

Addendum #1 to Final Facility Study

WDT1286

Southern California Edison

[REDACTED]

June 13, 2016

Confidential: Contains Critical Energy Infrastructure Information

Interconnection Study Document History

Project No.	Project Name	No	Date	Document Title	Description of Document
WDT1286	[REDACTED]	2	6/13/2016	Addendum #1 Facility Study Final Report	The purpose of this report is to update the Final Facility Study to reflect the revised scope and cost for the Method of Service; and to publish the written comments provided by the IC to SCE in accordance with the timelines stated per Section 5.8.2.4 in GIP
WDT1286	[REDACTED]	1	5/4/2016	Facility Study Final Report	Report to disclose results of Facility Study

Executive Summary

Southern California Edison, an Interconnection Customer (IC), received a Facility Study report dated May 4, 2016 for their proposed [REDACTED] WDT1286.

During the results meeting of the Project on May 20, 2016, which was subsequent to the release of the final Facility Study report of the Project, it was determined that the scope and cost for the Method of Service were in need of revision.

The attached updated final Facility Study report for WDT1286 (Attachment A) replaces and supersedes the final Facility Study report for WDT1286 dated May 4, 2016.

In addition, subsequent to the distribution of the report, to comply with the Generator Interconnection Procedures (GIP) obligation to include the IC's written comments on interconnection studies as modified by FERC Order 792, SCE is publishing any written comments submitted by the IC:

- Within ten (10) Business Days of receipt of the final Facility Study report, but in no event less than three (3) Business Days before the Results Meeting conducted to discuss the report; and/or
- Additional comments on the Interconnection Study report up to (3) Business Days following the Results Meeting

This addendum report discloses below the written comments provided by the IC to SCE in accordance with the timelines stated in the GIP for final Facilities Study report for WDT1286 dated May 4, 2016.

Attachment A

WDT1286 Facility Study Final Revision dated 06/09/16

Please refer to separate document

1. Written comments provided by IC within ten (10) Business Days of receipt of the final Facility Study report dated May 4, 2016.
 - a. SCE to address the IC's pre-submitted questions and comments listed below pursuant to GIP Section 5.8.2.4.
 1. Are there any updates on the Distribution Upgrades Costs (Storage Control System Programming - \$506,798)? During the SIS results meeting it was discussed that these costs may be shared or otherwise distributed across other storage applicants
 2. When are construction activities scheduled to begin?
 - i. Due to the physical location of the facility, Customer Interconnection Facilities will be in close proximity to Monolith Substation operating systems. Customer construction will naturally need to coordinate with DO* engineering/operations/maintenance personnel.
 - ii. Physical location of customer provided switchgear requires concurrence from affected stakeholders.

*Note: DO stands for Distribution Owner

2. Written comments provided by IC three (3) Business Days following the Results Meeting.
 - a. None

Southern California Edison



WDAT 1286

Facility Study

Revision

June 9, 2016



SOUTHERN CALIFORNIA
EDISON

An EDISON INTERNATIONAL™ Company

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Executive Summary

Southern California Edison applied to Southern California Edison (SCE) for interconnection and wholesale distribution service for its proposed [REDACTED] pursuant to SCE's Wholesale Distribution Access Tariff (WDAT). SCE performed a Facility Study as requested by Southern California Edison for a 12 kV interconnection out of Monolith 66-12 kV Substation. The interconnection is an applicant owned 12 kV Switchgear, which will be located inside of Monolith 66-12 kV Substation. The request is for a WDAT Energy Storage facility with the ability to export and import a total capacity of [REDACTED]. The initial request is for service to commence by May 1, 2017.¹

The new energy storage facility, consisting of batteries, [REDACTED] will receive interconnection service from SCE's existing Monolith 66-12 kV Substation via an underground line extension to the applicant owned 12 kV Switchgear, where their protective device(s) will be installed. The generated power would be delivered to the California Independent System Operator (CAISO) grid at the 220 kV bus of SCE's Windhub Substation.

The purpose of the Facility Study is to determine:

- The estimated cost for the Distribution Upgrades and Interconnection Facilities that were identified in the System Impact Study.²
- The estimated time required to complete the design and construction of the Distribution Upgrades and Interconnection Facilities that were identified on the System Impact Study.

¹ Date as requested in the application. Actual operating date depends on design and construction requirements.

² A copy of the System Impact Study is provided as Attachment A.

Non-Binding Order of Magnitude Cost Estimate³⁴

Non-binding order of magnitude cost estimates for the required interconnection facilities and system upgrades can be found in Attachment C: Cost Estimate Summary Sheet

³ The Cost Estimate does not include the cost required for civil work completed by the customer

⁴ The Cost Estimates are in 2016 constant dollars

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Introduction

Southern California Edison applied to Southern California Edison (SCE) for interconnection and wholesale distribution service for its proposed [REDACTED] pursuant to SCE's Wholesale Distribution Access Tariff (WDAT). SCE performed a Facility Study as requested by Southern California Edison for a 12 kV interconnection out of Monolith 66-12 kV Substation. The interconnection is an applicant owned 12 kV Switchgear, which will be located inside of Monolith 66-12 kV Substation. The request is for a WDAT Energy Storage facility with the ability to export and import a total capacity of [REDACTED]. The initial request is for service to commence by May 1, 2017.⁵

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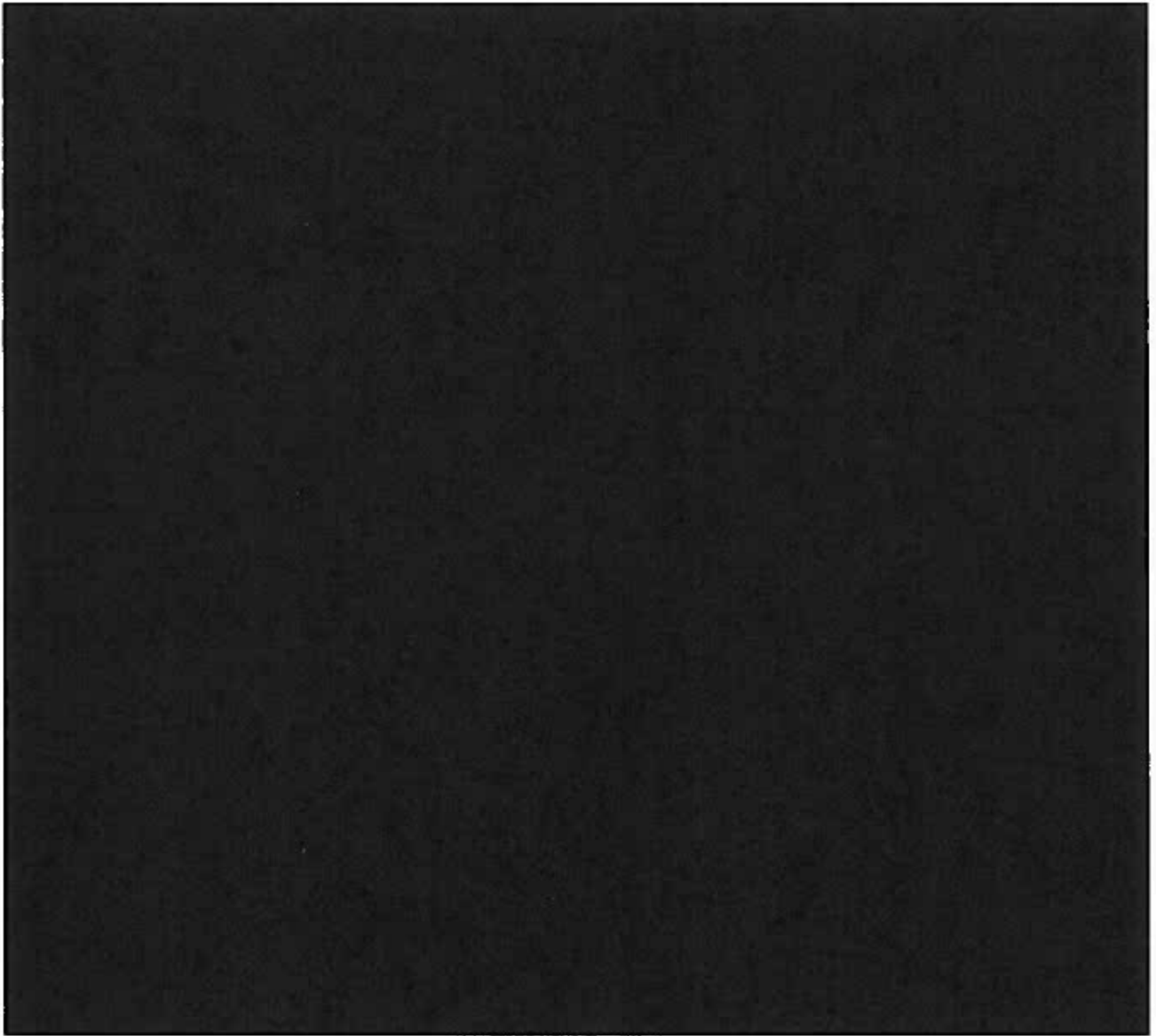


Figure 1 – Proposed method of service

Summary

1. Distribution Upgrades will be required to interconnect the system. Distribution Upgrades include the installation of a Central Remote Terminal Unit, Storage Control System Programming, and Data Point additions.
2. Interconnection facilities Interconnection facilities will be required to interconnect the system. Interconnection facilities include the installation of [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
3. Real time telemetry will be required for this project to provide Watts and VARs flow from the generating facility to the SCE distribution system.
4. Interconnection service pursuant to the WDAT would be expected to commence approximately 27 months from the execution of a Generator Interconnection Agreement (GIA). However, schedules and duration may change due to the number of projects approved and release dates. Stacked projects may impact resources, system outage availability, and environmental windows of construction.
5. Upgrades identified are general and preliminary descriptions only. The costs indicated are non-binding order of magnitude only. The schedule is projected and preliminary.
6. Applicant is responsible for the installation of Underground Structures and conduits needed for the interconnection in accordance with SCE design.
7. 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.
8. This report does not include all Real Properties evaluations and cost estimates. 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. For SCE facilities and scope of work not subject to CPUC's GO 131-D, SCE will follow the requirements of all applicable environmental laws and regulations and issue an in-house Environmental Clearance before commencement of construction activities. The cost estimates provided assume that SCE will provide oversight on facilities and scope of work on the customer's property and/or SCE will perform all required environmental activities for SCE

facilities and scope of work, located outside of the customer's property, from the siting through the post-construction phases. However, it is recommended for SCE facilities and scope of work to be included in the Generator's Environmental Licensing and Permitting documents to streamline the environmental process and avoid unnecessary delays in construction. The responsibilities for performing certain environmental activities may be negotiated during or after the Interconnection Agreement process.

10. This report does not consider potential milestone setbacks that could result from the local jurisdiction requiring underground construction of distribution facilities. SCE encourages the Interconnection Customer to consult with the local jurisdiction to identify existing underground ordinance to reduce the risk of complication associated with said ordinance.
11. Applicable to projects requesting primary service: This study does not include analysis related to coordination of system protection equipment. A coordination study may be required during final engineering. The coordination study may identify additional interconnection requirements such as installing new protection equipment, reprogramming and/or relocating existing protection equipment. The additional scope of work may have an effect on the Interconnection Customer's requested in-service date.
12. In order to supply and maintain proper voltages for SCE's customers as required by the CPUC, SCE's primary distribution voltage may fluctuate by as much as $\pm 5\%$ from the nominal values. SCE uses various voltage regulation techniques to raise or lower primary distribution voltages in order to maintain the customer's service voltage at the desired level. Producers interconnected at primary distribution voltage levels must be able to withstand such voltage changes. The step-up transformer ratio must be chosen such that the Producer can meet its voltage regulation obligations over the expected SCE system voltages. In the event, the customer is changing, replacing, or purchasing new equipment the customer shall acquire equipment to properly function with SCE's voltage regulation techniques.

Attachment A – System Impact Study

Attachment C – Cost Estimate Summary

WDT1286 - [REDACTED]

Escalated Cost and Time to Construct for Interconnection Facilities, Reliability Network Upgrades, Delivery Network Upgrades, and Distribution Upgrades

Project #: WDT1286

Cost Category	Costs per Category w/o ITCC (A)	One Time Costs (Note 1) (B)	Total Costs w/o ITCC (C=A+B)	Total Escalated Costs w/o ITCC	Estimated Time to Construct (Months)
	Constant 2016 Dollar in \$1000s (Estimate)	Constant 2016 Dollar in \$1000s (Estimate)	Constant 2016 Dollar in \$1000s (Estimate)	Escalated to OD Year in \$1000s	(Note 3,4,9)
Interconnection Facilities					
Substation	\$781	\$0	\$781	\$843	27
Distribution	\$178	\$0	\$178	\$192	27
Power System Control	\$0	\$6	\$6	\$7	27
Interconnection Facilities Total	\$959	\$6	\$965	\$1,042	27
Distribution Upgrades					
Substation	\$27	\$57	\$84	\$91	27
Telecommunication	\$11	\$0	\$11	\$12	27
Corporate Environmental	\$3	\$0	\$3	\$3	27
Power System Control	\$506	\$84	\$590	\$637	27
Distribution Upgrades Total	\$548	\$141	\$688	\$744	27
Grand Total	\$1,506	\$147	\$1,653	\$1,786	27

Note 1: The one time costs item(s) will be treated as applicable per the specified upgrade classification. They may be reimbursable depending on their classification.

Note 2: Distribution upgrades are not reimbursable. Allocated costs may change if all projects responsible for these upgrades do not execute Generator Interconnection Agreements.

Note 3: The estimated licensing cost and durations applied to this project are based on the project scope details presented in this study. These estimates are subject to change as project environmental and real estate elements are further defined. Upon execution of the Interconnection Agreement, additional evaluation including but not limited to preliminary engineering, environmental surveys, and property right checks may enable licensing cost and/or duration updates to be provided.

Note 4: Each Upgrade category may contain multiple work element construction durations. The longest construction duration is shown under the C.O.D Dollar Duration column.

Note 6: Individual O&M charges for the above construction costs will be identified and communicated during the Interconnection Agreement process.

Note 7: The Estimated Time to Construct (duration in months) is the schedule for the PTO to complete final engineering, design, procurement, licensing, and construction, etc., and other activities needed to construct and bring the facilities into service. Such activities are from the execution of the Generator Interconnection Agreements, and receipt of all required information, funding, and written authorization to proceed from the IC, as will be specified in the Interconnection Agreement, to commence work. The estimated schedule does not take into account unanticipated delays or difficulties securing necessary permits, licenses or other approvals; construction difficulties or potential delays in the project implementation process; or unanticipated delays or difficulties in obtaining and receiving necessary clearances for interconnection of the project to the transmission system.

Note 8: The escalation factors to convert the estimated cost (in 'constant' 2016 dollars) to the estimated C.O.D. are found in the posted SCE 2016 Per Unit Cost Guide on the CAISO website: <http://www.caiso.com/informed/Pages/StakeholderProcesses/ParticipatingTransmissionOwnerPerUnitCosts.aspx>

Note 9: Estimated Time to Construct durations are from completion of any preceding facilities required.