This study has been completed in coordination with the California Independent System Operator (ISO) per Southern California Edison Company’s Wholesale Distribution Access Tariff, Attachment I Generator Interconnection Procedures (GIP)
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Attachments:
1. Interconnection Facilities, Network Upgrades, and Distribution Upgrades
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’s Interconnection Handbook
5. Short Circuit Calculation Study Results (see Appendix H of the Area Report)
6. Customer Provided Project Dynamic Data
7. SCE Northern Hemisphere Import Nomogram
A. Introduction

the Interconnection Customer (IC), submitted an interconnection request for the Project, comprised of a gross total of 24 MW wind generation. The Interconnection Request was submitted following the Independent Study Process (ISP) requesting Interconnection to the existing Cal Cement 66/4.16 kV Substation at the 4.16 kV voltage level. A System Impact Study (SIS) was performed which did identify the need for Reliability Network Upgrades (RNU) and Distribution Upgrades (DU) to interconnect the Project. The cost and schedule for the Interconnection Facilities (IF), RNU, and DU required to interconnect the Project, under Energy Only Deliverability status, have been provided in SCE’s previously issued System Impact Study report dated September 9, 2016, and the System Impact Study with Time-of-Day Sensitivity Report dated May 17, 2017 and transmitted to the IC on October 17, 2017.

As part of the ISP request, the IC elected Full Capacity Deliverability Status (FCDS) with a desired Commercial Operation Date (COD) of August 31, 2016. The actual COD will depend on design and construction requirements to interconnect the Project to the Distribution Provider’s Distribution System; after the Generator Interconnection Agreement (GIA) has been executed and filed at the Federal Energy Regulatory Commission (FERC) for acceptance. In accordance with WDAT Attachment I Section 5.6 and Section 5.8.1.1, the Project was included in the QC9 Phase I Interconnection Studies for the purpose of performing the deliverability assessment for evaluation of the requested Full Capacity Deliverability Status and Short Circuit Duty (SCD) under an FCDS interconnection.

An Area Report has been prepared separately identifying the combined impacts of all projects in the area on the CAISO Controlled Grid. This report focuses only on the impacts or impact contributions associated with the Full Capacity Deliverability Status of the Project, and it is not intended to supersede any contractual terms or conditions specified in a GIA.

For the Project description and the Project plan of service/point of interconnection discussion please refer to the System Impact Study dated September 9, 2016 for the Project.

The report provides the following:

1. Impacts on the CAISO Controlled Grid of the Project associated with the Full Capacity Deliverability Status;

2. System reinforcements necessary to mitigate the adverse impacts associated with the Project requested Full Capacity Deliverability Status;

3. A list of required facilities and a good faith estimate of the Project’s cost responsibility and time to construct these facilities. Such information is provided in Attachment 1 and Attachment 2 as separate documents in the Appendix A Project report package.

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

For detailed assumptions regarding the group cluster analysis, please refer to the QC9 Phase I Area Report.

C. Reliability Standards, Study Criteria and Methodology

The generator interconnection studies will be conducted to ensure the CAISO-controlled grid is in compliance with the North American Electric Reliability Corporation (NERC) reliability standards, WECC regional criteria, and the CAISO planning standards. Refer to Section C of the Area Report for details of the applicable reliability standards, study criteria and methodology.

D. Power Flow Reliability Assessment Results

Because the power flow reliability impacts of the Project have been identified in the System Impact Study, there were no identified power flow reliability issues associated with the Project in the QC9 Phase I Study.

E. Short Circuit Duty Results

The short circuit methodology for QC9 Phase I is discussed in the Area Report. Based on this methodology there are no Short Circuit Duty (SCD) mitigation costs allocated to the Project associated with the Full Capacity Deliverability Status.

F. Transient Stability Evaluation

Because the power flow reliability impacts of the Project have been identified in the System Impact Study, there were no identified transient stability issues associated with the Project in the QC9 Phase I Study.

G. Power Factor Requirements

For power factor requirements, please refer to the System Impact Study.

H. Deliverability Assessment Results

1. On Peak Deliverability Assessment
   The Project does not contribute to any deliverability constraints.

2. Off-Peak Deliverability Assessment
   Under off-peak conditions, Antelope – Vincent 500kV No. 1 and No. 2 transmission lines are overloaded under various contingency conditions. For details, see Section E.2 of the Area Report.

3. Required Mitigations
   The Project is set to Option (A) for deliverability since the request was made through the Independent Study Process. No Area Delivery Network Upgrades are required under Option (A).
I. Interconnection Facilities, Network Upgrades, and Distribution Upgrades

Please see System Impact Study for the Interconnection Facilities, Reliability Network Upgrades, and Distribution Upgrades allocated to the Project.

J. Cost and Construction Duration Estimates

To determine the cost responsibility of each generation project in QC9 Phase I, the CAISO developed cost allocation factors (Attachment 3) for Reliability Network Upgrades and Local Delivery Network Upgrades. Attachment 2 provides the 'constant' 2016 dollars and their escalation to the estimated COD year for Network Upgrades associated with the Full Capacity Deliverability Status.

K. 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’s Interconnection Handbook provided in Attachment 4.

L. Items not covered in this study

For a list of items not covered in this study, see the Project ISP Interconnection Study report(s) and the QC9 Phase II Area Report.
Attachment 1
Interconnection Facilities, Network Upgrades and Distribution Upgrades

None as part of the QC9 Phase II study.
Attachment 2
Escalated Cost and Time to Construct for Interconnection Facilities, Reliability Network Upgrades, Delivery Network Upgrades, and Distribution Upgrades

None as part of the QC9 Phase II study
Attachment 3
Allocation of Network Upgrades for Cost Estimates

No network upgrade cost is assigned to the Project as part of the QC9 Phase II study.
Attachment 4
Distribution Provider’s Interconnection Handbook

Interconnection Handbook at the following link:

Attachment 5
Short Circuit Calculation Study Results

Please refer to System Impact Study Report.
Attachment 6
Customer Provided Project Dynamic Data

Please refer to System Impact Study report.
Attachment 7
Not Used