
Appendix A – WDAT1003ISP

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QUEUE CLUSTER 6 PHASE I REPORT



January 17, 2014

This study has been completed in coordination with CAISO per CAISO Tariff Appendix DD Generator Interconnection Procedures and Deliverability Allocation Procedures (GIDAP)

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Attachments:

1. Not Used
2. Escalated Cost and Time to Construct for Interconnection Facilities, Reliability Network Upgrades, Delivery Network Upgrades, and Distribution Upgrades
3. Allocation of Network Upgrades for Cost Estimates
4. Distribution Provider Interconnection Handbook
5. Short Circuit Calculation Study Results (see Appendix H of the area report)

A. Introduction

██████████ an Interconnection Customer (IC), previously submitted a completed Interconnection Request (IR) to SCE under the Independent Study Process (ISP), in accordance with the Wholesale Distribution Access Tariff (WDAT) Attachment I Section 5.2.1, for their proposed ██████████ (Project). The Project consists of five (5) combined cycle units with its Point of Interconnection (POI) at SCE's Brea 66 kW Substation, which is connected to the Olinda 220/66 kV System. The IC has requested a Commercial Operation Date (COD) of July 22, 2013 for the Project.

In accordance with the ISP, the cost and schedule for the Interconnection Facilities, Distribution Upgrades and Reliability Network Upgrades required to interconnect the Project, under Energy Only Deliverability status, have been addressed. The results are disclosed in SCE's previously issued System Impact Study (SIS) report package that included the WDAT System Impact report dated May 15, 2013.

In its IR, the IC elected Full Capacity Deliverability Status for the Project, and in accordance with WDAT Attachment I Section 5.6, the Project was included in the QC6 Phase I Interconnection Study for the purpose of performing an initial deliverability assessment for evaluation of the requested Full Capacity Deliverability Status. Similarly, in compliance with WDAT Attachment 1, Section 5.8.1.1, costs associated with Short Circuit Duty (SCD) mitigations may be assessed by the Project for impacts on the CAISO grid.

An area report has been prepared separately identifying the combined impacts of all projects in the group on the CAISO Controlled Grid. This report focuses only on the impacts or impact contributions of the Project, and it is not intended to supersede any contractual terms or conditions specified in an Interconnection Agreement.

The report provides the following:

1. Identify impacts on the CAISO Controlled Grid of the Project associated with the Full Capacity Deliverability Status;
2. Preliminarily identify all Delivery Network Upgrades required to provide the Project with Full Capacity Deliverability Status;
3. Preliminarily identify Reliability Network Upgrades required due to Full Capacity Deliverability Status;
4. Establish the cost responsibility for Network Upgrades assigned to the IC due to Full Capacity Deliverability Status. A good faith estimate of the Project's cost responsibility and time to construct¹ these facilities is provided in Attachment 1 and Attachment 2 as separate documents in the Appendix A Project report package.

For the detailed Project description and Project interconnection/POI discussion please refer to previously issued ISP Project reports mentioned above.

¹ It should be noted that construction is only part of the duration of months specified in the study, includes final engineering, licensing, etc, and other activities required to bring such facilities into service. These durations are from the execution of the Interconnection Agreement, receipt of: all required information, funding, and written authorization to proceed from the IC as will be specified in the Interconnection Agreement to commence the work.

B. Study Assumptions

For detailed assumptions, please refer to the area report. Project interconnection assumptions remain the same as the Project ISP study report(s).

C. Reliability Assessment Results

1. Steady State Power Flow Analysis Results

Because the steady state flow reliability impacts of the Project have been identified in the Project ISP interconnection studies, there were no identified power flow reliability issues associated with the Project Full Capacity Deliverability Status.

2. Short Circuit Duty Analysis

(a) Study Results

The short circuit methodology for QC6 Phase I is discussed in the Phase I area report. Based on this methodology, the breaker evaluation identified overstressed circuit breakers at the following buses. The cost allocation for the Project, based on SCD contribution at each location, is also provided:

SCD Mitigation – Table of Network Breaker Upgrades

N/A

SCD Mitigation – Table of Distribution Breaker Upgrades

N/A

(b) Preliminary Protection Requirements

Protection requirements are designed and intended to protect the Distribution Provider's system only. The IC is responsible for the protection of its own system and equipment and must meet the requirements in the Distribution Provider Interconnection Handbook provided in Attachment 4.

3. Transient Stability Evaluation

Because the transient stability reliability impacts of the Project have been identified in the Project ISP interconnection studies, there were no identified transient stability reliability issues associated with the Project to Full Capacity Deliverability Status.

4. Reactive Power Deficiency Analysis

The Project will need to be designed to maintain a composite power delivery at continuous rated power at the POI as stated in the Energy Only Interconnection Agreement.

D. Deliverability Assessment Results

1. On Peak Deliverability Assessment

No deliverability constraints were identified for the Project in the on-peak deliverability assessment.

Off- Peak Deliverability Assessment

No deliverability constraints were identified for the Project in the off-peak deliverability assessment.

Required Mitigations

No mitigation is triggered by the Project for Full Capacity Deliverability Status.

E. Network Upgrades, Cost, and Construction Duration Estimates

To determine the cost responsibility of each generation project in QC6, the CAISO developed cost allocation factors (Attachment 3) for Reliability Network Upgrades, Local Delivery Network Upgrades and Area Delivery Network Upgrades. Please see Attachment 1 for the Network Upgrades allocated to the Project. Attachment 2 provides the 'constant' 2013 dollars and their escalation to the estimated COD year for Interconnection Facilities, Reliability Network Upgrades, Delivery Network Upgrades, and Distribution Upgrades which the Project was allocated cost. For the QC6 Study, the estimated COD is derived by assuming the duration of the work element will begin in June 2015, which is the CAISO Tariff scheduled completion date of the QC6 Phase I study plus 120 days for the Interconnection Agreement signing period and submittal of required funds by the IC.

F. SCE Technical Requirements

The IC is responsible for the protection of its own system and equipment and must meet the requirements in the Distribution Provider Interconnection Handbook provided in Attachment 4.

G. Environmental Evaluation, Permitting, and Licensing

Please see Appendix K of the QC6 Phase I area report.

H. Affected System Coordination

The CAISO Generator Interconnection and Deliverability Allocation Procedures (GIDAP) tariff Appendix DD section 3.7 requires that as part of the generator interconnection process, the ISO must regularly coordinate with adjacent electric systems in order to facilitate studies of potential reliability concerns caused by the interconnection of generation in the ISO generation interconnection queue to the ISO controlled grid. Similarly, generators interconnecting to the facilities of transmission owners in adjacent electric systems may cause potential reliability concerns on the ISO controlled grid.

The ISO tariff defines an "Affected System" as an electric system other than the ISO controlled grid that may be affected by the proposed interconnection, and an "Affected System Operator" as the entity operating an Affected System. The ISO tariff provides a general framework for

addressing the impact on Affected Systems of generation projects in the ISO interconnection queue. The tariff states that, in the initial project study stages, the ISO will:

- Notify potential Affected System Operators that could be impacted by a generator interconnection;
- Coordinate the conduct of studies to determine possible impacts; and
- Include potential Affected System Operators in all customer meetings.

However, the ISO does not comprehensively study the impacts of generator interconnections on Affected Systems, for several reasons. First, the ISO does not have detailed information about Affected Systems on a transmission-element level, nor does the ISO know the details of the various reliability and operating criteria applicable to the Affected Systems. Second, because the operation of transmission systems changes over time along with NERC reliability standards, the ISO cannot presume to know all of the impacts of these changes on Affected Systems. Consequently, the interconnection customer is responsible for:

- Cooperating with the ISO in all matters related to the Affected System studies;
- Signing a separate study agreement with the Affected System Operator so that potential impacts on the Affected System can be evaluated; and
- Paying for necessary studies and any upgrades necessary to mitigate the impacts of their interconnection on the Affected System.

Further, the Affected System Operator is required to cooperate with the ISO on all matters related to the conduct of studies and modifications to the Affected System.

The interconnection customer is obligated by the terms of the ISO's relevant generator interconnection agreement (large or small) to enter into an agreement with the Affected System Operator, which must specify the terms governing payments for studies and mitigation, if required, to be made by the customer to the Affected System owner, and repayment by the Affected System Operator.

California Department of Water Resources (CDWR) and Los Angeles Department of Water and Power (LADWP)'s transmission networks adjoin the Northern Area. As such, the Project could potentially impact CDWR and /or LADWP systems. The ISO has notified CDWR and LADWP of the Project and provided study data and information for their review.

Prior to its generating unit in-service date, the Interconnection Customer must provide documentation to the ISO confirming that the Affected System Operators have been contacted, that any system reliability impacts have been addressed (or that there are no system impacts), or that the interconnection customer has taken all reasonable steps to address potential reliability system impacts with the Affected System Operator but has been unsuccessful.

I. Items not covered in this study

For a list of items not covered in this study, see the Project ISP study report(s) and the QC6 Phase I Area report.

Attachment 1
Not Used

Attachment 2

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

There were no costs assigned to the Project as part of this Phase I study, beyond those identified as the Energy Only interconnection study of the Project.

Attachment 3

Allocation of Network Upgrades for Cost Estimates

There is no Network Upgrade costs assigned to the Project in this Phase I study. The maximum Network Upgrade responsibility for the Project is zero.

Attachment 4

Distribution Provider Interconnection Handbook

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

Attachment 5

Short Circuit Calculation Study Results

Please refer to the Appendix H of the area report.