

**Enclosure 5 – PG&E Data Response 2,
Supplement, Request date
March 20, 2015**

We respectfully call your attention to the fact that accident reports and other information or materials that may be submitted as part of a Data Response are provided solely for the use of the Commission and its staff and are not open to public inspection pursuant to Commission Resolution dated February 10, 1970, General Order 66-C and Public Utilities Code sections 315 and 583.

1. Following the April 2013 Metcalf attack, what improvements did PG&E plan for substation and electric grid security? What improvements did PG&E plan specifically for the Metcalf substation? What changes (if any) did PG&E make to these plans following the 2014 Metcalf Burglary? Please list in detail.

Supplemental Questions:

Please provide a high-level description of improvements planned at other substations.

Who is funding the \$100 million that PG&E states it will be spending over three years for security improvements?

Original Answer:

Following the April 2013 Metcalf incident, PG&E implemented immediate enhancements to the facility, included providing 24/7 on-site guard coverage and installing additional cameras for monitoring the site. PG&E also began long-term plans to improve the security at a number of critical substations, including Metcalf, which included enhancements to both physical security perimeters as well as significant technology enhancements.

Specifically, PG&E's long-term plan for Metcalf included the installation of privacy fencing or solid walls and equipment shielding, as well as technology improvements such as installation of thermal cameras with enhanced detection analytics, public address systems, improved lighting and gunshot detection. PG&E's long-term plan for Metcalf was still in progress when the August 2014 Metcalf burglary occurred.

Following the August 2014 Metcalf burglary, PG&E provided additional immediate enhancements such as more lighting, more cameras with [REDACTED] monitoring, and enhanced on-site patrolling guards. These were placed at both the Metcalf general construction yard and the substation.

Details about PG&E's long-term electric grid security plans are highly confidential. PG&E proposes to discuss those plans with SED in person.

Revised/Supplemental Answer:

Following the April 2013 Metcalf incident, PG&E implemented immediate enhancements to the facility, included providing 24/7 on-site guard coverage and installing additional cameras for monitoring the site. PG&E also began long-term plans to improve the security at a number of critical substations, including Metcalf, which included enhancements to both physical security perimeters as well as significant technology enhancements.

Specifically, PG&E's long-term plan for Metcalf included the installation of privacy fencing or solid walls and equipment shielding, as well as technology improvements such as installation of thermal cameras with enhanced detection analytics, public address systems, improved lighting and gunshot detection. PG&E's long-term plan for Metcalf was still in progress when the August 2014 Metcalf burglary occurred.

Following the August 2014 Metcalf burglary, PG&E provided additional immediate enhancements such as more lighting, more cameras with [REDACTED] monitoring, and enhanced on-site patrolling guards. These were placed at both the Metcalf general construction yard and the substation.

PG&E's long-term plan for other selected substations is in progress, as discussed in Answer 4. These plans include onsite security guard coverage, installation of privacy fencing or solid walls and equipment shielding, as well as technology improvements such as installation of cameras with enhanced detection analytics, public address systems, improved lighting and gunshot detection.

PG&E is currently projected to spend over \$200 million in security improvements. These costs are expected to be included in PG&E's future Transmission Owner (TO) cases.

Response provided by: Manho Yeung, Electric System Planning & Reliability

2. How did PG&E determine that the improvements in security for Metcalf and other substations were appropriate? For the various projects and plans listed above, please provide PG&E's rationale in choosing these projects.

Supplemental Question:

Please provide a high-level description of the factors considered.

Original Answer:

Following the April 2013 Metcalf incident, PG&E teamed with third-party experts to determine both the specific security improvement measures and the specific substations where improvements were necessary. The specific substations were chosen through a combined internal and third-party effort between the third-party expert and PG&E's Electric Asset Management and Operations departments.

Revised/Supplemental Answer:

Following the April 2013 Metcalf incident, PG&E teamed with third-party experts to determine both the specific security improvement measures and the specific substations where improvements were necessary. Law enforcement agencies were also consulted. The specific substations were chosen through a combined internal and third-party effort between the third-party expert and PG&E's Electric Operations, Asset Management, and Corporate Security departments. A number of factors are considered in determining the importance of the asset and the security plans including [REDACTED]

Response provided by: Manho Yeung, Electric System Planning & Reliability, and Stephanie Douglas, Corporate Security

4. On a month by month basis, from April 2013 to the present date, which security improvement projects have PG&E planned and completed at Metcalf? At other substations and for other assets? Please list by substation or asset, and describe the project. Please list the planned completion and actual completion dates for all such projects. For pending projects please list the current estimated completion dates.

Supplemental Question: Please provide schedule with percentage of projects complete and general description of such projects.

Original Answer:

In addition to the work described in Answer 1, above, additional security measures at Metcalf include installing [REDACTED] and hiring and training [REDACTED] overnight monitoring staff [REDACTED] both of which are expected to be completed by May 2015.

PG&E has plans to complete security improvement projects at multiple additional sites. Details about PG&E's long-term electric grid security plans are highly confidential. PG&E proposes to discuss those plans with SED in person.

Revised/Supplemental Answer:

In addition to the work described in Answer 1, above, additional security measures at Metcalf include hiring and training [REDACTED] overnight monitoring staff [REDACTED] which was completed in May 2015 with training ongoing. [REDACTED] will also be installed to replace the existing [REDACTED]. This installation is now expected to be completed in [REDACTED].

PG&E has plans to complete security improvement projects at [REDACTED]. A general description of this work is contained in Answer 1. The below table shows the percentage completion forecasted at selected PG&E substations.

	2 nd QTR 2015	3 rd QTR 2015	4 th QTR 2015	1 st QTR 2016	2 nd QTR 2016	3 rd QTR 2016	4 th QTR 2016
% Complete	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Response provided by: **Manho Yeung, Electric System Planning & Reliability**

6. During the June 18, 2014 substation security physical workshop PG&E representatives stated that the company would be spending \$100 million dollars over three years for security improvements. How specifically does PG&E plan to spend this money? Please provide a detailed accounting of PG&E's plans for spending this money. List specific projects including the assets (substations, other facilities) they are related to. What was PG&E's specific schedule for spending this money?

Supplemental Question:

Please provide general description and forecast of spend broken down by type of upgrade.

Original Answer:

Between 2014 and 2016, PG&E plans to invest more than \$100 million on substation security for the highest priority facilities. Among other measures, our plans include adding:

- Barriers around the perimeter to shield equipment and obstruct views inside the substation;
- Enhanced detection and deterrent systems; and
- Improved lighting and camera systems.

Details about PG&E’s electric grid security plans are highly confidential. PG&E proposes to discuss those plans with SED in person.

Revised/Supplemental Answer:

Through 2017, PG&E plans to invest more than \$200 million on substation security for the highest priority facilities. Among other measures, our plans include adding:

- Barriers around the perimeter to shield equipment and obstruct views inside the substation;
- Enhanced detection and deterrent systems; and
- Improved lighting and camera systems.

Of the total \$200 million-plus investment, PG&E anticipates spending approximately 40 percent on physical barriers and 60 percent on technology. Below is a table with the current forecast of cumulative percentage spend in each category by quarter through early 2017.

	2Q 2015	3Q 2015	4Q 2015	1Q 2016	2Q 2016	3Q 2016	4Q 2016	1Q 2017
Physical								
Technology								

Response provided by: Manho Yeung, Electric System Planning & Reliability

7. As of June 2014, how much of the money identified in Question 6 above had been spent? For which projects?

Supplemental Question:

Please provide dollars and percentage of projects.

Original Answer:

Details about PG&E's electric grid security plans are highly confidential. PG&E proposes to discuss those plans with SED in person.

Revised/Supplemental Answer:

Through June 2014, PG&E had spent approximately \$11.5 million on [REDACTED] projects. Prior to this time, PG&E was working with third-party experts to determine both the specific security improvement measures and the specific substations where improvements were necessary.

Response provided by: Manho Yeung, Electric System Planning & Reliability

8. Since June 2014, on a month by month basis, how much of the money identified in Question 6 above has been spent and for which projects?

Supplemental Question:

Please provide spend and percentage of projects.

Original Answer:

Details about PG&E’s electric grid security plans are highly confidential. PG&E proposes to discuss those plans with SED in person.

Revised/Supplemental Answer:

	Jun 2014 Actual Amt	Jul 2014 Actual Amt	Aug 2014 Actual Amt	Sep 2014 Actual Amt	Oct 2014 Actual Amt	Nov 2014 Actual Amt	Dec 2014 Actual Amt	Jan 2015 Actual Amt	Feb 2015 Actual Amt	Mar 2015 Actual Amt	Apr 2015 Actual Amt
	\$ 649,344	\$ 808,305	\$ 2,966,541	\$ 963,550	\$ 1,825,007	\$ 3,888,192	\$ 3,311,170	\$ 1,396,044	\$ 698,010	\$ 587,777	\$ 1,334,590
	\$ 176,786	\$ 182,039	\$ 335,341	\$ 1,638,669	\$ 1,112,313	\$ 2,023,709	\$ 3,372,657	\$ 1,823,008	\$ 4,686,538	\$ 4,421,892	\$ 2,968,482

Response provided by: Manho Yeung, Electric System Planning & Reliability

10. Since the April 16, 2013 attack, please list all security breaches at PG&E facilities including unauthorized access, copper or other theft from substations, or any other violations of PG&E security protocols.

Supplemental Question:

Please provide numbers of types of incidents and also numbers of types of facilities.

Original Answer:

The details of security incidents at PG&E's facilities are highly confidential and may be the subject of pending state and federal investigation. PG&E proposes to discuss those details with SED in person.

Revised/Supplemental Answer:

Please see attached.

Response provided by: Stephanie Douglas, Corporate Security

18. If a need was identified in 2010 to [REDACTED] at the Security Control Center why did it take PG&E until April 2013 for PG&E to prioritize “action” on the PSIM? (RCA, page 15).

Answer:

Please note that the Root Cause Analysis report is highly confidential and was submitted to the CPUC pursuant to Section 583 and General Order 66-C.

Although PG&E previously identified a need to [REDACTED] at the Security Control Center, PG&E did not take action on PSIM until April 2013, after the initial Metcalf incident shed light on the need to prioritize security measures at our critical facilities.

Revised/Supplemental Answer:

Although PG&E previously identified a need to [REDACTED] at the Security Control Center, PG&E did not take action on PSIM until after the initial Metcalf incident in April 2013 shed light on the need to prioritize security measures at our critical facilities.

Response provided by: Stephanie Douglas, Corporate Security