Addendum to Phase II Report - WDAT901

[redacted]

ADDENDUM TO

QUEUE CLUSTER 5 PHASE II REPORT

December 29, 2013

This study has been completed in coordination with California Independent System Operator Corporation (CAISO) per CAISO Tariff Appendix DD Generator Interconnection and Deliverability Allocation Procedures (GIDAP) for Interconnection Requests in a Queue Cluster Window.

Executive Summary

[redacted] the Interconnection Customer (IC), has submitted a completed Interconnection Request (IR) to the Southern California Edison Company (SCE) for their proposed [redacted] (Project) under the terms of SCE's Wholesale Distribution Access Tariff (WDAT), WDAT901.

Subsequent to the release of the QC5 Phase II report package for the Project it was determined that the following items in the QC5 Phase II report package for the Project needed to be updated to reflect the treatment of the one-time costs as applicable per the specified upgrade classification.

1. Cost and Construction Duration Estimates for Upgrades in Area (Appendix E) of the Area report dated December 3, 2013.

The Escalated Cost and Time to Construct for Interconnection Facilities, Reliability Network Upgrades, Delivery Network Upgrades, and Distribution Upgrades (Attachment 3) was also adjusted to reflect the appropriate estimated duration (changed from 27 months to 18 months) for the construction of the facilities required by the project. In addition, the Interconnection Facilities, Network Upgrades and Distribution Upgrades (Attachment 2) of the Appendix A report for the Project was updated to reflect the installation of a centralized RTU (if applicable).

These items have been updated accordingly, and are attached as part of this Addendum report package. The corresponding changes replace and supersede those same sections in the Project's QC5 Phase II Appendix A report dated December 6, 2013 and Area report dated December 3, 2013.

Summary of changes:

1. Replace the following in the QC5 Phase II report package:
    a. Escalated Cost and Time to Construct for Interconnection Facilities, Reliability Network Upgrades, Delivery Network Upgrades, and Distribution Upgrades (Attachment 3) of the Appendix A report dated December 6, 2013 to reflect the updated estimated costs for the Project to reflect the change(s) mentioned above.
    b. Cost and Construction Duration Estimates for Upgrades in Area (Appendix E) of the Area report dated December 3, 2013 to reflect the updated estimated costs as stated above to reflect the change(s) mentioned above.

2. Replace the Interconnection Facilities, Network Upgrades and Distribution Upgrades (Attachment 2) of the Appendix A report for the Project dated December 6, 2013 to reflect the change mentioned above.

The remainder of the original report is unchanged.

Attachment 2

Interconnection Facilities, Network Upgrades, and Distribution Upgrades

Please refer to separate document.

Attachment 3

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

Please refer to separate document.

Appendix E

Cost and Construction Duration Estimates for Upgrades in Area

Please refer to separate document.

Attachment 2 to Queue Cluster 5 Phase II Addendum Report

WDAT901[redacted]

Interconnection Facilities, Network Upgrades and Distribution Upgrades

Interconnection Facilities, Network Upgrades and Distribution Upgrades

Distribution Provider's Interconnection Facilities, Network Upgrades and Distribution Upgrades described in this Attachment are based on the Distribution Provider's preliminary engineering and design. Such descriptions are subject to modification to reflect the actual facilities that are constructed and installed following the Distribution Provider's final engineering and design, identification of field conditions, and compliance with applicable environmental and permitting requirements.

1. Interconnection Facilities.

(a) **Interconnection Customer's Interconnection Facilities.** The Interconnection Customer shall:

(i) Install a [redacted]

(ii) Procure and construct underground duct banks and related structures required for Distribution Provider's Interconnection Facilities and Distribution Upgrades ("Civil Construction")[i] in accordance with specifications and designs provided by the Distribution Provider.

(iii) Obtain all necessary permits and easements associated with installation of Civil Construction.

(iv) If applicable, provide the following:

1. Completed Interconnection Customer information sheet
2. Street improvement plan(s)
3. Unique address for Point of Interconnection
4. Public right-of-way (street) base map(s) as required by the interconnection
5. Site plot plan on a 30:1 scale digital file as follows:
   a. Easements/lease agreement(s)
   b. Grading plan(s)
   c. Sewer and storm plot plan(s)
   d. Landscape, sprinkler, pedestal location(s)
   e. Complete construction of underground systems for the Distribution Provider's Interconnection Facilities and Distribution Provider's Distribution Upgrades

(v) Acquire an agreement from the property owner at [redacted] for the Distribution Provider to have the following:

1. The right to enter property owner's premises for any purpose connected with the Distribution Provider's Interconnection Facilities or interconnection service,
2. The right for the use of a Distribution Provider approved locking device if Interconnection Customer wants to prevent unauthorized access to Distribution Provider's Interconnection Facilities,
3. The right for safe and ready access for Distribution Provider's personnel free from unrestrained animals,
4. The right for unobstructed ready access for Distribution Provider's vehicles and equipment to install, remove, repair, and maintain its Interconnection Facilities,

5. The right to remove Distribution Provider's Interconnection Facilities after termination of interconnection service.

(vi) Install, in coordination with, and as specified by, the Distribution Provider, a [redacted] from the local telephone company to support the Remote Terminal Unit ("RTU") communication to the Distribution Provider's energy management system in accordance with the Interconnection Handbook if a RTU is installed locally at the Generating Facility.

(vii) Designate, to the T1 circuit provider, the Distribution Provider as a representative authorized to report trouble to, and to initiate repairs with, the communication circuit provider on the Interconnection Customer's behalf in the event of an interruption of service on the communication circuit if a T1 circuit is required for the support of a RTU installed locally at the Generating Facility.

(viii) Allow the Distribution Provider to review the Interconnection Customer's telecommunication equipment design and perform inspections to ensure compatibility with the Distribution Provider's RTU, or equipment related to an alternative approved by the Distribution Provider, and related terminal equipment; allow the Distribution Provider to perform acceptance testing of the telecommunication equipment and the right to request and/or to perform correction of installation deficiencies.

(ix) Provide required data signals, make available adequate space, facilities. and associated dedicated electrical circuits within a secure building having suitable environmental controls for the installation of the Distribution Provider's RTU, or equipment related to an alternative approved by the Distribution Provider, in accordance with the Interconnection Handbook.

(x) Make available adequate space, facilities, and associated electrical circuits within a secure building having suitable environmental controls for the installation of the Distribution Provider's telecommunications terminal equipment in accordance with the Interconnection Handbook if a RTU is installed locally at the Generating Facility.

(xi) Install all required ISO-approved compliant metering equipment at the Generating Facility, in accordance with Section 10 of the ISO Tariff.

(xii) Allow the Distribution Provider to install, in the switchgear provided by the Interconnection Customer, revenue meters, potential transformers ("PTs"), and current transformers ("CTs"), to meter retail load at the Generating Facility in accordance with the Distribution Provider's Electrical Service Requirements ("ESR") as described in the Interconnection Handbook.

(xiii) Install all equipment necessary to comply with the power factor requirements of Article 9.6 of the GIA, including the ability to regulate power factor to a schedule (VAR schedule) in accordance with the Interconnection Handbook.

(xiv) Provide switchboard drawings which shall comply with Distribution Provider's ESR which can be obtained at: http://www.sce.com/AboutSCE/Regulatory/distributionmanuals/esr.htm

(xv) Install disconnect facilities in accordance with the Distribution Provider's Interconnection Handbook to comply with the Distribution Provider's switching and tagging procedures.

(xvi) Install a breaker within the Interconnection Customer's property line in accordance with the ESR to comply with the Distribution Provider's protection requirements.

(xvii) Install all equipment and controls necessary to maintain the Generating Facility's output ramp rate within the parameters set forth, and provided to the Interconnection Customer, by the Distribution Provider.

(b) **Distribution Provider's Interconnection Facilities.** The Distribution Provider shall:

(i) **Mingo 12 kV Circuit.**

1. Install approximately [redacted]
2. Install [redacted]
3. Install [redacted]

(ii) **Telecommunications.**

Install all required equipment (including terminal equipment) supporting the RTU or alternative approved by the Distribution Provider, including the communications interface with the Distribution Provider's energy management system. In accordance with the Interconnection Handbook, the Distribution Provider shall provide the required interface equipment at the Generating Facility necessary to connect the RTU to the Interconnection Customer's T1 circuit if a RTU is installed locally at the Generating Facility. Additionally, the Distribution Provider will provide the interface equipment required to connect the T1 circuit to the Distribution Provider's energy management system if a RTU is installed locally at the Generating Facility. Notwithstanding that certain telecommunication equipment, including the telecommunications terminal equipment, will be located on the Interconnection Customer's side of the Point of Change of Ownership, the Distribution Provider shall own, operate and maintain such telecommunication equipment as part of the Distribution Provider's Interconnection Facilities if a RTU is installed locally at the Generating Facility.

(iii) **Real Properties, Transmission Project Licensing, and Corporate Environmental Health and Safety.**

Obtain easements and/or acquire land, obtain licensing and permits, and perform all required environmental activities for the installation of the Distribution Provider's Interconnection Facilities, including any associated telecommunication equipment for the Mingo 12 kV Circuit.

(iv) **Metering.**

Install 12 kV primary revenue meters and appurtenant equipment required to meter the retail load at the Generating Facility. Notwithstanding that metering equipment, will be located on the Interconnection Customer's side of the Point of Change of Ownership. The Distribution Provider shall own, operate and maintain such facilities as part of the Distribution Provider's Interconnection Facilities.

(v) **Power System Control.**
Install one (1) RTU at the Generating Facility to monitor typical generation elements such as MW, MVAR, terminal voltage and circuit breaker status for the Generating Facility and plant auxiliary load, and transmit the information received thereby to the Distribution Provider's grid control center. Notwithstanding that the RTU will be located on the Interconnection Customer's side of the Point of Change of Ownership, the Distribution Provider shall own, operate and maintain the RTU as part of the Distribution Provider's Interconnection Facilities. Notwithstanding the foregoing, at the Distribution Provider's election, an alternative to installing a RTU locally at the Generating Facility may be implemented in accordance with specifications provided by the Distribution Provider to comply with the real-time telemetering requirements set forth in the Interconnection Handbook.

2. **Network Upgrades.**

(a) **Stand Alone Network Upgrades**. None.

(b) **Other Network Upgrades.**

(i) **Reliability Network Upgrades.** None.

(ii) **Delivery Network Upgrades.**

1. **Area Delivery Network Upgrades.** None.

2. **Local Delivery Network Upgrades.** None.

3. **Distribution Upgrades.** The Distribution Provider shall:

(a) **Mingo 12 kV Circuit.**
(i) [redacted] to monitor MW power flow on the Mingo 12 kV circuit.
(ii) [redacted] primary underground cable.
(iii) Install [redacted]
(iv) Install [redacted]

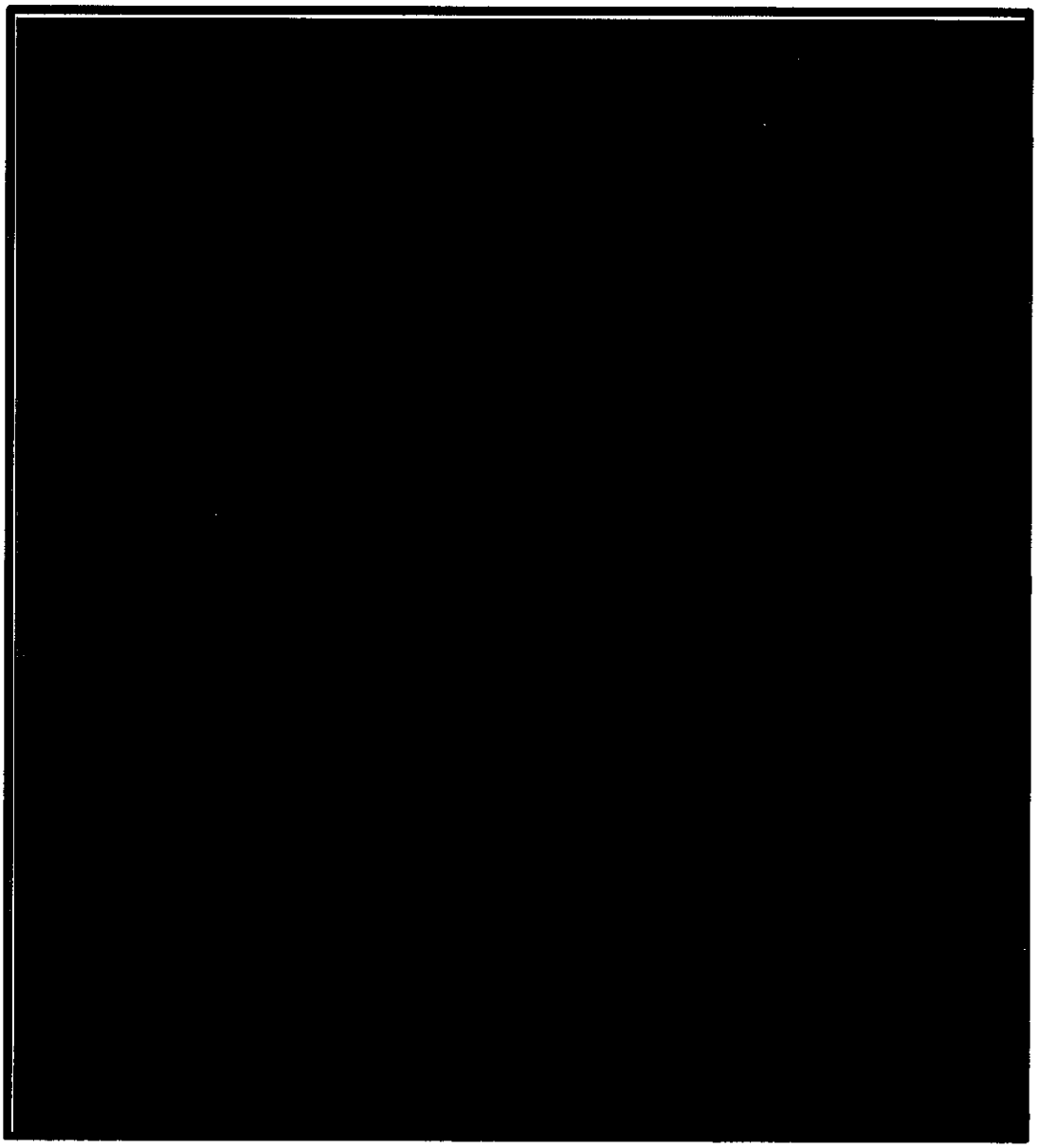
(b) **Real Properties, Transmission Project Licensing, and Corporate Environmental Health and Safety.**
Obtain easements and/or acquire land, obtain licensing and permits, and perform all required environmental activities for the installation of the Distribution Upgrades.

4. **Affected System Upgrades.** Not Used.

5. **Point of Change of Ownership.**
The Point of Change of Ownership shall be at the utility pull section of the new 12 kV switchgear provided, installed, and owned by the Interconnection Customer.

6. **Point of Interconnection.** At the Distribution Provider's [redacted] on the Distribution Provider's Mingo 12 kV Circuit out of Savage 115/12 kV Substation.

7. **One-Line Diagram of Interconnection to Savage 115/12 kV Substation.**



[i] The Interconnection Customer understands and acknowledges that the Civil Construction in support of the interconnection for the Project may be classified as Interconnection Customer-constructed Distribution Provider interconnection facilities and/or Distribution Upgrades and may require transfer of ownership pursuant to Section

3(l) under Appendix C of the GIA. The Interconnection Customer understands and acknowledges that it shall be responsible for the ITCC and ongoing monthly Interconnection Facilities Charge and/or Distribution Upgrades charge of the portion of Civil Construction transferred to Distribution Provider. In addition, following completion of construction of the Civil Construction and prior to the in-service date of the Civil Construction, Interconnection Customer shall provide to Distribution Provider the final invoiced costs of the portion of Civil Construction transferred to Distribution Provider and shall be an acceptable form to Distribution Provider.

Attachment 2 to Queue Cluster 5 Phase II Addendum Report

[redacted]

Interconnection Facilities, Network Upgrades and Distribution Upgrades

Interconnection Facilities, Network Upgrades and Distribution Upgrades

Distribution Provider's Interconnection Facilities, Network Upgrades and Distribution Upgrades described in this Appendix A to the GIA are based on the Distribution Provider's preliminary engineering and design. Such descriptions are subject to modification to reflect the actual facilities that are constructed and installed following the Distribution Provider's final engineering and design, identification of field conditions, and compliance with applicable environmental and permitting requirements.

1. Interconnection Facilities.

(a) **Interconnection Customer's Interconnection Facilities.** The Interconnection Customer shall:

(i) Install a substation with one [redacted]

(ii) Install a new 100 feet 66 kV generation tie-line from the Generating Facility to the Distribution Provider's Protein Substation. This generation tie-line will be referred to as the Protein – WDT940 66 kV Line. The right-of-way for the Protein – WDT940 66 kV Line shall extend up to the edge of the Protein Substation property line.

(iii) Install appropriate fiber optic cables for the diverse telecommunication paths and panels to terminate the telecommunication fiber optic cables for both diverse telecommunication paths, as specified by the Distribution Provider to match the telecommunication equipment used by the Distribution Provider Protein Substation and at the Generating Facility, in order to protect Protein – WDT940 66 kV Line. The telecommunications paths shall meet the Applicable Reliability Standards criteria for diversity.

(iv) Own, operate and maintain the telecommunication path (fiber optic cables and appurtenant facilities), with the exception of the terminal equipment at both Protein Substation and at the Generating Facility, which terminal equipment will be installed, owned, operated and maintained by the Distribution Provider.

(v) Allow the Distribution Provider to review the Interconnection Customer's telecommunication equipment design and perform inspections to ensure compatibility with the Distribution Provider's terminal equipment and protection engineering requirements; allow the Distribution Provider to perform acceptance testing of the telecommunication equipment and the right to request and/or to perform correction of installation deficiencies.

(vi) Provide required data signals, make available adequate space, facilities, and associated dedicated electrical circuits within a secure building having suitable environmental controls for the installation of the Distribution Provider's RTU in accordance with the Interconnection Handbook.

(vii) Make available adequate space, facilities, and associated dedicated electrical circuits within a secure building having suitable environmental controls for the installation of the Distribution Provider's telecommunications terminal equipment in accordance with the Interconnection Handbook.

(viii) Extend the fiber optic cable for the diverse telecommunications to the Distribution Provider's telecommunications terminal equipment specified above.

(ix) Install all required ISO-approved compliant metering equipment at the Generating Facility, in accordance with Section 10 of the ISO Tariff.

(x) Install a revenue metering cabinet and revenue metering equipment (typically, voltage and current transformers) at the Generating Facility to meter the Generating Facility retail load, as specified by the Distribution Provider. The metering cabinet must be placed at a location that would allow twenty-four hour access for the Distribution Provider's metering personnel.

(xi) Allow the Distribution Provider to install, in the revenue metering cabinet provided by the Interconnection Customer, revenue meters and appurtenant equipment required to meter the retail load at the Generating Facility.

(xii) Install relay protection to be specified by the Distribution Provider to match the relay protection used by the Distribution Provider at Protein Substation and at the Generating Facility, in order to protect the Protein – WDT940 66 kV Line, as follows:

1. Two (2) current differential relays via diversely routed dedicated digital communication channels to Protein Substation. The make and type of the current differential relays will be specified by the Distribution Provider during final engineering.

(xiii) Install one (1) RFL relay as isolation detection.

(xiv) Install disconnect facilities in accordance with the Distribution Provider's Interconnection Handbook to comply with the Distribution Provider's switching and tagging procedures.

(b) **Distribution Provider's Interconnection Facilities.** The Distribution Provider shall:

(i) **Protein Substation.**

1. Install the following protection requirements on the Protein-WDT940 66 kV Line:
   a. Two (2) current differential relays.
2. Install 66 kV line drop
3. Perform Ground Grid Study

(ii) **Sub-Transmission.**

Install one (1) tubular steel pole and approximately 100 circuit feet of overhead conductor.

(iii) **Telecommunications.**

Install cross connects between RTU and IC's circuit to Protein Substation and from Protein Substation to Rector RDAC.

(iv) **Real Properties.**

Obtain access easement for RTU.

(v) **Corporate Environmental Health and Safety.**

Obtain licensing and permits, and perform all required environmental activities for the installation of the Distribution Provider's Interconnection Facilities.

(vi) **Transmission Project Licensing.** None.

(vii) **Metering.**

Install SCE retail meter at the Generating Facility in tandem with the IC's ISO meter.

(viii) **Power System Controls.**

Install one (1) RTU at Generating Facility to monitor typical generation elements such as MW, MVAR, terminal voltage and circuit breaker status for the Generating Facility and plant auxiliary load, and transmit the information received thereby to the Distribution Provider's grid control center.

2. **Network Upgrades.**

(a) **Stand Alone Network Upgrades**. None.

(b) **Other Network Upgrades.**

(i) **Reliability Network Upgrades.** None.

(ii) **Delivery Network Upgrades.**

1. **Area Delivery Network Upgrades.** None.
2. **Local Delivery Network Upgrades.** None.

3. **Distribution Upgrades.** The Distribution Provider shall:

(a) **Elcans 66 kV Substation.**

Replace 66 kV fuse

(b) **Protein Substation.**

(i) Install one (1) 66 kV circuit breaker

(ii) Install one (1) set of 66 kV disconnect switches

(iii) Install the following protection requirements:

1. Four (4) sync check relays
2. One (1) current differential relay
3. Three (3) zone distance overcurrent relays
4. Six (6) voltage transformers
5. Four (4) steel relay cubicles and foundations

(c) **Dairymans Substation.**

(i) Install three (3) bushing current transformers

(ii) Install three (3) voltage transformers

(iii) Install one (1) current differential relay

(iv) Install one (1) relay cubicle

(v) Install cable trench

(vi) Install control cable

(d) **Rector Substation.**

(i) Install one (1) RFL relay

(e) **Telecommunications.**

(i) Install lightwave, channel banks, and associated equipment at Dairymans Substation, Protein Substation, Tulare Substation, San Joaquin Valley District Office ("SJVDO"), and Rector Communications

(ii) Install Shelter enclosures at Dairymans and Protein Substations.

(iii) Install approximately 9,400 feet of fiber optic cable between Dairymans and Protein Substations

(iv) Install approximately 1,900 feet of fiber optic cable between Protein Substation and SJVDO.

(f) **Real Properties.**

(i) Perform rights check for approximately 2 miles of new fiber optic cable.

(g) **Corporate Environmental Health and Safety.**

(i) Obtain licensing and permits, and perform all required environmental activities for the installation of the Distribution Provider's Distribution Upgrades.

(h) **Power System Controls.**

(i) Point additions to existing RTU at Rector Substation for relay status and alarm.

2. **Affected System Upgrades:** Not Used.

3. **Point of Change of Ownership.**

(a) Protein – WDT940 66 kV Line: The Point of Change of Ownership shall be the point where the conductors of the Protein – WDT940 66 kV Line are attached to the IC owned dead-end structure ("Last Structure"), which will be connected on the side of the Last Structure facing Protein Substation. The Interconnection Customer shall own and maintain the Last Structure, the conductors, insulators and jumper loops from such Last Structure to the Interconnection Customer's Generating Facility. The Distribution Provider will own and maintain Protein Substation, as well as all circuit breakers, disconnects, relay facilities and metering within Protein Substation, together with the line drop, in their entirety. The Distribution Provider will own the insulators that are used to attach the Distribution Provider-owned conductors to the Last Structure.

(b) Telecommunication fiber optic paths: The telecommunication diverse fiber optic cables, between the communication room at WDT940 and communication shelter

enclosure at Protein Substation, shall be owned, operated, and maintained by the IC in its entirety.

4. **Point of Interconnection.** The Distribution Provider's Protein 66 kV Substation.

5. **One-Line Diagram of Interconnection to Protein 66 kV Substation.**