved panel drawings which shall comply with SCE ESR. These requirements can be downloaded at :*  
*<http://www.sce.com/AboutSCE/Regulatory/distributionmanuals/esr.htm>*
  - *Customer information sheet.*
  - *Street improvement plans (if available)*
  - *Unique address for point of interconnection*
  - *Public Right away (Street) base maps as required by the interconnection.*
  - *Site plot plan on a 30:1 Scale or Digital file*
    - *Easements/Lease agreement*
    - *Grading plans*
    - *Sewer and storm plot plans*
    - *Landscape, Sprinkler, Pedestal Locations*
  - *Underground civil construction is released by SCE inspectors.*
7. The construction of the electrical facilities will take approximately 60 business days. The Interconnection Customer is responsible to perform the underground civil work per SCE's design. SCE will then approve and release the applicant installed underground infrastructure prior to SCE initiating the construction of the electrical facilities. The underground civil work includes but it is not limited to excavation (all necessary trenching, backfilling, and other digging as required) and installation of conduits and vaults for the required interconnection facilities.
8. Where formal rights of way, easements, land leases, or permits are required by SCE for installation of facilities, on or over Applicant's property, or the property of others, the Applicant shall grant SCE the rights of way and easements for the electrical facilities.
9. Current distribution standards are being updated to address generation interconnection systems. The proposed method of service on this report may change according on final design to comply with the updated distribution design standards.

## Attachment A – Independent System Impact Study