A PUBLIC AGENCY
NCPA
NORTHERN CALIFORNIA POWER AGENCY

12745 N. Thornton Road
Lodi, CA 95242

phone (209) 333-6370
fax (209) 333-6374
web www.ncpa.com

Notice – Call of Special PPC Meeting

Date: November 24, 2015

To: NCPA Lodi Energy Center Project Participant Committee

From: George Morrow, Chairman

Subject: **December 2, 2015 LEC PPC Special Meeting Notice & Agenda**

PLEASE TAKE NOTICE that pursuant to Government Code section 54956, a special meeting of the Northern California Power Agency Lodi Energy Center Project Participant Committee is hereby called for **Wednesday, December 2, 2015 at 3:00 p.m.** to discuss those matters listed in the attached Agenda. The meeting will be held at the Northern California Power Agency, 12745 N. Thornton Road, Lodi, California.

If you are unable to attend the meeting in person at the Lodi location and wish to attend via teleconference, in accordance with The Brown Act, you must attend at one of the locations listed on the Agenda and post the Agenda at that location by 3:00 p.m. no later than 24 hours prior to the meeting commencement date and time, in a location that is accessible to the public until the completion of the meeting.

George Morrow, Chairman

12745 N. Thornton Road
Lodi, CA 95242

phone (209) 333-6370
fax (209) 333-6374
web www.ncpa.com

Agenda – Special Meeting

Date: November 24, 2015

Subject: Lodi Energy Center Project Participant Committee Meeting December 2, 2015

Location: 12745 N. Thornton Road, Lodi, CA or via teleconference

Time: 3**:00 P.M**.

***** In compliance with the Brown Act, you may participate in person at the meeting location or via teleconference at one of the locations listed below. In either case, please: (1) post this notice at a publicly accessible location at the participation location at least 24-hours before the call begins, and (2) have a speaker phone available for any member of the public who may wish to attend at your location.**

CITY OF AZUSA **729 N. Azusa Avenue** **Azusa, CA 91702**	**CITY OF HEALDSBURG** **401 Grove Street** **Healdsburg, CA**	**NCPA** **12745 N. Thornton Road** **Lodi, CA**
BAY AREA RAPID TRANSIT **300 Lakeside Drive, 16th Floor** **Oakland, CA**	**CITY OF LODI** **1331 S. Ham Lane** **Lodi, CA**	**PLUMAS-SIERRA RURAL ELECTRIC COOP** **73233 Highway 70** **Portola, CA**
CITY OF BIGGS **465 "C" Street** **Biggs, CA**	**CITY OF LOMPOC** **100 Civic Center Plaza** **Lompoc, CA**	**POWER & WATER RESOURCES POOLING AUTHORITY** **915 L Street, Suite 1270** **Sacramento, CA 95814**
CALIFORNIA DEPARTMENT OF WATER RESOURCES **2135 Butano Drive, Room 125** **Sacramento, CA**	**MODESTO IRRIGATION DISTRICT** **1231 Eleventh Street** **Modesto, CA**	**SILICON VALLEY POWER/CITY OF SANTA CLARA** **1500 Warburton Avenue** **Santa Clara, CA**
CITY OF GRIDLEY **685 Kentucky Street** **Gridley, CA**	**NCPA** **651 Commerce Drive** **Roseville, CA**	**CITY OF UKIAH** **300 Seminary Avenue** **Ukiah, CA**

1. **Call Meeting to Order and Roll Call**

PUBLIC FORUM

Any member of the public who desires to address the Lodi Energy Center Project Participant Committee on any item considered by the Lodi Energy Center Project Participant Committee at this meeting before or during the Lodi Energy Center Project Participant Committee's PPC consideration of that item shall so advise the Chair and shall thereupon be given an opportunity to do so. Any member of the public who desires to address the Lodi Energy Center Project Participant Committee on any item within the jurisdiction of the Lodi Energy Center Project Participant Committee and not listed on the Agenda may do so at this time.

BUSINESS ACTION ITEM

2. **California Independent System Operator (CAISO) First Amended and Restated Large Generator Interconnection Agreement** – Staff seeking approval of the First Amended and Restated Large Generator Interconnection Agreement (LGIA) among NCPA, Pacific Gas and Electric Company and California Independent System Operator Corporation, subject to legal approval, to increase the LEC capacity by 24 MW to a total capacity of 304 MW for a cost of not to exceed $300,000 and authorization for NCPA to enter into the agreement

ADJOURNMENT

The Lodi Energy Center Project Participant Committee may take action on any of the items listed on this Agenda regardless of whether the matter appears on the Consent Calendar or is described as an action item, a report, or an information item. If this Agenda is supplemented by staff reports, they are available to the public upon written request. Pursuant to California Government Code Section 54957.5, the following is the location at which the public can view Agendas and other public writings: NCPA, 651 Commerce Drive, Roseville, CA or www.ncpa.com

Persons requiring accommodations in accordance with the Americans with Disabilities Act in order to attend or participant in this meeting are requested to contact the NCPA Secretary at 916.781.3636 in advance of the meeting to arrange for such accommodations.

Lodi Energy Center Project Participant Committee

Staff Report

AGENDA ITEM NO.: 2

Date: November 24, 2015

To: Lodi Energy Center Project Participant Committee

Subject: California Independent System Operator (CAISO) First Amended and Restated Large Generator Interconnection Agreement

Proposal

Approve the First Amended and Restated Large Generator Interconnection Agreement (LGIA) among the Northern California Power Agency, Pacific Gas and Electric Company, and California Independent System Operator Corporation to increase the Lodi Energy Center (LEC) capacity by 24 MW for a cost of not to exceed $300,000 and authorization for NCPA to enter into the agreement.

Background

On July 16, 2009, the PPC passed a motion recommending authorization for the NCPA General Manager to execute the Standard Large Generator Interconnection Agreement with the CAISO for an interconnection cost of $335,000. On July 23, 2009, the Commission approved Resolution 09-65 authorizing the NCPA General Manager to execute the agreement. The LGIA was executed as of December 17, 2009. At that time, NCPA requested the CAISO to study LEC with a deliverability of 280 MW. NCPA's conceptual project included a GE turbine 1x1 plant with an output of 255 MW and an additional 25 MW of duct firing. Subsequent to the CAISO studies, NCPA went to bid for the power island equipment for the project and as a result, Siemens was selected. The Siemens equipment increased the potential output of LEC from 280 MW with duct firing to 304 MW without duct firing. The decision was made at that time to leave LEC at a 280 MW interconnection because of the substantial risk to the project schedule if the permits and studies were required to be revised for the increased output. The PPC decided it best to wait until after the plant was commissioned to make the necessary revisions to capture the additional 24 MW of capacity.

After the Commercial Operation Date (COD) for LEC, the PPC and NCPA began the process with CAISO to increase LEC's capacity by 24 MW to a total capacity of 304 MW. The study kicked off in April of 2013. The results of the Phase I study were delivered in January of 2014. The study found that LEC, along with three other projects were responsible for an overload on the STIG-8Mile Transmission line and that it would need to be upgraded. NCPA's portion of cost for that project, including modifications to NCPA's own equipment, was estimated at approximately $6,000,000. In addition to collecting the funds for this project from the LEC participants, NCPA has made the necessary Financial Security deposits with CAISO to hold its position in the study queue. The Phase II study results were posted in October 2015. The new results, factoring in all the projects that dropped out, indicated that LEC no longer needed to upgrade the transmission line. However, a relay coordination study is required along with any necessary programming and testing that is required. The total project cost, including the

necessary work on NCPA's equipment, is about $300,000. CAISO stated that in order to accomplish a COD date for this project of March 31, 2016, the First Amended and Restated Interconnect Agreement must be executed by December 11, 2015 and the Affidavit for Deliverability must be submitted by December 15, 2015.

Selection Process
LEC is interconnected to the PG&E grid. Changes to the interconnection must be done in accordance with the procedures established by the CAISO. The Federal Energy Regulatory Commission (FERC) approves and authorizes all agreements and processes used by the CAISO and PG&E.

Fiscal Impact
Total cost of the project is estimated at $294,000. This project was included in the current fiscal year budget for the Lodi Energy Center. Funds are available in the LEC CAISO Transmission Line Upgrade account to fund this project. Cost allocation will be based on project participation percentages. The excess funds collected from the LEC participants for the transmission line upgrade will be refunded.

Environmental Analysis
The requested Commission action is statutorily exempt under the Public Resources Code Section 21080 b (6) citing "actions undertaken by a public agency relating to any thermal power plant site or facility…", and Section 15271 entitled "Early Activities Related to Thermal Power Plants". Further, this activity would not result in a direct or reasonably foreseeable indirect change in the physical environment and is therefore not a "project" for purposes of Section 21065 the California Environmental Quality Act. No environmental review is necessary.

Recommendation
NCPA staff recommends that the PPC pass a motion approving the First Amended and Restated Large Generator Interconnection Agreement (LGIA) among the Northern California Power Agency, Pacific Gas and Electric Company, and California Independent System Operator Corporation, subject to legal approval, to increase the Lodi Energy Center (LEC) capacity by 24 MW for a cost of not to exceed $300,000 and authorization for NCPA to enter into the agreement.

Prepared by:

KEN SPEER
Assistant General Manager

Attachments: (1)

- First Amended and Restated Large Generator Interconnection Agreement (LGIA) Among Northern California Power Agency And Pacific Gas And Electric Company And California Independent System Operator Corporation

FIRST AMENDED AND RESTATED
LARGE GENERATOR INTERCONNECTION AGREEMENT (LGIA)
AMONG

NORTHERN CALIFORNIA POWER AGENCY
AND

PACIFIC GAS AND ELECTRIC COMPANY
AND

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

Project: Lodi Energy Center (Q267) & LECU (Q945)
CAISO Queue Positions: 267 & 945

Appendices to Amended and Restated LGIA

Appendix A	Interconnection Facilities, Network Upgrades and Distribution Upgrades
Appendix B	Milestones
Appendix C	Interconnection Details
Appendix D	Security Arrangements Details
Appendix E	Commercial Operation Date
Appendix F	Addresses for Delivery of Notices and Billings
Appendix G	Interconnection Customer's Share of Costs of Network Upgrades for Applicable Project Group
Appendix H	Interconnection Requirements for an Asynchronous Generating Facility

Appendix A

Interconnection Facilities, Network Upgrades and Distribution Upgrades

Background

The projects listed at CAISO Queue Positions 267 and 945 were processed under two different study processes, which are identified as the Large Generator Interconnection Procedure (LGIP, a serial study process) and the Generator Interconnection and Deliverability Allocation Procedures (GIDAP, a cluster study process), respectively. Both these Queue Positions combined together form one Project and the Large Generating Facility. Thus, the term "Project" wherever used in the Original LGIA and/or First Amended and Restated LGIA and capitalized refers to the generating facility based on the two (2) Queue Positions combined together. The term "Initial Project" refers to Queue Position 267 only.

Northern California Power Agency ("NCPA"), as the Interconnection Customer (Interconnection Customer or the IC) for Queue Position 267 owns and operates, pursuant to a LGIP interconnection study (serial study process) based Large Generator Interconnection Agreement ("LGIA") a 280 MW combined cycle generating facility, a large generating facility, located in the City of Lodi, CA, which is comprised of a Siemens gas powered combustion turbine rated at 204 MW and a Siemens steam turbine rated at 104 MW with an auxiliary load of 4 MW resulting in a net output capacity of 280 MW to the CAISO Controlled Grid at its Point of Interconnection. At the time of the initial study, NCPA proposed 280 MW net output to the CAISO grid. Because the equipment installed had more capacity than originally anticipated, NCPA has been selling the excess above 280 MW into the grid as energy only when conditions allow.

The large generating facility is located at 12745 N. Thornton Road, Lodi, California 95242. The large generating facility is interconnected to the CAISO Controlled Grid at the Gold Hill – LODI STIG 230 kV Line and the LODI STIG – Eight Mile Road 230 kV Line.

Lodi Energy Center (Q267) commenced Commercial Operation of the Initial Project on November 21, 2012.

Subsequently in 2013, NCPA, the Interconnection Customer, submitted another completed Interconnection Request (Revised), dated May 11, 2013 ("IR"), Queue Position 965, under Generator Interconnection and Deliverability Allocation Procedures ("GIDAP") Appendix DD, in Queue Cluster 6 to the California Independent System Operator Corporation ("CAISO") for its proposed LECU as an expansion to the existing and currently operational Q267 Lodi Energy Center which is already interconnected to the CAISO Controlled Grid. The Project was grouped with Queue Cluster 6 (QC6). The LECU project is an increase of 24.0 MW to an existing and currently operational 280 MW combined cycle generating facility which will continue to use the Lodi STIG 230 kV Substation in San Joaquin County, CA for delivering the increase in generating capacity.

The 24.0 MW increase in generating capacity is the result of additional capabilities of the machine beyond what was anticipated or studied in Q267. As a result of this change, the total combined output (net) of the Lodi Energy Center and LECU facility shall be limited to a maximum of 304 MW.

This Amended and Restated Large Generator Interconnection Agreement, dated October____, 2015 consolidates the LGIP study results of the Q267 provided in the Interconnection Facilities Study Report, dated January 20, 2009 and the Q945 GIDAP Phase II Interconnection Study report, dated November 20, 2014 in order to formalize the 24.0 MW increase to the 280 MW generating facility resulting in a net output of 304 MW to the CAISO Controlled Grid.

The Q267 Lodi Energy Center Interconnection Service capacity of 280 MW was previously approved by CAISO Interconnection Facilities Study Report issued on January 20, 2009 and memorialized in a Large Generator Interconnection Agreement dated December 17, 2009 (the "Original LGIA") entered into by and among CAISO, PG&E and the Northern California Power Agency.

The Lodi Energy Center (Q267) will continue to utilize its current existing Point of Interconnection along with the proposed LECU (Q945) project at the Gold Hill-Lodi STIG and Lodi STIG-Eight Mile Road 230 kV Transmission Lines by looping in the NCPA Lodi STIG switching station. The Interconnection Customer has requested Full Capacity Deliverability Status ("FCDS") and a Commercial Operation Date (COD) of March 31, 2016 for the 24 MW LECU project.

1) Interconnection Facilities:

a) Lodi Energy Center (Q267):

Northern California Power Agency (NCPA) submitted an Interconnection Request, dated October 26, 2007 for its then proposed 280 MW Q267 project.

Now, as of the Effective Date of this Amended and Restated LGIA,**,** the Q267 project is an existing and currently Operation Facility, so all charges and costs as determined by the LGIP interconnection study process and identified in the Interconnection Facilities Study Report, dated January 20, 2009 associated with Participating TO's Interconnection Facilities necessary to interconnect the Large Generating Facility to the Participating TO's Transmission System have been paid in full by the Interconnection Customer. Therefore, all requirements relating to posting of interconnection security for Interconnection Facilities and Network Upgrades have been satisfied previously but are reproduced here for historical record purposes.

Appendix A indicates the estimated costs of facilities for the Interconnection Facilities work for the Northern California Power Agency's Lodi Energy Center project as presented in the Interconnection Facilities Study Report issued on January 20, 2009.

The Interconnection Customer's Interconnection Facilities, which are currently existing and operational, include all facilities and equipment, other than Participating TO's Interconnection Facilities, that have been installed and are necessary to physically and electrically interconnect the Large Generating Facility to the Participating TO's Transmission System, including, but not limited to the following:

i) Interconnection Customer's Interconnection Facilities (Q267):

- Transmission line;
- Two (2) Step up transformers connecting the Lodi Energy Center project to the NCPA Lodi STIG Substation.

ii) Scope of Work, Estimated Cost and Income Tax Contribution in aid of Construction[1] (ITCC) (Q267)

Participating TO's Interconnection Facilities Cost for Q267 (completed previously)
Table A-1

Work to be performed by the Participating TO	Cost	Total
PG&E's support ,such as Pre-parallel inspection, Testing, Meters. SCADA, EMS setup	$ 250,000	
ITCC Tax @ 34 %[1]	$85,000	
Total Cost including ITCC		**$335,000**

i) Cost-of-Ownership charges applicable to Participating TO's Interconnection Facilities:

In accordance with PG&E rate tariffs, commencing with the In-Service Date, PG&E shall invoice on a monthly basis, and Northern California Power Agency shall pay an operation and maintenance (O&M) charge, identified as the Cost-of-Ownership charge in the following table to compensate PG&E, the Participating TO, for the operation, maintenance, and any applicable taxes associated with the Participating TO's Interconnection Facilities that are not part of the Network Upgrade facilities.

---

[1] *PG&E requires a letter of credit as security to cover 34% of the Participating TO's Interconnection Facilities cost, inthe amount of $85,000. Security under Article 5.17.3 of the Original LGIA must be provided in a form reasonably acceptable to PG&E no later than sixty (60) Calendar Days prior to the In Service Date (the "Required Posting Date D). Security in a form reasonably acceptable to PG&E has included either (i) a letter of credit for the entire amount of the potential tax liability on the Interconnection Facilities; or, (ii) a parental guarantee approved by PG&E for the amount of the potential tax liability on the Interconnection Facilities. The ITCC rate of 34% is calculated based on the formula contained in Article 5.17.4 of the Original LGIA and shall be refunded at such time as the indemnification obligation terminates under Article 5.17.3 of the Original LGIA. With respect to the indemnification obligation of Article 5.17.3, PG&E will notify the Interconnection Customer upon request as to the status of any extension of the IRS statute of limitations for any open year of the 10 year testing period, as defined in IRS Notice 88-129 and IRS Notice 2001-82.*

When the Interconnection Facilities are placed in service, the monthly O&M charge shall be equal to 0.38% times the installed cost of the Interconnection Facilities that are identified as the Participating TO's Interconnection Facilities

Monthly Cost-of-Ownership Charge for Q267
Table A-2

Item	Facilities Financed By:	Application Base	Current O&M Charge Percentage Rate	Monthly Charge
A	Interconnection Customer	ADVANCE Cost of transmission facilities $250,000 Less allowance for existing facilities ($ N/A) Net amount $250,000	X 0.38 % / month	$950.00 / month
B	PG&E	Removable and reusable facilities (A.11. (a) B) Transmission facilities $ N/A	N/A	N/A
C	PG&E	Existing facilities allocated as Interconnection Facilities or Network Upgrades Transmission facilities $ N/A	N/A	N/A
D	**Monthly Cost of Ownership Charge**			**$950.00 . month**

Note: Project information associated with Q267 are historic and included for informational purposes only. Because NCPA owns and maintains all Interconnection Facilities the Interconnection Customer does not pay a Monthly Cost of Ownership Charge associated with Q267.

b) LECU (Q945):

The Interconnection Facilities, as identified below, were derived from the final Interconnection Study reports, titled "*Appendix A Queue Cluster 6 Phase II Study, Final Report, dated November 20, 2014"* ("Phase II Study Report") for the interconnection to the CAISO Controlled Grid of the proposed LECU project listed at Queue Position Q945 in the CAISO Controlled Grid Generation Queue.

i) Interconnection Customer's Interconnection Facilities (Q945): None

The Q945 project is an increase of 24.0 MW in generating capability of Q267 project without making any material modifications to the generating facility, as a result of which it did not require any additional Interconnection Customer's Interconnection Facilities. So, the interconnection facilities already built for Q267 were determined to be adequate to handle the flow of additional generation.

ii) Participating TO's Interconnection Facilities (Q945):

The Participating TO's Interconnection Facilities (Q945)
Table A-3

Interconnection Facilities Work Elements	Description	Cost Allocation Factor	Estimated Cost (x1000)	Escalated Cost (x1000)* excluding ITCC	Estimated Time to Construct (Months)
Q945 (Gen-site)	**Q945 Site** • Engineering reviews • Metering • Pre-parallel inspection, & Project management • Protection Review	100%	$40	$41.508	6
	Total Estimated Costs		$40		
Total Costs Escalated to the operating year				**$41.508**	

List of Participating TO's Interconnection Facilities and Estimate Cost (Q945)
Table A-4

Interconnection Facility Element	Cost (Subject to ITCC)	Total Cost* (Excluding ITCC) (Note 1)
1. Substation Work		
(i) Engineering	$10,000	$40,000
(ii) Land and Land Rights	$0	
(iii) Project Management	$10,000	
(iv) Property Improvements	$0	
(v) Civil Foundations	$0	
(vi) Station Equipment & Materials	$0	
(vii) Telecommunications	$5,000	
(viii) Insulation and Coating and Various	$0	
(ix) Station Test Group	$10,000	
(x) Maintenance & Operations	$0	
(xi) Metering	$5,000	
(xii) EPC Contracting Costs (Percentage of Total costs)	$0	
2.Transmission Line Work		
(i) Engineering and Equipment	$0	
Total Cost (2014)		$40,000
Total Escalated Cost		**$41,508**

1. Security Amount for Estimated Tax Liability (Q945) - None

*The Interconnection Customer is not subject to Income Tax Component of Contribution ("ITCC"). ITCC is exempt for wholesale generators that meet the IRS Safe Harbor Provisions. PG&E currently does not require the Interconnection Customer to provide security to cover the potential tax liability on the Interconnection Facilities, Distribution Upgrades, and Network Upgrades per the IRS Safe Harbor Provisions (IRS Notice 88-129); however, PG&E reserves the right, on a nondiscriminatory basis, to require the Interconnection Customer to provide such security, in a form reasonably acceptable to PG&E as indicated in Article 5.17 of the Original LGIA, in an amount up to the cost consequences of

any current tax liability. Upon request and within sixty (60) Calendar Days' notice, the Interconnection Customer shall provide PG&E such ITCC security or ITCC payment in the event that Safe Harbor Provisions have not been met, in the form requested by PG&E.

2. Real Properties, Transmission Project Licensing, and Environmental Health and Safety

Participating TO shall obtain easements and/or acquire land, obtain licensing and permits, and perform all required environmental activities for the installation of the Participating TO's Interconnection Facilities, including any associated telecommunication equipment for the Project to STIG Substation. No additional easements or acquisitions are anticipated for the 24.0 MW increase.

(i) Metering

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

(ii) Power System Control

Install one (1) Remote Terminal Unit ("RTU") at the Large Generating Facility to monitor typical generation elements such as MW, MVAR, terminal voltage and circuit breaker status for the Large Generating Facility and plant auxiliary load, and transmit the information received thereby to the Participating TO's electric grid control center. Notwithstanding that the RTU will be located on the Interconnection Customer's side of the Point of Change of Ownership, the Participating TO shall own, operate and maintain the RTU as part of the Participating TO's Interconnection Facilities

3. Operation and Maintenance Costs

In accordance with Article 10.5 of the Original LGIA, commencing with the In-Service Date specified in its executed Q267 LGIA, the Interconnection Customer has not been responsible for on-going operation and maintenance expenses associated with its assigned Participating TO's Interconnection Facilities because no such facilities exist. All interconnection facilities are owned and maintained by the Interconnection Customer.

(i) Interconnection Facilities Charge

The Interconnection Customer has elected the following option which is indicated by placing a check mark against it.

(a) [X] **Monthly Cost-of-Ownership Charge**

Interconnection Facilities Charge = (Interconnection Customer-Financed Monthly Rate) x (Participating TO's Interconnection Facilities Cost)

Table A-5

		Estimated		Actual	
Effective As of In-Service Date	**IC Financed Monthly Rate**	**Participating TO's Interconnection Facilities Cost**	**Interconnection Facilities Charge**	**Participating TO's Interconnection Facilities Cost**	**Interconnection Facilities Charge**
Q267*	0.38%	$250,000	$950.00	$436,117	$0
Q945	0.38%[2]	$41,508	$157.73	[to be inserted after true-up pursuant to Article 12]	[to be inserted after true-up pursuant to Article 12]

Q267 does not pay Interconnection Facilities Charge because it owns and maintains all Interconnection Facilities. Q945 will have the same arrangement.

OR

(b) **N/A** **Equivalent One-Time Charge**
(In lieu of recurring Monthly Cost-of-Ownership Charge)
= (Present Worth Factor) x (Months per Year) x (Monthly Interconnection Facilities Charge)

Table A-6

			Estimated		Actual	
Effective As of In-Service Date	**Present Worth Factor[2]**	**Months per Year**	**Monthly Interconnection Facilities Charge**	**Equivalent One-Time Charge**	**Participating TO's Interconnection Facilities Cost**	**Equivalent One-Time Charge**
Q267*	13.07[2]	12	$950.00	$148,998	$0	$0
Q945	13.07[3]	12	$152.00	$23,857.92	[to be inserted after true-up pursuant to Article 12]	[to be inserted after true-up pursuant to Article 12]

4. Network Upgrades (267): None

5. Network Upgrades (Q945)

A brief description, estimated costs and time to construct the Reliability, Network Upgrades, Local Delivery Network Upgrades and Area Delivery Network Upgrades required for the interconnection of this project are provided in Appendix G of the Amended and Restated LGIA.

(i) Reliability Network Upgrades: None

---

[2] The current applicable monthly Cost-of-Ownership rate factor for Interconnection Customer financed facilities. Where facilities displace PG&E's existing facilities, this allowance assures the exclusion of PG&E's existing ownership costs from Interconnection Customer's monthly Cost-of -Ownership Charge or Equivalent One-Time Charge. This Cost-of-Ownership Charge rate factor is subject to change upon approval of PG&E's future filings with FERC.

[3] The current Present Worth Factor or the perpetuity factor used in computing one-time cost of ownership charges is used to determine the Equivalent One-Time Payment. This financial factor is the reciprocal of PG&E's after-tax Rate of its Return on Rate Base ("ROR"). The after-tax ROR is calculated by the Financial Planning & Analysis Department of PG&E and is established based on the ROR.

(ii) Delivery Network Upgrades

(a) Local Deliverability Network Upgrades ("LDNU"): None

(b) Area Deliverability Network Upgrades ("ADNU"): None

(iii) Stand Alone Network Upgrades: None

6. Distribution Upgrades: None

7. Point of Change of Ownership

The Point of Change of Ownership ("POCO"), as such term is defined in the CAISO tariff, are the points at which the Gold Hill–Lodi STIG and Lodi STIG–Eight Mile Road 230 kV Lines connect to the NCPA Lodi STIG substation.

8. Point of Interconnection

The Point of Interconnection ("POI") of the Project, as such term is defined in the CAISO tariff are the points at which the Gold Hill–Lodi STIG and Lodi STIG–Eight Mile Road 230 kV Lines connect to the NCPA Lodi STIG substation.

9. Transmission Credits None

Since the Project does not require any Reliability Network Upgrades, this section is not applicable.

Pursuant to Article 11.4 of the LGIA, the Interconnection Customer may make a one-time election by written notice thirty (30) Calendar Days prior to Commercial Operation Date to receive merchant transmission Congestion Revenue Rights ("CRRs") as defined in and as available at the time of election in lieu of a repayment of its share of the costs of Reliability Network Upgrades and Local Delivery Network Upgrades in accordance with Article 11.4, which equals the payment (subject to true-up) made by it for the applicable class of Network Upgrades listed in the preceding sentence, as shown in Appendix G. The Interconnection Customer has elected to receive repayment of the amount funded (subject to true up) for the type of Network Upgrades applicable to the Project, which is indicated by placing a check mark against it.

Since no Network Upgrades are required, the Interconnection Customer is not required to post any Interconnection Financial Security for Network Upgrades; therefore pursuant to Article 11.4 no repayment will be made.

(a) ☐ **Repayment of the cost for the Reliability Network Upgrade & Local Delivery Network Upgrades:** None

(b) ☐ **Merchant Transmission Congestion Revenue Rights (CRRs)** – None

10. Security Amount for the Participating TO's Interconnection Facilities and Network Upgrades

(i) Lodi Energy Center (Q267) – None (satisfied previously)

(ii) LECU (Q945)

- **The Participating TO's Interconnection Facilities:**
  Pursuant to Section 11.3 of the GIDAP and Article 11.5 of the LGIA, the Interconnection Customer has provided a total Interconnection Financial Security in the amount of $41,508 for the postings to cover the costs for constructing, procuring and installing the Participating TO's Interconnection Facilities as described in the Phase II Interconnection Study Report, dated November 14, 2014 and the subsequent 2015 Generator Interconnection Reassessment Report Addendum #1 to the Cluster 6 Phase II report dated July 31, 2015.

- **Network Upgrades:**
  Pursuant to Section 11.3 of the GIDAP, and Article 11.5 of the LGIA, the Interconnection Customer has provided a total Interconnection Financial Security in the amount of $1,351,000 which should be reduced to $0 as described in the 2015 Generator Interconnection Reassessment Report Addendum #1 to the Cluster 6 Phase II report dated July 31, 2015.

Table A-5
Amounts of Interconnection Financial Security

Item	***The amount of Second Posting of Interconnection Financial Security***	***The amount of Third Posting of Interconnection Financial Security***	***The Maximum amount of Total Interconnection Financial Security***
(i) Participating TO's Interconnection Facilities	$41,508	$41,508	$41,508
(ii) Reliability Network Upgrades	$1,351,000	$0	$0
(iii) Local Delivery Network Upgrades	**N/A**	**N/A**	**N/A**
(iv) Area Delivery Network Upgrades	**N/A**	**N/A**	**N/A**
Total	**$1,393,000**	**$41,508,**	$41,508

11. Affected Systems: Refer to Appendix D

12. Insurance

The Interconnection Customer, as the designated Party, at its own expense, is required to maintain the minimum insurance coverage(s) as provided in the LGIA with insurers that have received the rating required in the LGIA and are authorized to do business in California in accordance with requirements of Article 18.3 of the LGIA. The Interconnection Customer shall initially provide the Participating TO and the CAISO proof of insurance coverage(s) within ten (10) Calendar Days of the execution of this Amended and Restated LGIA. Any subsequent changes/renewals shall be provided within ninety (90) Calendar Days of such changes/renewals. All certificates of insurance coverage, including endorsements, cancellations, terminations, alterations, and material changes of such insurance shall be issued and submitted to the following:

(i) Participating Transmission Owner

Pacific Gas and Electric Company
Attention: Electric Generation Interconnection – Contract Management
Address: 245 Market Street, Code N7L, P.O. Box 770000
City: San Francisco
State & ZIP: CA 94177-0001

(ii) CAISO

Attention: Queue Management
Infrastructure Contracts and Management
Address: 250 Outcropping Way
City: Folsom
State & ZIP: CA 95630

Appendix B

Milestones

Interconnection Customer's Selected Option
The Interconnection Customer has selected the Standard Option in accordance with Article 5.1.1 of the Original LGIA

Interconnection Milestones and Due Dates:

(1) LECU

Table B-1
(Applicable to LECU (Q945))

Item	Milestone	Responsible Party	Due Date
(a)	Submittal of approval from the appropriate governmental authority for any facilities requiring regulatory approval, as applicable, to Participating TO and CAISO, pursuant to Article 5.6.1 of the LGIA	Interconnection Customer	Satisfied at the time of Q267's Interconnection. No additional facilities are required for Q945.
(b)	Submittal of written authorization to proceed with design, procurement and construction of Participating TO's Interconnection Facilities and Network Upgrades to Participating TO and CAISO pursuant to Articles 5.5.2 and 5.6.3 of the LGIA	Interconnection Customer	Satisfied at the time of Q267's Interconnection. No additional facilities are required for Q945.
(c)	Submittal of the second posting of Interconnection Financial Security for (i) Participating TO's Interconnection Facilities, (ii) Reliability Network Upgrades and (iii) Local Delivery Network Upgrades to Participating TO pursuant to Articles 5.5.3, and 11.5 of the LGIA and as outlined in Appendix A	Interconnection Customer	Already satisfied
(d)	Submittal of the third posting of Interconnection Financial Security for (i) Participating TO's Interconnection Facilities, (ii) Reliability Network Upgrades and (iii) Local Delivery Network Upgrades to Participating TO pursuant to Articles 5.5.3, 5.6.4 and 11.5 of the LGIA and as outlined in Appendix A	Interconnection Customer	On or before the start of construction of the Participating TO's Interconnection Facilities Reliability Network Upgrades and Local Delivery Network Upgrades or by 1/1/16 whichever is earlier
(e)	Completion of (i) Participating TO's Interconnection Facilities, (ii) Reliability Network Upgrades and (iii) Local Delivery Network Upgrades	Interconnection Customer and Participating TO	Satisfied at the time of Q267's Interconnection. No additional facilities are required for Q945.

Item	Milestone	Responsible Party	Due Date
(f)	Submittal of initial specifications for the Interconnection Customer's Interconnection Facilities and Large Generating Facility, Including System Protection Facilities, to the Participating TO and the CAISO as specified in Article 5.10.1 of the LGIA	Interconnection Customer	Satisfied at the time of Q267's Interconnection. No additional facilities are required for Q945.
(g)	Initial information submission, including Participating TO's Transmission System information necessary to allow the Interconnection Customer to select equipment, in accordance with Article 24.2 of the LGIA	Participating TO	Satisfied at the time of Q267's Interconnection. No additional facilities are required for Q945.
(h)	Updated information submission by Interconnection Customer, including manufacturer information in accordance with Article 24.3 of the LGIA	Interconnection Customer	Satisfied at the time of Q267's Interconnection.
(i)	Review of and comment on Interconnection Customer's initial specifications as specified in Article 5.10.1 of the LGIA	Participating TO and CAISO	Satisfied at the time of Q267's Interconnection.
(j)	Submittal of final specifications for the Interconnection Customer's Interconnection Facilities and Large Generating Facility, including System Protection Facilities, to the Participating TO and the CAISO as specified in Article 5.10.1 of the LGIA	Interconnection Customer	At least ninety (90) Calendar Days prior to the Initial Synchronization Date
(k)	Review of and comment on Interconnection Customer's final specifications as specified in Article 5.10.1 of the LGIA	Participating TO and CAISO	Within thirty (30) Calendar Days of the Interconnection Customer's submission of final specifications
(l	Notification of Balancing Authority Area in which the Interconnection Customer intends to be located to Participating TO and CAISO pursuant to Article 9.2	Interconnection Customer	Satisfied at the time of Q267's Interconnection.
(m)	Performance of a complete calibration test and functional trip test of the System Protection Facilities pursuant to Article 9.7.4.6 of the LGIA	Participating TO	Within sixty (60) Calendar Days prior to the In-Service Date
(n)	In-Service Date	Participating TO	3/1/16
(o)	Performance of a complete calibration test and functional trip test of the System Protection Facilities prior to the Commercial Operation Date, pursuant to	Interconnection Customer and Participating TO	Within sixty (60) Calendar Days prior to the Commercial Operation Date

Item	Milestone	Responsible Party	Due Date
	Article 9.7.4.6 of the LGIA		
(p)	Testing of the Participating TO's Interconnection Facilities and Network Upgrades, and testing of the Interconnection Customer's Large Generating Facility, Network Upgrades, and Interconnection Facilities in accordance with Article 6.1 of the LGIA	Interconnection Customer and Participating TO	Within sixty (60) Calendar Days prior to the Commercial Operation Date
(q)	Provide written approval to Interconnection Customer for the operation of the Large Generating Facilities in accordance with Article 6.1 of the LGIA	Participating TO	Within fifteen (15) Calendar Days prior to the Commercial Operation Date
(r)	Initial Synchronization Date (Interconnection Customer to provide notification in writing to Participating TO)	Interconnection Customer	3/15/16
(s)	Trial Operation period commences	Interconnection Customer	3/15/16
(t)	Commercial Operation Date	Interconnection Customer	3/31/16
(u)	Submittal of "as-built" drawings, information and documents for the Interconnection Customer's Interconnection Facilities and the Electric Generating Units in accordance with Article 5.10.3 of the LGIA to the Participating TO and CAISO	Interconnection Customer	Within one hundred twenty (120) Calendar Days after the Commercial Operation Date.

Notes:

(i)These milestones are contingent upon timely negotiation and execution of this Amended and Restated LGIA, prior to 01/01/2016. Any delays to the Amended and Restated LGIA execution may impact the ability to achieve the milestones above.

(ii) The Interconnection Customer understands and acknowledges that such timeline is only an estimate and that equipment and material lead times, labor availability, outage coordination, regulatory approvals, right-of-way negotiations, or other unforeseen events could delay the actual in-service dates of the Participating TO's Interconnection Facilities, Distribution Upgrades, or Network Upgrades beyond those specified. The Participating TO shall not be liable for any cost or damage incurred by the Interconnection Customer because of any delay in the work provided for in this Amended and Restated LGIA.

(2) (2) Lodi Energy Center

a. Interconnection Customer's Construction Option Selection: Standard Option

Interconnection Milestones and Dates:
Table B-2
(Applicable to Lodi Energy Center (Q267))
(Milestones reproduced from Original LGIA & listed below satisfied - currently operational Facility)

Milestones	Date
Date Interconnection Customer to provide Final Project Development Schedule	January 22,2010
Date Interconnection Customer to provide proof of filing and acceptance of Critical Path Permit and the expected date of receipt of such permit	Satisfied
Completion of environmental permits	January 20, 2010
In-Service Date for back feed power (Article 5.1)	October 1, 2011
Initial Synchronization Date (Article 5.1)	January 9, 2012
Trial Operation	March 30, 2012
Commercial Operation Date (Article 5.1)	April 16, 2012
Date Interconnection Customer to provide written authorization to proceed with design (Article 5.5.2) and security (Article 5.5.3). Invoicing and payment shall be handled pursuant to Article 12.	June 1, 2009
Date Interconnection Customer to provide written authorization to proceed with procurement (Article 5.5.2) and security (Article 5.5.3). Invoicing and payment shall be handled pursuant to Article 12.	September 1, 2011

3. Suspension

(i) Q267 –Not Applicable; (currently operational facility),

(ii)Q945

If the Interconnection Customer suspends work pursuant to Article 5.16 of the LGIA, then all milestones for each Party pertaining to the Participating TO's obligations for construction and installation related to Network Upgrades and Participating TO's Interconnection Facilities set forth in this Appendix B shall be suspended during the suspension period except for the milestones related to Network Upgrades common to multiple generating facilities and the related Interconnection Financial Security and associated payment obligations. Any extension of the In-Service Date, Initial Synchronization Date, Trial Operation or Commercial Operation Date for the Generating Facility shall be subject to evaluation under Section 6.7.2 of the GIDAP pertaining to modifications. Upon the Interconnection Customer's request to recommence the work, the Parties shall negotiate in good faith new milestone dates for such milestone, taking into account the period of suspension and necessary re-studies, if required. Appendix B and any terms and conditions associated with the estimated costs and payment schedule, if necessary, shall be amended following the establishment of such revised milestone dates

.

The Interconnection Customer also understands and agrees that the method of service required to interconnect the Large Generating Facility may require re-assessment due to the suspension of the Project and changes to the Participating TO's electrical system or addition of new generation

4. Estimated Construction Schedule

There are no upgrades associated with the expansion at LECU.

Appendix C
Interconnection Details

The Lodi Energy Center (Q267) project, which is an existing and currently operational generating facility, consists of a 1x1 combined cycle generating facility with a net electrical output of 280 MW to the CAISO Controlled Grid. The combustion turbine generator and the steam turbine generator forming the Electric Generating Units at the Generating Facility will have its own dedicated transformer for a total of 2 transformers. The first step-up transformer is designed with a rating of 230/18 kV, 172 MVA with 8.67% impedance at 129 MVA, and the second transformer with a rating of 230/13.8 kV, 120 MVA with 12% impedance at 120 MVA, respectively.

The Lodi Energy Center project is interconnected to PG&E's Gold Hill-Lodi STIG and Lodi STIG-Eight Mile Road 230 kV Transmission Lines via the existing NCPA Lodi Switching Station.

The Project facilities, based on combined Queue Positions 267 and 945, include, but are not limited to, all equipment and facilities comprising the combined cycle generating facility, which consists of (i) 204.9 MW combustion turbine generator and 106.9 MW steam turbine generator with a maximum output of 304 MW to the CAISO Controlled Grid (24 MW capacity increase to existing 280 MW combined system plant) (ii) two main step-up transformers 230/18 kV and 230/13.8 kV, with ratings of 172 MVA and 120 MVA, respectively, (meters and metering equipment and protective relaying equipment; and (iii) appurtenant equipment..

The Interconnection Customer may make changes to the equipment listed in its Interconnection Request for Q945 and/or approved in the study report in accordance with the CAISO Tariff subject to review and approval by the CAISO and the Participating TO.

The 24 MW project identified as LECU project is an expansion of the existing 280 MW Lodi Energy Center project associated with Q267. Northern California Power Agency, the Interconnection Customer elected Option (A) to proceed with the expansion of its existing and currently operational 280 MW combined cycle Lodi Energy Center project, by a maximum of 24 MW (based on an auxiliary load of 0 MW and a gross output of 24 MW) resulting in a maximum output of 304 MW to the CAISO Controlled Grid. The 24 MW increase project listed at Queue Position 945 in the CAISO Controlled Grid Generation Queue, interconnected to the NCPA STIG Substation, is a part of the natural gas powered combined cycle generation project without making any changes to the generating facility.

The Project consisting of Queue Positions Q267 and Q945 combined together will continue to maintain its current Point of Interconnection as PG&E's Gold Hill – Lodi STIG and Lodi STIG – Eight Mile Road 230 kV lines in San Joaquin County, California as shown in the single line diagram. These lines connect to the NCPA STIG substation to which the Project is interconnected. The total net output to the CAISO Controlled Grid at the Point of Interconnection will be limited to a maximum of 304 MW;

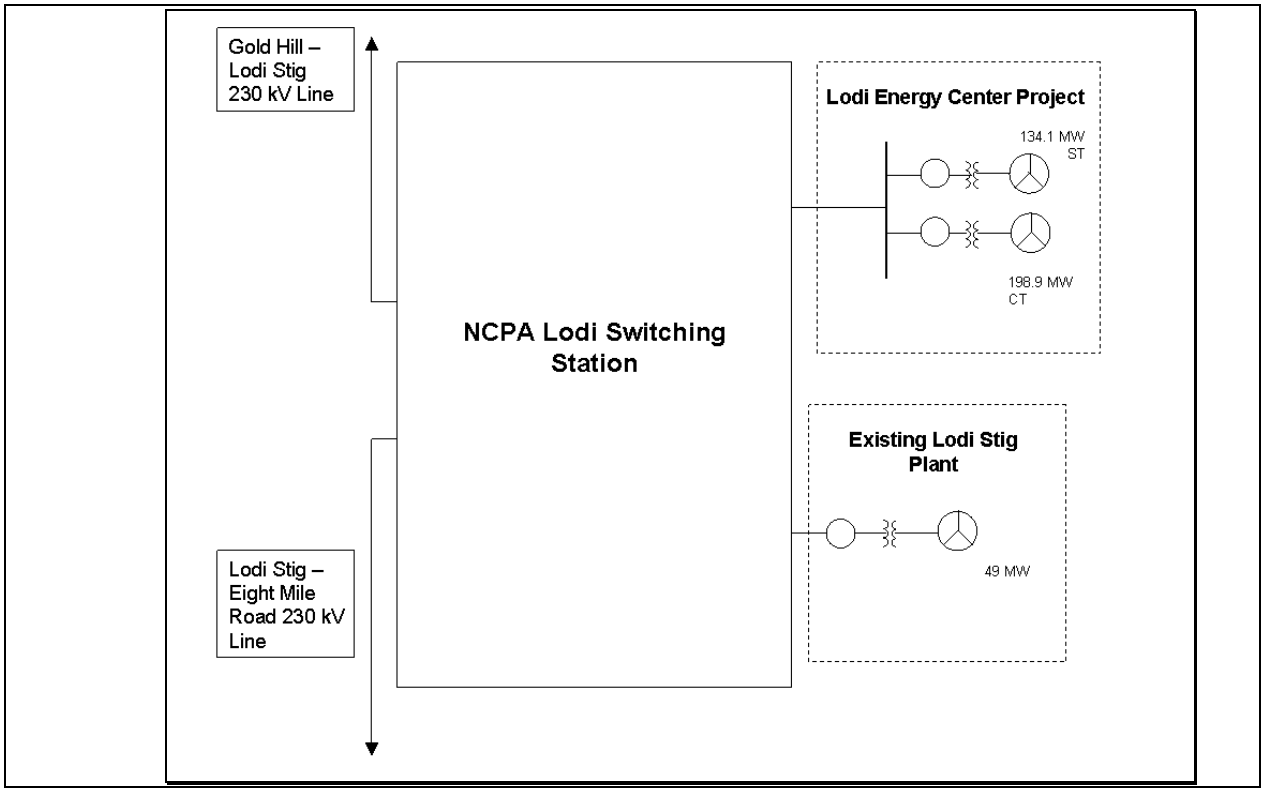
Lodi Energy Center (Q267), a 280 MW generation facility, is already an operational generating facility, achieved its COD on November 21, 2012. The IC requested Commercial Operation Date ("COD") of LECU project (Q945) is March 31, 2016. Figures C-1 shows the Q267 project's interconnection diagram while Figure C-2 shows the combined Q267 and Q945 Queue Positions project and the vicinity map. The Figures C-1 and C-2 are derived from their respective interconnection study reports.

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

A conceptual single-line diagram of Lodi Energy Center.

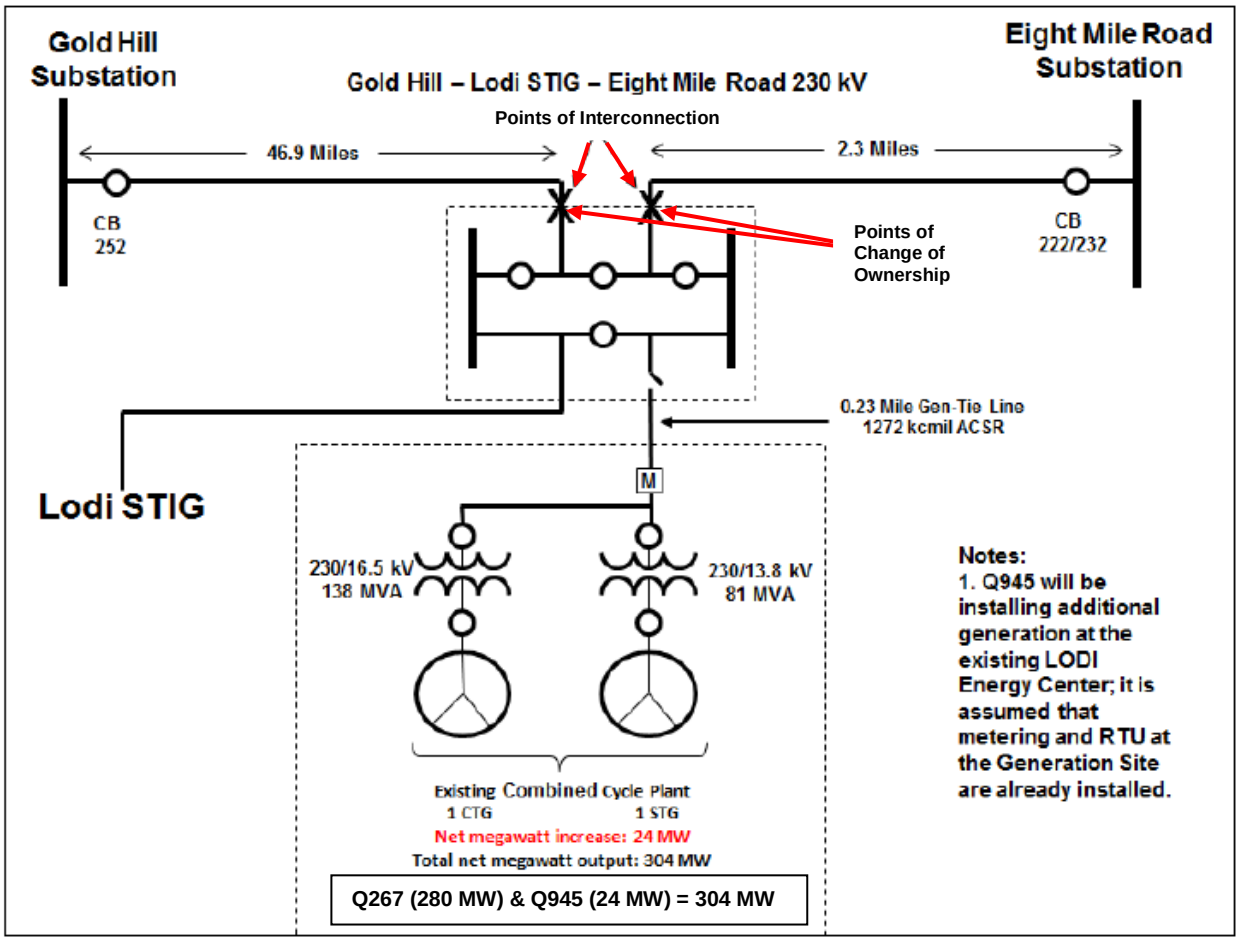
(Q267)

Figure C-1



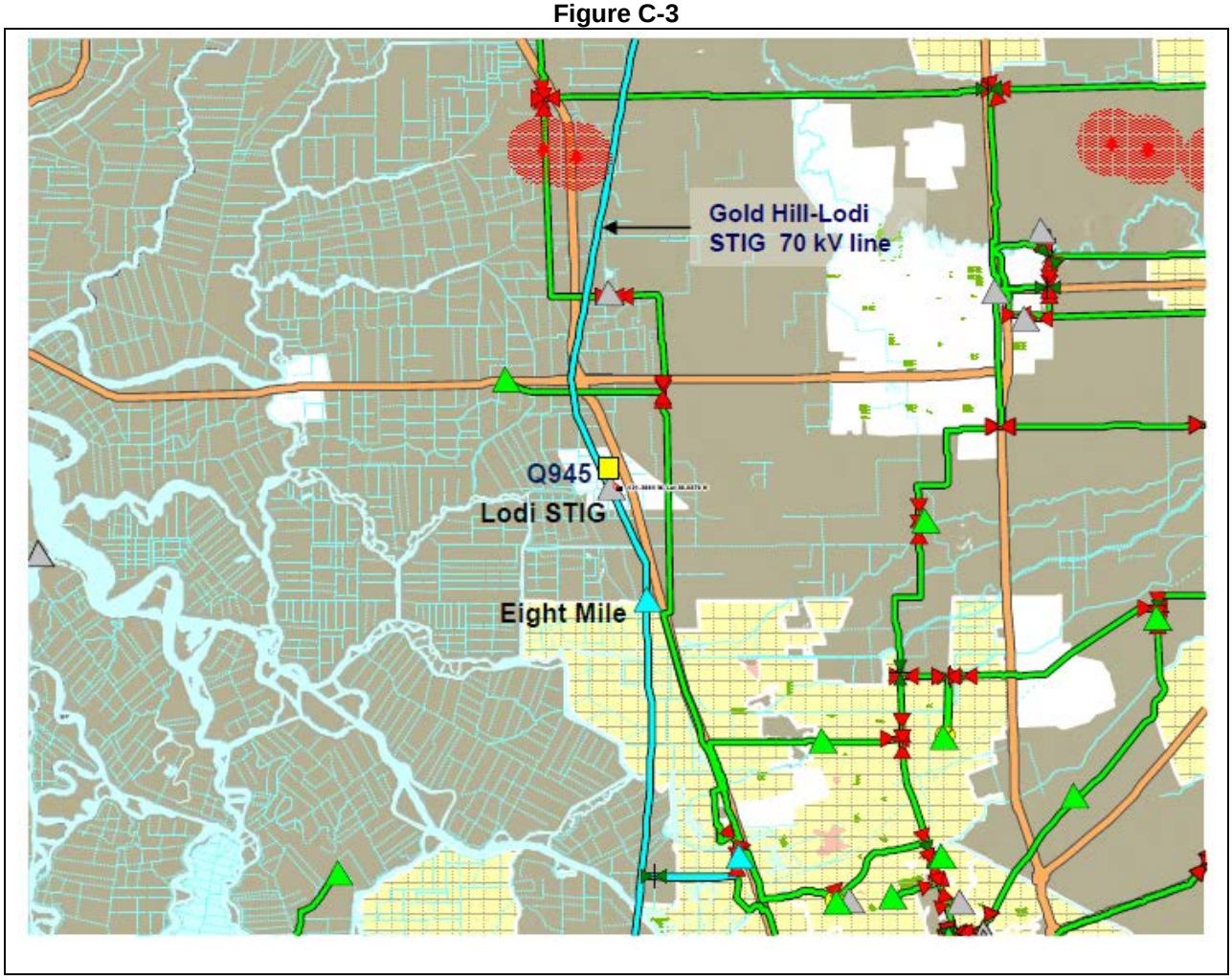
Conceptual Single Line Diagram of Lodi Energy Center (Q267) and LECU (Q945)

Figure C-2



Vicinity Map
(Q267 & Q945)

Figure C-3



This "First Amended & Restated Large Generator Interconnection Agreement" dated November_____2015 (the "First Amended & Restated LGIA") supersedes the original 2009 LGIA in respect of the changes identified in this First Amended and Restated LGIA, in response to the results of the GIDAP based Interconnection Study Report, dated, November 20,.2014, which was required due to various changes to the Project, as described in Appendix A to this LGIA.

Definition of First Amended & Restated LGIA:
This *revised LGIA* executed by the Parties on November _____, 2015 as an amended & restated LARGE GENERATOR INTERCONNECTION AGREEMENT based on the CAISO Tariff Appendix EE as a replacement version of the original large generator interconnection agreement executed on December 17, 2009

The First Amended & Restated LGIA does not alter, modify or change in any manner or form the Parties' rights and obligations under the original standard large generator interconnection agreement executed on December 17, 2009 (the "Original LGIA"), in respect of the period prior to the Effective Date of this First

Amended & Restated LGIA. This First Amended & Restated LGIA governs the Parties' rights and obligations in respect of the period on and after the Effective Date.

Appendix D

Security Arrangements Details

Infrastructure security of CAISO Controlled Grid equipment and operations and control hardware and software is essential to ensure day-to-day CAISO Controlled Grid reliability and operational security. FERC will expect the CAISO, all Participating TOs, market participants, and Interconnection Customers interconnected to the CAISO Controlled Grid to comply with the recommendations offered by the President's Critical Infrastructure Protection Board and, eventually, best practice recommendations from the electric reliability authority. All public utilities will be expected to meet basic standards for system infrastructure and operational security, including physical, operational, and cyber-security practices.

The Interconnection Customer shall meet the requirements for security implemented pursuant to the CAISO Tariff, including the CAISO's standards for information security posted on the CAISO's internet web site at the following internet address: http://www.caiso.com/pubinfo/info-security/index.html.

The Parties agree to exchange the following information in the format provided below or in a mutually acceptable format ten (10) Calendar Days prior to Project's Initial Synchronization Date.

Operating communications and notifications shall take place among the following designated representatives of the Parties:

CAISO	PARTICIPATING TO (PACIFIC GAS AND ELECTRIC COMPANY)	INTERCONNECTION CUSTOMER (NORTHERN CALIFORNIA POWER AGENCY)
CAISO Real Time Desk/24 Hour Desk: **Alternate phone:**	**Transmission Operations Center** **24-hour telephone:**	**Operator Name and/or Title:** **24-hour Telephone:** **Alternate phone:** **Email:**

1. Lodi Energy Center and LECU Project

All equipment and facilities comprising the Large Generating Facility located in San Joaquin County, California, as disclosed by the Interconnection Customer in its Interconnection Requests, as may have been amended during the Interconnection Study process, comprising of, among other things: (i) 204.9 MW combustion turbine generator and 106.6 MW steam turbine generator with a auxiliary load of 7.5 MW resulting in a maximum output of 304 MW to the CAISO Controlled Grid (the 24 MW LECU project (Q945) is comprised of an increase of 15.8 MW in Combustion turbine capability and an increase of 8.2 MW in the steam turbine generator capability to the existing Q267 280 MW combined cycle plant) (ii) two main step-up transformers 16.5 / 230 kV and 13.8 / 230 kV, with ratings of 138 MVA and 81 MVA, (meters and metering equipment and protective relaying equipment; and (iii) meters and metering equipment, and (iv) appurtenant equipment.

The Q267 and Q945 combined project shall consist of the Large Generating Facility and the Interconnection Customer's Interconnection Facilities. The IC may make any changes in equipment in accordance with the CAISO Tariff subject to review and approval by the CAISO and the Participating TO.

(i) The Interconnection Customer shall operate the Large Generating Facility and the Interconnection Customer's Interconnection Facilities in accordance with the CAISO Tariff; NERC and the Applicable Reliability Council requirements; and Applicable Reliability Standards.

(ii) The Large Generating Facility shall be operated so as to prevent or protect against the following adverse conditions on the Participating TO's electric system: inadvertent and unwanted re-energizing of a utility dead line or bus; interconnection while out of synchronization; overcurrent; voltage imbalance; ground faults; generated alternating current frequency outside permitted safe limits; power factor or reactive power outside permitted limits; and abnormal waveforms.

2. Operational Deliverability Assessment

Upon completion of Phase I Interconnection Study, the Interconnection Customer elected the Option (A), ratepayers based TP Deliverability allocation, for proceeding further with the subsequent Phase II Interconnection Study process. It was determined that the LECU will have Full Capacity Deliverability Status in 2017 under the Cluster 6 Transmission Planning Deliverability Allocation process.

3. Interconnection Principles

(a) This Amended and Restated LGIA provides for Interconnection Service of a total interconnection service capacity of up to 304 MW resulting from the interconnection of the Project, as described in Appendix C. The Interconnection Customer acknowledges that if the Interconnection Customer wishes to increase the amount of interconnection service capacity provided pursuant to this Amended and Restated LGIA, the Interconnection Customer shall be required to submit a new Interconnection Request in accordance with the terms and conditions of the CAISO Tariff.

(b) In the event the Participating TO's Interconnection Facilities are utilized to provide retail service to the Interconnection Customer in addition to the wholesale Interconnection Service provided herein, and the Interconnection Customer fails to make payment for such retail service in accordance with the Participating TO's applicable retail tariffs, then the Participating TO's Interconnection Facilities may be removed from service to the Interconnection Customer, subject to the notice and cure provisions of such retail tariffs, until payment is made by the Interconnection Customer pursuant to such retail tariffs

(c) The costs associated with any mitigation measures required to third party transmission systems, which result from interconnection of the Q945 project to the Participating TO's electrical system, are not reflected in this Amended and Restated LGIA. The Participating TO shall have no responsibility to pay costs associated with any such mitigation measures. If applicable, the Interconnection Customer shall enter into an agreement with such third parties in accordance with Section 14.4 of the GIDAP to address any required mitigation.

(d) Pursuant to Appendix H of the LGIA, the Participating TO's approval process will include verification that the low-voltage ride-through, SCADA capability, and power factor correction equipment, if any, required pursuant to this LGIA, have been installed and are operational. – Not Applicable

4. Cluster Study Group (Q945)

In accordance with Federal Energy Regulatory Commission ("FERC") approved Generator Interconnection and Deliverability Allocation Procedures ("GIDAP"), CAISO Tariff Appendix DD, for Interconnection Requests in a Queue Cluster, this Q945 project was grouped with Cluster 6 projects to determine the impacts of the group as well as this consolidated project on the CAISO Controlled Grid. Deliverability Assessment was performed for the LECU project during the Cluster 6 Deliverability Allocation process which determined that at the earliest Q945 LECU project could achieve Full Capacity Deliverability Status in 2017. The cost responsibility for the Network Upgrades (RNU and LDNU) based on 2015 Reassessment report to interconnect the project was determined to be $0,

5. Interconnection Operations

(a) The Interconnection Customer shall cause the Project to participate in any SPS required to prevent thermal overloads and unstable conditions resulting from outages. Such participation shall be in accordance with applicable FERC regulations, and CAISO Tariff provisions and protocols. The Interconnection Customer will not be entitled to any compensation from the Participating TO, pursuant to the Amended and Restated LGIA, for loss of generation output when (i) the Large Generating Facility's generation is reduced or the Project is tripped off-line due to implementation of the SPS; or (ii) such generation output is restricted in the event the SPS becomes inoperable. In accordance with Good Utility Practice, the Participating TO will provide the Interconnection Customer advance notice of any required SPS beyond that which has already been identified in the Phase II Interconnection Study and this Amended and Restated LGIA.

(b) The Interconnection Customer shall cause the Large Generating Facility to participate in CAISO Congestion Management.

(c) Following outages of the Interconnection Facilities or the Large Generating Facility, the Interconnection Customer shall not energize the Project for any reason without specific permission from the Participating TO's and the CAISO's operations personnel. Such permission shall not be unreasonably withheld.

(d) The Interconnection Customer shall maintain operating communications with the Participating TO's designated switching center. The operating communications shall include, but not be limited to, system parallel operation or separation, scheduled and unscheduled outages, equipment clearances, protective relay operations, and levels of operating voltage and reactive power.

(e) The Interconnection Customer has elected for Q945 LECU part of the Large Generating Facility to have Full Capacity Deliverability Status, as such term is defined in the CAISO Tariff. The Interconnection Customer acknowledges and understands that the Large Generating Facility will have Full Capacity Deliverability Status in 2017, as such term is defined in the CAISO Tariff when the Project achieves Commercial Operation and all the required Delivery Network Upgrades specified in this Amended and Restated LGIA as identified in its Phase II final study report or facilities study report or Reassessment reports and any upgrades identified for any pre-cursor projects are completed and placed into service. Q267 was processed under LGIP in the sequential interconnection study process.

6. Compliance with Applicable Reliability Standards

The Interconnection Customer shall comply with all Applicable Reliability Standards for the Interconnection Customer's Interconnection Facilities and the Large Generating Facility. The Participating TO will not assume any responsibility for complying with mandatory reliability standards for such facilities and offers no opinion as to whether the Interconnection Customer must register with NERC. If required to register with NERC, the Interconnection Customer shall be responsible for complying with all Applicable Reliability Standards for the Interconnection Customer's Interconnection Facilities and the Large Generating Facility up to the Point of Change of Ownership.

7. Affected Systems Coordination

The CAISO cannot study comprehensively the impacts of the Generating Facility on the transmission systems of Affected System operators. The CAISO does not have detailed information about Affected Systems on a transmission-element level, nor does the CAISO know the details of the various reliability and operating criteria applicable to the Affected Systems. In addition, because the operation of transmission systems and NERC reliability standards change over time, the CAISO cannot presume to know all of the impacts of these changes on Affected

Systems. As such, the CAISO contacted all Potentially Affected Systems[4] to inquire whether they are impacted by the Generating Facility's interconnection to the CAISO Controlled Grid. The CAISO provided notice to the Interconnection Customer of the Identified Affected Systems[5] for this Generating Facility. To ensure a safe and reliable interconnection to the CAISO Controlled Grid, six (6) months before the Initial Synchronization Date of the Generating Facility, the Interconnection Customer shall provide documentation to the CAISO, in accordance with Article 11.4.2 of the Amended and Restated LGIA, confirming that the Identified Affected System operators have been contacted by the Interconnection Customer, and (I) that any system reliability impacts have been addressed (or that there are no system impacts), or (ii) that the Interconnection Customer has taken all reasonable steps to address potential reliability system impacts with the Identified Affected System operator but has been unsuccessful.

[4] "*Potentially Affected System" shall mean an electric system in electric proximity to the CAISO's Controlled Grid that may be an Affected System.*

[5] "*Identified Affected System" shall mean an Affected System operator who either stated that it should be considered an Affected System or whose electric system has been identified by the CAISO as potentially impacted by a generator interconnection through the applicable study process.*

Appendix E
Commercial Operation Date

[This Appendix E sets forth a form of letter to be provided by the Interconnection Customer to the CAISO and Participating TO to provide formal notice of the Commercial Operation of an Electric Generating Unit.]

[Date]

Mr. Mike Turner
Manager, Model & Contract Implementation
California Independent System Operator Corporation
250 Outcropping Way
Folsom, CA 95630

Mr. Bruce Henry
Director, Electric Transmission Operations
Pacific Gas and Electric Company
Mail Code B15A
P.O. Box 770000
San Francisco, CA 94177

Dear Mr. Turner and Mr. Henry:

Re: North California Power Agency: LECU (Q945)

On **[Date], North California Power Agency** completed Trial Operation of the LECU project's Unit No. ____. This letter confirms that **North California Power Agency** commenced Commercial Operation of the LECU project's Unit No. ___ at the Electric Generating Unit, effective as of **[Date plus one day]** and that **North California Power Agency** provided the CAISO's operations personnel advance notice of its intended Commercial Operations Date no less than five Business Days prior to that date.

Thank you.

[Signature]

[INSERT IC REPRESENTATIVE NAME]
[TITLE]

North California Power Agency

CC: Queue Management

Appendix F
Addresses for Delivery of Notices and Billings

Notices:

CAISO:
Regulatory Contracts
250 Outcropping Way
Folsom, CA 95630

Participating TO:
Pacific Gas and Electric Company
Electric Generation Interconnection – Contract Management
245 Market Street, MC N7L
San Francisco, CA 94105
Email: EGIContractMgmt@pge.com

Interconnection Customer:

Michael DeBortoli
P. O. Box 1478
Lodi, CA 95241-1478
Email: michael.debortoli@ncpa.com

Billings and Payments:

CAISO:
CAISO
Finance Dept.
Dennis Estrada
250 Outcropping Way
Folsom, CA 95630

Participating TO:
Pacific Gas and Electric Company
Electric Generation Interconnection – Contract Management
245 Market Street, MC N7L
San Francisco, CA 94105
Email: EGIContractMgmt@pge.com

Interconnection Customer:

Northern California Power Agency
Accounts Payable
651 Commerce Drive
Roseville, CA 95678

Alternative Forms of Delivery of Notices (telephone, facsimile or e-mail):

CAISO:
QueueManagement@caiso.com
Regulatorycontracts@caiso.com

Participating TO:
EGIContractMgmt@pge.com

Interconnection Customer:
michael.debortoli@ncpa.com

Appendix G

Note: LGIP based Original LGIA Appendix G, Reliability Management Standards Agreement is deleted in its entirety.

Interconnection Customer's Share of Costs of Network Upgrades for Applicable Project Group

Table G-1

Type of Upgrade	Upgrade	Description	Cost Allocation Factor	Estimated Cost x 1000 (PTO)	Estimated Cost x 1000 (IC)	Estimated Time to Construct (Months)
(i) Reliability Network Upgrades (Q267)	:		100%	$0	$0	
(i) Reliability Network Upgrades (Q945)			100%	$0	$0	
Total Escalated Costs					$0	

Appendix H

INTERCONNECTION REQUIREMENTS FOR AN ASYNCHRONOUS GENERATING FACILITY

(Not Applicable to Q267 and Q945 consolidated Queue Positions Project)

Appendix H sets forth interconnection requirements specific to all Asynchronous Generating Facilities. Existing individual generating units of an Asynchronous Generating Facility that are, or have been, interconnected to the CAISO Controlled Grid at the same location are exempt from the requirements of this Appendix H for the remaining life of the existing generating unit. Generating units that are replaced, however, shall meet the requirements of this Appendix H.

A. Technical Requirements Applicable to Asynchronous Generating Facilities

i. Low Voltage Ride-Through (LVRT) Capability

An Asynchronous Generating Facility shall be able to remain online during voltage disturbances up to the time periods and associated voltage levels set forth in the requirements below.

1. An Asynchronous Generating Facility shall remain online for the voltage disturbance caused by any fault on the transmission grid, or within the Asynchronous Generating Facility between the Point of Interconnection and the high voltage terminals of the Asynchronous Generating Facility's step up transformer, having a duration equal to the lesser of the normal three-phase fault clearing time (4-9 cycles) or one-hundred fifty (150) milliseconds, plus any subsequent post-fault voltage recovery to the final steady-state post-fault voltage unless clearing the fault effectively disconnects the generator from the system. Clearing time shall be based on the maximum normal clearing time associated with any three-phase fault location that reduces the voltage at the Asynchronous Generating Facility's Point of Interconnection to 0.2 per-unit of nominal voltage or less, independent of any fault current contribution from the Asynchronous Generating Facility.

2. An Asynchronous Generating Facility shall remain online for any voltage disturbance caused by a single-phase fault on the transmission grid, or within the Asynchronous Generating Facility between the Point of Interconnection and the high voltage terminals of the Asynchronous Generating Facility's step up transformer, with delayed clearing, plus any subsequent post-fault voltage recovery to the final steady-state post-fault voltage unless clearing the fault effectively disconnects the generator from the system. Clearing time shall be based on the maximum backup clearing time associated with a single point of failure (protection or breaker failure) for any single-phase fault location that reduces any phase-to-ground or phase-to-phase voltage at the Asynchronous Generating Facility's Point of Interconnection to 0.2 per-unit of nominal voltage or less, independent of any fault current contribution from the Asynchronous Generating Facility.

3. Remaining on-line shall be defined as continuous connection between the Point of Interconnection and the Asynchronous Generating Facility's units, without any mechanical isolation. Asynchronous Generating Facilities may cease to inject current into the transmission grid during a fault.

4. The Asynchronous Generating Facility is not required to remain on line during multi-phased faults exceeding the duration described in Section A.i.1 of this Appendix H or single-phase faults exceeding the duration described in Section A.i.2 of this Appendix H.

5. The requirements of this Section A.i of this Appendix H do not apply to faults that occur between the Asynchronous Generating Facility's terminals and the high side of the step-up transformer to the high-voltage transmission system.

6. Asynchronous Generating Facilities may be tripped after the fault period if this action is intended as part of a special protection system.

7. Asynchronous Generating Facilities may meet the requirements of this Section A.i of this Appendix H through the performance of the generating units or by installing additional equipment within the Asynchronous Generating Facility, or by a combination of generating unit performance and additional equipment.

8. The provisions of this Section A.i of this Appendix H apply only if the voltage at the Point of Interconnection has remained within the range of 0.9 and 1.10 per-unit of nominal voltage for the preceding two seconds, excluding any sub-cycle transient deviations.

The requirements of this Section A.i in this Appendix H shall not apply to any Asynchronous Generating Facility that can demonstrate to the CAISO a binding commitment, as of July 3, 2010, to purchase inverters for thirty (30) percent or more of the Generating Facility's maximum Generating Facility Capacity that are incapable of complying with the requirements of this Section A.i in this Appendix H. The Interconnection Customer must include a statement from the inverter manufacturer confirming the inability to comply with this requirement in addition to any information requested by the CAISO to determine the applicability of this exemption.

ii. Frequency Disturbance Ride-Through Capability

An Asynchronous Generating Facility shall comply with the off nominal frequency requirements set forth in the WECC Under Frequency Load Shedding Relay Application Guide or successor requirements as they may be amended from time to time.

iii. Power Factor Design Criteria (Reactive Power)

An Asynchronous Generating Facility not studied under the Independent Study Process, as set forth in Section 4 of Appendix DD, shall operate within a power factor within the range of 0.95 leading to 0.95 lagging, measured at the Point of Interconnection as defined in this Amended and Restated LGIA in order to maintain a specified voltage schedule, if the Phase II Interconnection Study shows that such a requirement is necessary to ensure safety or reliability. An Asynchronous Generating Facility studied under the Independent Study Process, as set forth in Section 4 of Appendix DD, shall operate within a power factor within the range of 0.95 leading to 0.95 lagging, measured at the Point of Interconnection as defined in this Amended and Restated LGIA in order to maintain a specified voltage schedule. The power factor range standards set forth in this section can be met by using, for example, power electronics designed to supply this level of reactive capability (taking into account any limitations due to voltage level, real power output, etc.) or fixed and switched capacitors, or a combination of the two, if agreed to by the Participating TO and CAISO. The Interconnection Customer shall not disable power factor equipment while the Asynchronous Generating Facility is in operation. Asynchronous Generating Facilities shall also be able to provide sufficient dynamic voltage support in lieu of the power system stabilizer and automatic voltage regulation at the generator excitation system if the Phase II Interconnection Study shows this to be required for system safety or reliability.

iv. Supervisory Control and Data Acquisition (SCADA) Capability

An Asynchronous Generating Facility shall provide SCADA capability to transmit data and receive instructions from the Participating TO and CAISO to protect system reliability. The Participating TO and CAISO and the Asynchronous Generating Facility Interconnection Customer shall determine what SCADA information is essential for the proposed Asynchronous Generating Facility, taking into account the size of the plant and its characteristics, location, and importance in maintaining generation resource adequacy and transmission system reliability.

v. Power System Stabilizers (PSS)

Power system stabilizers are not required for Asynchronous Generating Facilities.

2537131.2