

REQUEST WINDOW SUBMISSION FORM

Please complete this submission form and the Attachment A (technical data) and send the documentation to the ISO contact listed in section 2. Please note that this form should be used for the purpose of submitting information that applies to the scope of Request Window that is a part of the ISO Transmission Planning Process only. For more information on the Request Window, please refer to the Business Practice Manual (BPM) for the Transmission Planning Process which is available at:

<http://www.caiso.com/planning/Pages/TransmissionPlanning/Default.aspx>.

The undersigned ISO Stakeholder Customer submits this request to be considered in the CAISO Transmission Plan. This submission is for (check one)¹:

- Reliability Transmission Project (refer to section 1 of Attachment A)
 - Submission is requested by a PTO with a PTO service territory
 - Submission is requested by a non-PTO, a PTO without a PTO service territory or a PTO outside its PTO service territory.
- Merchant Transmission Facility (refer to section 1 of Attachment A)
- Location Constrained Resource Interconnection Facility (LCRIF) (refer to sections 1 & 2 of Attachment A)
- Project to preserve Long-term Congestion Revenue Rights (CRR) (refer to section 1 of Attachment A)
- Demand Response Alternatives (refer to section 3 of Attachment A)
- Generation Alternatives (refer to section 4 of Attachment A)

1. Please provide the following basic information of the submission:

- a. Please provide the project name and the date you are submitting the project proposal to the ISO. It is preferred that the name of the project reflects the scope and location of the project:

Project Name: Redacted **#2 230 kV Line Circuit Breaker**

Upgrade

Submission Date: **09/14/2012**

- b. Project location and interconnection point(s): **Gregg and Herndon Substations**
- c. Description of the project. Please provide the overview of the proposed project (e.g. overall scope, project objectives, estimated costs, etc.): **The project proposes to replace limiting terminal equipment on the Redacted #2 230 kV Line at Redacted substation. The new terminal equipment must have a summer emergency rating of at least 1950 Amps.**
- d. Proposed In-Service Date, Trial Operation Date and Commercial Operation Date by month, day, and year and Term of Service.

¹ Please contact the ISO staff at requestwindow@caiso.com for any questions regarding the definitions of these submission categories in this form.

Proposed In-Service date: **05 / 31 / 2015**
Proposed Trial Operation date (if applicable): / /
Proposed Commercial Operation date (if applicable): / /
Proposed Term of Service (if applicable):

e. Contact Information for the Project Sponsor:

Name:
Title: **Manager**
Company Name: **Pacific Gas and Electric Company**
Street Address:
City, State:
Zip Code:
Phone Number:
Fax Number:
Email Address:

2. This Request Window Submission Form shall be submitted to the following ISO representative:

Name: Dana Young
Email Address: requestwindow@caiso.com

3. This Request Window Submission Form is submitted by:

Check here if the information is the same as the Project Sponsor information in 1 (f) of this submission:

Name:
Title:
Company Name:
Street Address:
City, State:
Zip Code:
Phone Number:
Fax Number:
Email Address:

Gregg-Herndon #2 230 kV Line Circuit Breaker Upgrade

IN-SERVICE DATE

May 2015

PURPOSE AND BENEFIT

Reliability – NERC compliance.

PROJECT CLASSIFICATION

This is a new project submitted for CAISO approval by March 2013.

DESCRIPTION AND SCOPE OF PROJECT

The project scope is to replace limiting terminal equipment at [Redacted] and possibly [Redacted] substations on the [Redacted] #2 230 kV Line in order to return the line rating to 1650 Amps under summer normal conditions and 1950 Amps under summer emergency conditions. This project protects against NERC category C violations and is expected to cost between \$1M and \$2M.

BACKGROUND

The [Redacted] #2 230 kV Line is located in [Redacted] County; It is roughly [Redacted] feet in length and crosses the [Redacted]. The line conductor is bundled 1113 AAC which has a summer normal rating of 1650 Amps, and a summer emergency rating of 1950 Amps. The line is currently limited by circuit breaker 262 and its associated terminal equipment at the Herndon 230 kV switchyard; the line rating is therefore limited to 1600 Amps for both summer normal and summer emergency conditions. The [Redacted] 230 kV lines are important lines for exporting Helms PGP generation during the peak conditions, and for importing power to Helms PGP for pumping during off-peak conditions. Under multiple NERC Category C contingencies the Herndon-Gregg #2 230 kV line is projected to overload in 2013 above its 1600 Amp rating. Until the limiting terminal equipment can be replaced operational switching solutions will take place in preparation for the second contingency.

BASE CASE AND STUDY ASSUMPTIONS

PG&E used base cases and assumptions approved in the CAISO Unified Planning Assumptions and Study Plan for the 2012/2013 Transmission Planning Process cycle.

STUDY CRITERIA

NERC Transmission Planning Reliability Standards
WECC Transmission Planning System Performance Criterion
California ISO Planning Standards

OTHER ALTERNATIVES CONSIDERED

Alternative 1: Status Quo

This alternative is not recommended because it does not remove the limiting equipment on the [Redacted] #2 230 kV line, and will require operational switching solutions be implemented to mitigate the potential NERC category C violations.

PROJECT SCHEDULE

- Environmental and Permitting Processes – TBD
- Design – TBD
- Major Equipment – Conductor
- Construction – TBD
- Operational – May, 2015

KEY ISSUES

- Land-Use Restrictions – TBD
- Environmental Concerns – TBD
- Special Metering or Protection - None
- Common Mode Exposure Items - None
- Interaction with other Projects or Studies – None

MISCELLANEOUS DATA

- PG&E will construct, own, and finance the project
- PG&E will be the planned operator of the project

GEPSLF MODELING INFORMATION

[Redacted] #2 230 KV LINE CIRCUIT BREAKER UPGRADE PROJECT
OLDSECDD 30810, 30835, CKT=2, SEC=1, MVA1=657.3, MVA2=776.8, MVA3=796.7,
MVA4=796.7

ATTACHMENTS

1. Single Line Diagrams

2. Demand Forecast
3. Power Flow Summary
4. Pre and Post Project Power Flow Plots

Attachment 1

| | |
|--|-----------|
| Redacted | #2 230 kV |
| Line Circuit Breaker Upgrade (Status Quo) | |



Figure 1: Existing Single Line Diagram

| | |
|--|-----------|
| Redacted | #2 230 kV |
| Line Circuit Breaker Upgrade (Proposal) | |

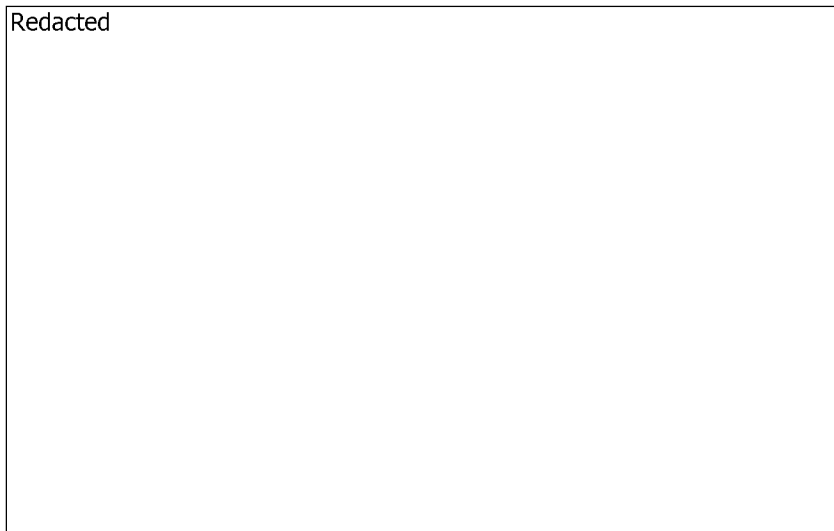


Figure 2: Proposed Single Line Diagram

Attachment 2

| Area | 2013 (MW) | 2014 (MW) | 2015 (MW) | 2016 (MW) | 2017 (MW) | 2022 (MW) | Demand Growth (%) |
|-------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------------|
| Fresno Area | 2,346 | 2,379 | 2,409 | 2,442 | 2,476 | 2,664 | 1.5% |

Table 1: Demand Forecast for the Fresno Area

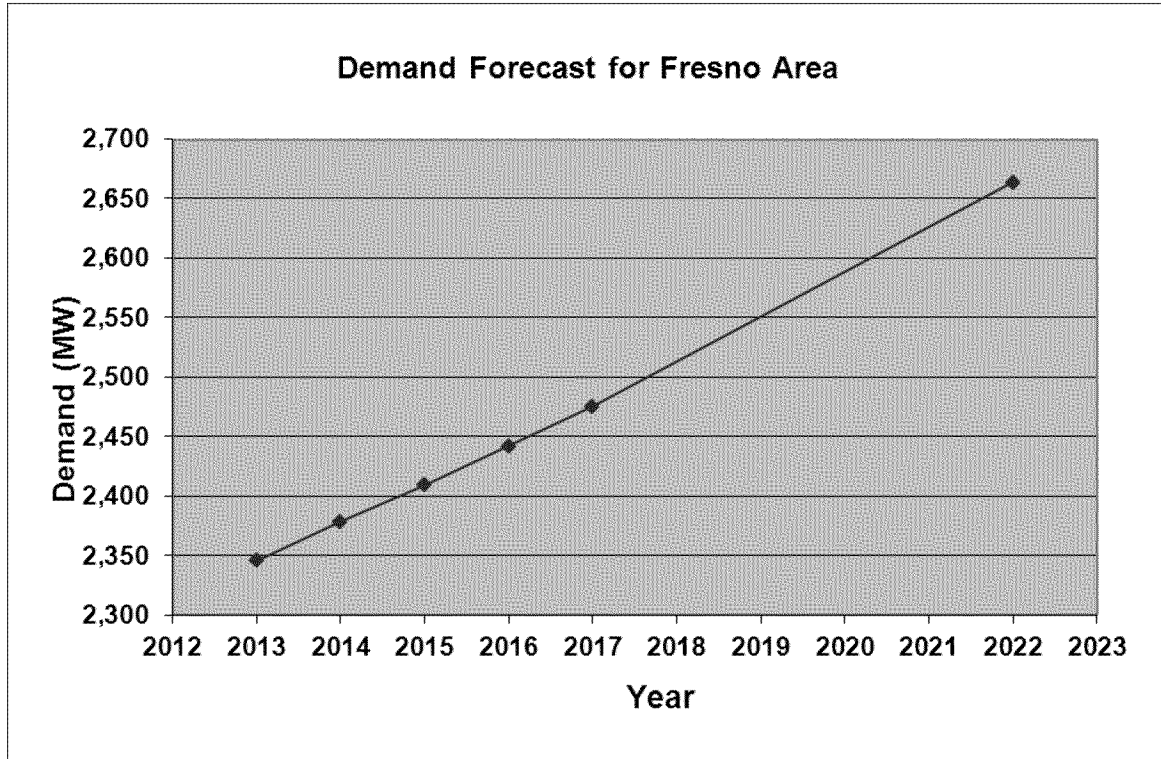


Figure 3: Demand Forecast Graph

Attachment 3

Table 2: Power Flow Results

| | | Pre-Project | | | | | | Post-Project | Contingency | |
|-------------------------|---------------------|-------------|---------|---------|---------|---------|---------|--------------|-------------|--------------------|
| Facility | Rating | 2013 | 2014 | 2015 | 2016 | 2017 | 2022 | 2022 | | |
| Redacted #2 230 kV Line | SN Rating 1600 Amps | 106.0 % | 109.1 % | 109.0 % | 109.3 % | 111.3 % | 116.1 % | 95.0% | Redacted | #1 |
| | | Not Rec | 95.5 % | 96.2 % | 97.2 % | 99.2 % | 105.7 % | 86.0% | Redacted | 230 kV Lines |
| | | 93.0 % | 95.9 % | 96.7 % | 97.6 % | 99.5 % | 103.2 % | 84.5% | Redacted | 230 kV Bus 1 Fault |

Attachment 4

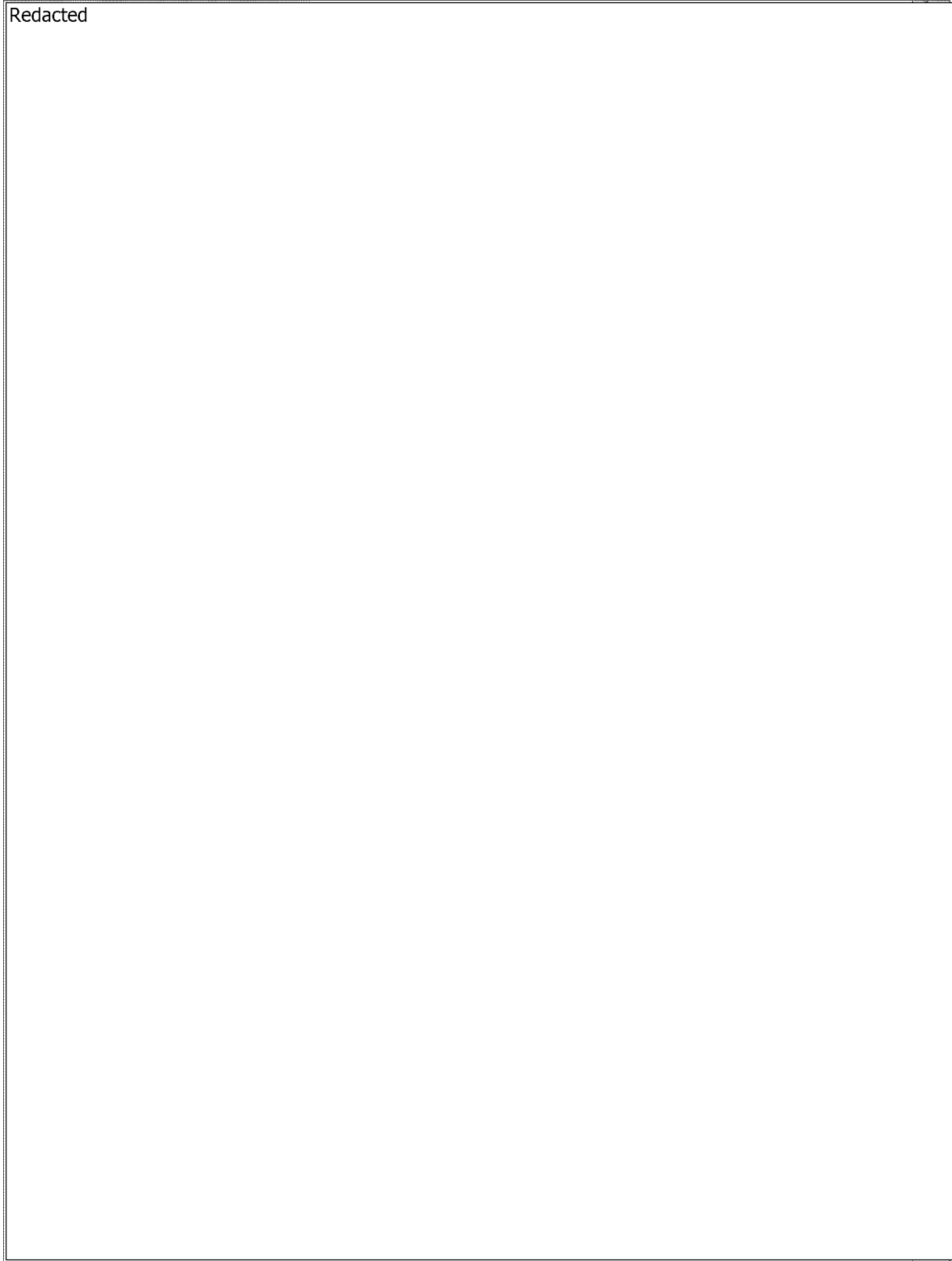


Figure 4: Pre Project – [Redacted] and [Redacted] 230 kV Line Outage

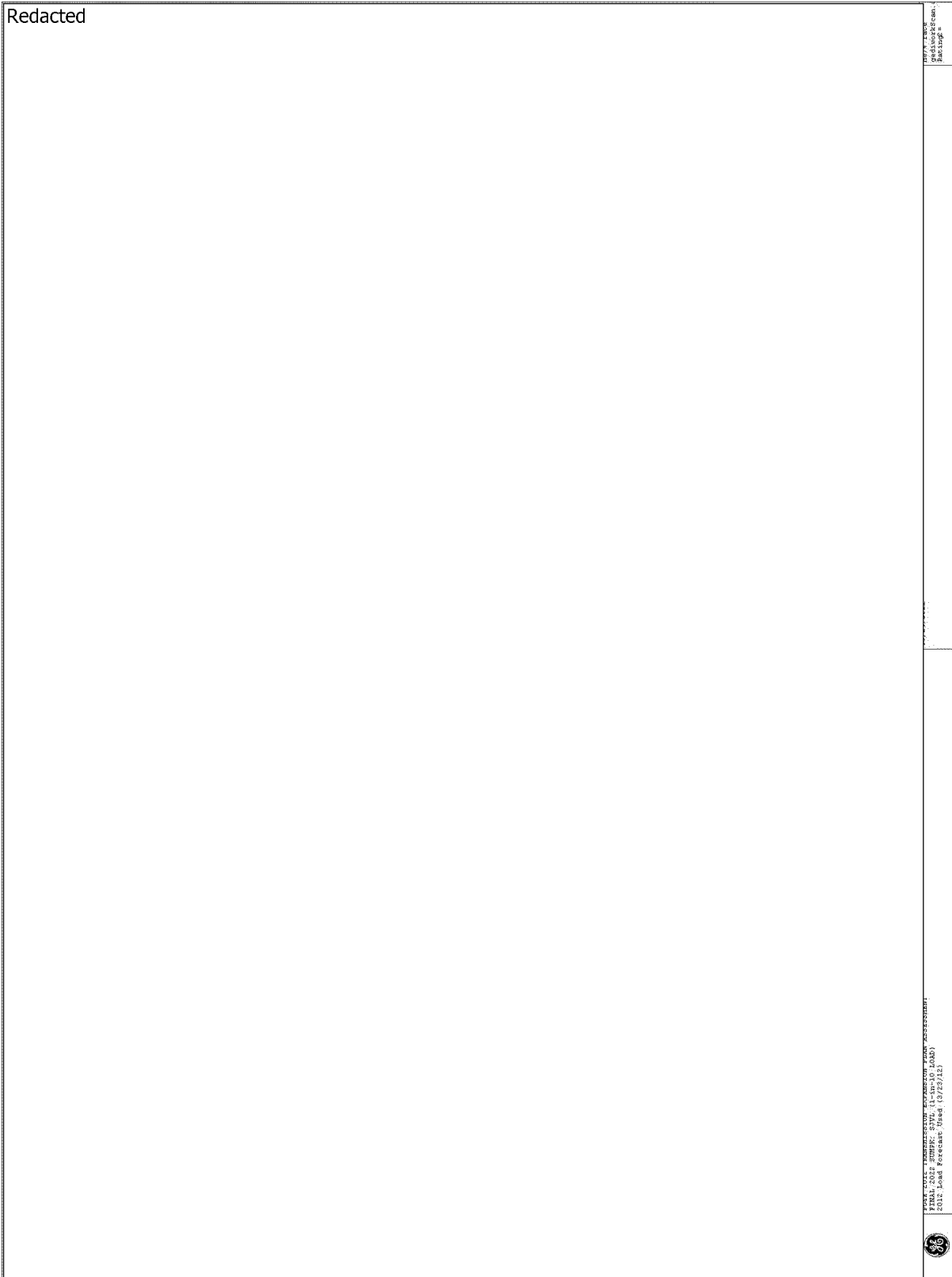


Figure 5: Post-Project Redacted and Redacted 230 kV Line Outage