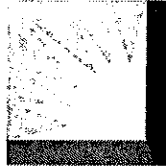


COMBINED WDAT 983
SYSTEM IMPACT STUDY & FACILITIES STUDY



SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONALSM Company

March 28, 2013

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EXECUTIVE SUMMARY

Southern California Edison Company ("SCE") performed a combined System Impact and Facilities Study as requested by the [REDACTED] for a [REDACTED] and distribution service [REDACTED] pursuant to SCE's Wholesale Distribution Access Tariff ("WDAT"). The interconnection is to be located in the project vicinity of the northwest corner of Amargosa Road and El Portal Drive in the city of Victorville, CA. The request is for an initial [REDACTED] in 2015 and a 2019 ultimate total [REDACTED]. The request was for upgraded service to commence in September 1, 2014 or as soon as reasonably possible thereafter as determined by study and other constraints.

The new load would receive distribution service from an SCE padmount switch via the [REDACTED] [REDACTED] out of SCE's Aqueduct Substation. The power would be delivered by the CAISO grid from the [REDACTED] at SCE's Victor Substation and transmitted to SCE's Aqueduct Substation through the Victor system [REDACTED]. The power would continue to flow through the [REDACTED] at SCE's Aqueduct Substation, and ultimately be delivered to [REDACTED] through the [REDACTED] out of Aqueduct Substation.

The purpose of this combined study is to determine the impact of the proposed load addition on the SCE distribution system, identify what modification and/or additions would be necessary to accommodate the request while maintaining system reliability, and determine the estimated costs to complete those modifications and/or additions. This study was performed for expected year 2015 through 2019 maximum load conditions.

The SCE distribution system and sub-transmission network will not be significantly impacted by the interconnection of this [REDACTED]. The installation of dedicated Interconnection Facilities will be required to create the customer interface point.

The estimated installed cost for the required Distribution system upgrades and Interconnection Facilities is approximately \$1,822,456 including ITCC. Additionally, the applicant will be responsible for the installation and costs of all underground facilities (ducts, structures, etc.) on the property. The construction of the underground facilities must be constructed per SCE's drawings.

After the execution of an Interconnection Facilities Agreement, SCE will require a lead time of roughly 10-15 weeks to procure the required equipment and schedule appropriate manpower. Construction would take approximately 2 weeks.

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INTRODUCTION

Southern California Edison Company ("SCE") performed a System Impact Study as requested by the [REDACTED] for a [REDACTED] and distribution service [REDACTED] pursuant to SCE's Wholesale Distribution Access Tariff ("WDAT"). The interconnection is to be located in the project vicinity of the northwest corner of Amargosa Road and El Portal Drive in the city of Victorville, CA. The request is for an initial WDAT load of [REDACTED] in 2015 with annual increases to a 2019 ultimate total [REDACTED]. The request was for upgraded service to commence in September 1, 2014 or as soon as reasonably possible thereafter as determined by study and other constraints.

The new load would receive distribution service from an SCE [REDACTED] via the [REDACTED] [REDACTED] out of SCE's Aqueduct Substation. The power would be delivered by the CAISO grid from the [REDACTED] at SCE's Victor Substation and transmitted to SCE's Aqueduct Substation through the Victor system [REDACTED]. The power would continue to flow through the [REDACTED] at SCE's Aqueduct Substation, and ultimately be delivered to [REDACTED] through the [REDACTED] out of Aqueduct Substation.

The purpose of the System Impact Study is to determine the impact of the proposed load addition on the SCE distribution system, identify what modification and/or additions would be necessary to accommodate the request while maintaining system reliability, and determine the estimated costs to complete those modifications and/or additions. This study was performed for expected year 2015 through 2019 maximum load conditions.

The purpose of the Facility Study is to detail the equipment required to be installed, based on the results of the System Impact Study, and to provide preliminary and scheduling estimates for the installation of that equipment.

This report describes the conditions and assumptions of each study and presents the results of the assessment. The report presents conclusions for the impact of the [REDACTED] connected to the SCE distribution system at the [REDACTED] site.

SYSTEM IMPACT STUDY CONDITIONS & METHODOLOGY

Planning Criteria

The thermal rating of any conductor, connector, or apparatus should not exceed 100% of its normal rated capacity as a result of the added load.

The thermal rating of any conductor, connector, or apparatus should not exceed 100% of its emergency rating under N-1 conditions.

Operational flexibility and reliability of the distribution system shall be maintained.

Circuit Voltage profiles should be maintained to comply within CPUC's Rule 2 requirements.

System Conditions

The power factor for the new load was assumed to be improved to within WDAT requirements of 0.95 lagging or leading, except as otherwise stated.

Expected loading on the distribution system as projected by the SCE 2013 - 2022 plan was used.

Distributed Generation resources connected to the distribution system are deemed to be offline, unless they have been deemed "reliable generation." The largest unit of reliable generation affecting a given loading scenario will be deemed offline.

Upgrades previously identified as required by earlier projects are assumed to be in service.

Load Conditions

Load analysis consists of modeling SCE's Aqueduct [REDACTED] to evaluate the impact of the added load on the [REDACTED] and [REDACTED] at SCE's Victor 115kV Substation.

SYSTEM IMPACT STUDY RESULTS

Identification of System Constraints

With the addition [REDACTED] during the study period, no overloads were identified on:

- [REDACTED]
- [REDACTED]
- [REDACTED]

Protection Review

The interface protection will be provided by the [REDACTED] and will be comprised of a [REDACTED] [REDACTED] that meets SCE's published Electrical Service Requirements (ESR) with a power circuit breaker controlled by protective relaying. The [REDACTED] protection must be coordinated with SCE's Aqueduct Substation circuit breaker controls to provide adequate protection for the distribution system. The relay settings are subject to SCE approval prior to setting and certified timed trip testing report results using primary injection will need to be provided to SCE to verify relay and circuit breaker performance prior to energization.

Distribution System Upgrades

[REDACTED] in mid-2019: According to the [REDACTED] load flow 2014 to 2019 base case, there is a third phase extension and [REDACTED] of approximately 400 feet. There is also 1,100 feet of existing [REDACTED] that needs to be relocated underground, scope will comprise of [REDACTED] that is required to serve the full [REDACTED]

FACILITIES STUDY CONDITIONS & METHODOLOGY

[REDACTED] will provide a graded site for installation of SCE's required facilities

On-site easements will be granted to SCE at no cost.

SCE-owned interconnection facilities will consist primarily of underground and/or padmounted equipment.

Customer Equipment

[REDACTED] must meet SCE's published Electrical Service Requirements (ESR) section 7 for the pull section, metering section, circuit breaker, etc. Drawings required by the ESR shall be submitted, reviewed, modified, and approved by SCE prior to release for fabrication of the [REDACTED]. Each medium voltage service entrance is an individually engineered application at SCE.

Direct Assignment Facilities

In order to interconnect the WDAT, Interconnection Facilities include the installation of a [REDACTED] approximately [REDACTED]. [REDACTED] will need to be installed between the pull section of the customer service entrance installed at the point of interconnection and the dedicated position on the future [REDACTED]. Metering [REDACTED] will need to be installed in the metering section of the new customer [REDACTED].

FACILITIES STUDY RESULTS

Distribution System Upgrades

Distribution Facilities	\$104.0 K ¹
▪ [REDACTED]	
▪ [REDACTED]	

Interconnection Facilities

Distribution Facilities	\$833.0 K ¹
▪ [REDACTED]	
▪ [REDACTED]	
▪ [REDACTED]	
▪ [REDACTED]	
▪ [REDACTED]	

¹ Cost estimates include 35% ITCC.

Distribution System Upgrades & Interconnection Facilities CES

Pending

- Perform all required environmental activities for the construction of the designated new 12kV distribution facilities

Total non-binding order of magnitude cost estimate

\$937 K¹

CONCLUSIONS

1. The initial requested load addition will not significantly impact the existing distribution or sub-transmission system.
2. Distribution system upgrades listed above are required in order to accommodate [REDACTED] in 2015 at a cost estimate of \$833 K¹
3. Interconnection facilities listed above are required to interconnect this [REDACTED] at a cost estimate of 104 K¹
4. The estimated total cost of all required Distribution System Upgrades and Interconnection Facilities is approximately \$936,126¹.
5. Applicant responsible for the installation of Underground Structures and conduits needed for the interconnection.
6. SCE will require approximately 10-15 weeks for material procurement and manpower scheduling and 2 weeks for construction.
7. The costs indicated in the above tables are preliminary estimates in 2013 dollars and are not firm. These cost estimates are based on conceptual engineering and system unit costs, and are subject to change based on final design and actual material costs. This Facilities Study and cost estimates as presented are valid for a period of 90 days.
8. This combined System Impact and Facilities Study is based on various technical data previously provided by the [REDACTED] for the [REDACTED] project. If any of that information changes significantly, as determined by SCE, the results of this study may no longer be appropriate and may necessitate a new study.
9. This combined System Impact and Facilities Study does not include the cost associated with environmental studies, which may be required for the licensing or permitting for the proposed [REDACTED] facility.