ATTACHMENT I

Cornerstone Improvement Project Summary (April 5, 2010)



Summary

April 5, 2010



Cornerstone is designed to provide the Commission a choice between two reliability levels for PG&E

Cornerstone Improvement Project	Invest to fundamentally change design practices to achieve a new standard of reliability					
2011	Continue the current					
GRC	"adequate service" standard					

PG&E has structured Cornerstone so the question can be considered separately from the complexities of the GRC





Other benefits from Cornerstone

- Operational Flexibility, Extended Asset Life, Reduced Losses, Buffer for Load Forecast Errors
- Anticipating Changes to the Grid (Smart Grid, Distributed Generation, Electric Vehicles)
- Bring New Job opportunities to Northern California





 Poorest performing class



Cornerstone is designed to keep costs and projects separate from normal course of business expenditures and requires annual reporting of progress



Specific project costs captured and trued up relative to approved spending



- •Actual projects compared to identified projects
- •Forecast updates for coming year
- •Load forecasts, actual escalation rates updated

Based on concerns raised by Parties, PG&E proposes to withdraw the Reliability Performance Incentive Mechanism

ATTACHMENT II

PG&E-1 Direct, Chapter 3

Figure 3-1 Pacific Gas and Electric Company Asset Utilization Graph (Page 3-6)

FIGURE 3-1 PACIFIC GAS AND ELECTRIC COMPANY ASSET UTILIZATION GRAPH



3. Capacity Planning Criteria and Procedures

The following discussion provides a high-level overview of the planning process and identifies the system criteria and procedures in PG&E's capacity planning criteria that will **stay the same** and those PG&E **proposes to change** as part of the Cornerstone Improvement Project.

a. Distribution Planning Areas

1

2

3

4

5

6

PG&E's distribution system is large and diverse, serving customers 7 in high density populated urban areas, medium density suburban 8 communities, and low-density areas in rural portions of the state. 9 Therefore, the adequacy of the distribution system cannot effectively be 10 11 evaluated as a whole. In light of this, PG&E's planning process requires 12 dividing its service territory into distribution planning areas (DPA) in order to facilitate studies to determine how and where to expand the 13 system. Physical boundaries for the DPAs are typically selected based 14 15 upon geographic barriers that prevent or impede distribution system interconnection or electric system characteristics such as a difference in 16 distribution system voltages. PG&E is not proposing any changes to 17 how the Company defines DPAs as part of the Cornerstone 18 19 Improvement Project.

ATTACHMENT III

CUE Rebuttal, Marcus (Page 20)

1	included in the CIP application but not sufficiently well justified to be
2	approved by the Commission in this proceeding, makes good sense.
$\frac{3}{4}$	G. TURN Proposes To Allow PG&E To Include Additional Reliability-improving Measures In Its TY2014 GRC
5	Another one of TURN's alternative suggestions for the outcome of this
6	case is that, even if the Commission approves some of the CIP in this
7	proceeding, it should approve no more than 11% of the requested dollars, ⁶²
8	with PG&E then able to come back in the TY2014 GRC to justify further
9	expenditures as appropriate. ⁶³ CUE believes PG&E coming back to justify
10	further expenditures is also a worthwhile suggestion if the Commission is
11	going to substantially cut back the scope of the CIP.
12	PG&E has proposed the CIP as a program whose capital investments
13	would be made over a 7-year period, from 2010-2016, inclusive. If the
14	program is cut back as TURN proposes in its second alternative, or even if
15	the program is cut back by "only" 50%, PG&E should be able to fully
16	implement the scaled back program before 2014. (PG&E's current proposal
17	would have over 58% of the CIP capital investment occurring prior to 2014). ⁶⁴
18	It would then make perfect sense for the TY2014 GRC to be used for PG&E to
19	argue for extension and expansion of those CIP components which have
20	proved worthwhile over the preceding years. The TY2014 GRC could also
21	include staffing-based reliability measures that were excluded from

⁶² TURN, Testimony of William B. Marcus and Gayatri M. Schilberg, p. 93.
⁶³ TURN, Testimony of William B. Marcus and Gayatri M. Schilberg, p. 99.
⁶⁴ PG&E, p. 7-6, Table 7-2.

ATTACHMENT IV

PG&E Rebuttal, Chapter 2

TABLE 2-1 Pacific Gas and Electric Company Electric Distribution Capacity 95 Specific Emergency Capacity Projects (Pages 2-7 and 2-8)

TABLE 2-1 PACIFIC GAS AND ELECTRIC COMPANY ELECTRIC DISTRIBUTION CAPACITY 95 SPECIFIC EMERGENCY CAPACITY PROJECTS

	PG&E LIST OF EMERGENCY SUBSTATION CAPACITY PROJECTS PROVIDED IN CHAPTER 3 WORKPAPERS PACE 3-11 TO 3-13					CAPITAL EXPENDITURES									
1.14.4				[MW	Functional	Operative								
No	Project No.	Division	DPA	Project Description	Dof	Group	Date	YR2011	YR2012	YR2013	YR2014	YR2015	YR2016	Total	
1	1000 1000	DeAnza	l on Gnton	Install Circuit Switcher and Breaker at Los Gatos Sub	6.3	EDP	7/1/2011	\$ 851,632							from page 3-10 line 34
'	2010-000	DOMES	Urban Bakerafield												
2	EDRI_010	Kem	East	Install Circuit Switcher and Breaker at Columbus Sub	3.38	EDP	7/1/2011	\$ 851,032							from page 3-10 line 34
3	EDRI_011	Diablo	Brentwood	Install 75 MVA Transformer at Contra Costa Sub	36.6	EDP	7/1/2011	\$ 4,665,711							from page 3-10 and 12
4	EDRI_012	Diablo	Walnut Crook 21kv	Install 75 MVA Transformer and Breaker at Lassajara Sub	31,8	EDP	7/1/2011	5 4,053,711							from name 3-10 line 12
5	EDRI_013	Slerra	Horseshoe	Install 45 MVA Transformer and Breaker at Horseshoo Sub	20.1	<u>EDP</u>	7/1/2011	3 4,000,711							from page 3-10 line 12
6	EDRI_014	North Bay	Napa	Install 45 MVA Transformer and Brankors at Station A Sub	20.0	EDP 609	7/1/2011	\$ 4,000,711 \$ 4,685,711						·····	from page 3-10 line 12
7	EDRI_015	San Jose	COWINGWIT SHIT JUSO	Purchase Land & Regulatory Work For 3 New Substations	10.0	602	7/1/2011	\$ 7.050.087							from page 3-0 line 40
	EDR2_020	Stockton	Tracy	Install 45 MVA Transformer at Tracy Sub	26,3	EDP	7/1/2011	\$ 4,505,711							from page 3-10 line 12
10	EDRI 018	North Bay	Valleio 12kV	Install 45 MVA Transformer at Hinhway Sub	22.4	EDP	7/1/2011	\$ 4,585,711							from page 3-10 line 12
11	EDRI 019	Mission	San Ramon -	Install 45 MVA Transformer and Breaker at North Dublin Sub	22.1	EDP	7/1/2011	\$ 4,685,711							from page 3-10 line 12
12	EDRI 020	Sacramento	Suisun Cordella	Install 45 MVA Transformer and Brookers at Jamason Sub	22.0	EDP	7/1/2011	\$ 4,585,711							from page 3-10 line 12
13	EDRI 021	Stockton	Tracy	Install 45 MVA Transformer at Tracy Sub	21.1	EDP	7/1/2011	\$ 4,685,711							from page 3-10 line 12
14	EORI_022	Los Padres	Paso Robles	Install 30 MVA Transformer and Broakers at Paso Robies Sub	21.0	EDP	7/1/2011	\$ 4,585,711							from page 3-10 line 12
16	EDRI_023	North Valley	Redding	Install 30 MVA Transformer and Broaker at Cottonwood Sub	21,0	EDP	7/1/2011	\$ 4,585,711							from page 3-10 line 12
10	EDRI_024	Los Padres	Santa Maria	Install 45 MVA Transformer at Santa Marla Sub	19.5	EDP	7/1/2011	\$ 4,585,711						·····	from page 3-10 line 12
17	EDRI_025	Stockton	Manteca 17kV	Install 45 MVA Transformer at Mantoca Sub	19.4	EDP	7/1/2011	\$ 4,585,711	1.717.457						from page 3-10 line 12
18	EDR1_026	North Coast	Polaluma	Install 45 MVA Transformer and Breakors at Corona Sub	18,0	EDP	7/1/2012		a 4,712,300						from page 3-10 line 12
19	EDRJ_027	Central Coast	Salinas	Install 45 MVA Transformer at Satinos Sub	10.4	EDP	7/1/2012		5 4,/12,103			·····		******	from page 3-10 line 12
20	EDRJ_028	Diablo	Walnut Crook 12kV	Install 45 MVA Transformer at Moraga Sub	17.3	EUP	74 2012		\$ 4,712,100 I					***	from page 3-10 line 12
21	CORI_029	Stockton	Manteca 1/KV	Instal 30 MVA Transformer and Broaker at Places Sub	100	EDP	78/0012		5 4712155						from page 3-10 line 12
22	EDRI_030	North Loast	Santa Rosa	Install 30 MVA Transformer and Breaker at Warandotto Sub	18.9	FOP	7/1/2012		\$ 4,712,155		~~~ (from page 3-10 line 12
23	EDRI 0.11	Stockton	Couth Storkion 12kV	Install 45 MVA Transformer at Waber Sub	10.0	EDP	7/1/2012	•	\$ 4,712,155						from page 3-10 line 12
25	EDRI 032	Sacramento	Peobody	Install 75 MVA Transformer at Peabody Sub	15.8	EDP	7/1/2012		\$ 4,712,158						from page 3-10 line 12
	033	Sucialitatio	Diamond Springs -	Install 45 MVA Transformer and Breaker at Diamond Springs											
26	FORI 034	Slerra	Placerville	Sub	15.4	EDP	7/1/2012		\$ 4,712,155			,			from page 3-10 line 12
27	EDRI_035	North Coast	Sebastopol	Install 30 MVA Transformer at Molino Sub	14.7	EDP	7/1/2012		\$ 4,712,165						from page 3-10 line 12
26	EDRI_036	Diablo	Walnut Creek 12kV	Install 45 MVA Transformer at Lakewood Sub	14.5	EDP	7/1/2012		\$ 4,712,155						from page 3-10 line 12
20	EDRI_037	Sacramento	Woodland	Install 30 MVA Transformer and Breaker at Plainfield Sub	14,4	EDP	7/1/2012		\$ 4,712,165						from gage 3-10 line 12
30	EDRI_038	Yosemite	Storey	Install 30 MVA Transformer and Breaker at Borden Sub	14.2	EDP	7/1/2012		4,712,155						Four pape of to min th
			Urban Bakerstield	L ALL AT MICH THE STORE AND AND AND AND AND	1.20	100	74 0000		+ 4712455						from page 3-10 line 12
31	EDRI_039	Kern	North East	Install 45 MVA Transformer and Breaker at Peake Sub	13.0	EDP	7/1/2012		\$ 4712,105						from page 3-10 line 12
32	EDRI_040	Yosemice	Storey	Instal 16 MVA Transformer at Californ Sub	12.7	602	7/1/2012	*****	\$ 4,712,105			****	1		from page 3-10 line 12
33	EDR0_041	North Bay	Linnolo	Install 45 MVA Transformer and Breaker at Lincoln Sub	12.6	FOP	7/1/2012	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	\$ 4,712,165			~~~~~			from page 3-10 line 12
75	EDRG_042	Sacramento	West Sacramonio	Install 45 MVA Transformer at Deepwater Sub	11.D	EDP	7/1/2012		\$ 4,712,155						from page 3-10 line 12
	LONG_UND	Ductormatio	Trust Castantinente	Purchase Land & Regulatory Work For Windsor, Pine Hill,	1										
30	FORT 044	Various	Various	New Cottonwood Subs	I	EDP	7/1/2012		5 13,683,553						from page 3-9 line 40
		1 1 1 1 1 1 1 1 1		Purchase Land & Regulatory Work For Windsor, Pine Hill,	1										
37	EORT 045	Various	Various	New Cottonwood Subs		EDP	7/1/2013			\$ 14,118,063					from page 3-9 line 40
38	EORI_046	Sacramento	Sulaun Cordelia	Install 45 MVA Transformer at Sulsun Sub	10,4	EDP	7/1/2013			\$ 4,833,825					from page 3-10 into 12
				Construct and Install 30 MVA Transformer and Broakers at										-	from page 3-10 line 45
30	EDRI_047	North Coast	Fullon-Flich Min	Windsor Sub	20.5	EDP	7/1/2014				5 5,665,331	~		•••••••••••••••••••••••••••••	non page o to lab to
				Construct and Install 45 MVA Transformer and Broakors at	100						• n ona host				from page 3-10 line 46
40	EDR1_043	Central Coast	Hollister	San Justo Sub	18,7	EDP	7/1/2014				0 0,000,001				
		14	Urban Bakerstield	heater 20 MM/A Temperator of Columbur Sub	10.4	EDB	75003			1. 4,833,875					from page 3-10 line 12
41	EDRI_049	Kem	Ition See Ing	Install 45 MVA Transformer and Brooker at El Patio Sub	10.1	EDP	7/1/2013			5 4,033,025			1		from page 3-10 line 12
42	EDRI_050	San Jose	Moreod 19kV	Install 45 MVA Transformer at El Capitan Sub	9.8	EDP	7/1/2013			\$ 4,033,829					from page 3-10 line 12
43	EDRI (157	Sectimento	Vacadilla Divon	Install 30 MVA Transformer at Dixon Sub	Q.7	EDP	7/1/2013]	1 4,033,825			1		from page 3-10 line 12
45	EDRI (152	Fact Ray	South Richmond	Install 45 MVA Transformer at Station G Sub	9.2	EDP	7/1/2013			\$ 4,833,075					from page 3-10 line 12
46	EDRI 054	Slerra	Yuba City	Install 45 MVA Transformer and Breakers at Harter Sub	0.0	EDP	7/1/2013		1	\$ 4,833,826					from page 3-10 line 12
47	EDRI_055	Yosemite	Storey	Install 30 MVA Transformer and Breaker at Cassidy Sub	8.6	EDP	7/1/2013			\$ 4,833,825			_h		trom page 3-10 line 12
48	EDRI 056	North Coast	Sonoma	Install 45 MVA Transformer and Breakor at Sonoma Sub	6.6	903	7/1/2013			\$ 4,833,825					10m page 3-10 and 12
49	CORI_057	Sierra	North Placer	Install 30 MVA Transformer at Placer Sub	6.7	EDP	7/1/2013			\$ 4,633,825					from page 3-10 ins 12
50	CORI 058	East Bay	South Richmond	Install 45 MVA Transformer at Station R Sub	0.6	EDP	7/1/2013		I	\$ 4,033,625				L.,,	1 vou belle e-ve sue re

.

TABLE 2-1 PACIFIC GAS AND ELECTRIC COMPANY ELECTRIC DISTRIBUTION CAPACITY 95 SPECIFIC EMERGENCY CAPACITY PROJECTS (CONTINUED)

No. Product Pr		PGAE LIST OF EMERGENCY SUBSTATION CAPACITY PROJECTS PROVIDED IN CHAPTER 3 WORKPAPERS PAGE 3-41 TO 3-13					CAPITAL EXPENDITURES						1			
Date Description Option Option Option Option PROPE VERCE				1	T	5/16/	Functional	Onerntiva		-	}		1			1
Image: Section of the sectin of the section of the section	No	Project No.	Olvision	DPA	Project Depoription	Def	Group	Date	YR2011	YR2012	YR2013	YR2014	YR2015	YR2016	Total	1
D D	51	EDBI 059	Sacramento	Peobody	Install 75 MVA Transformer at Peabody Sub	8,1	EDP	7/1/2013			\$ 4,833,620					from page 3-10 line 12
o b b c j d	52	EDRI 160	East Bay	Station C/D/L	Install 45 MVA Transformer at Station D Sub	7.9	EDP	7/1/2013		1	5 4,633,825					from page 3-10 line 12
pt pt<	53	EDRI 061	East Bay	K-X	Install 45 MVA Transformer at Station K Sub	7.7	EDP	7/1/2013			\$ 4,633,625					from page 3-10 line 12
or or </td <td>54</td> <td>EDRI 062</td> <td>Mission</td> <td>Fremont 12kV</td> <td>Install 45 MVA Transformer at Newark Sub</td> <td>7,2</td> <td>EDP</td> <td>7/1/2013</td> <td>-</td> <td></td> <td>\$ 4,633,625</td> <td></td> <td></td> <td></td> <td></td> <td>from page 3-10 line 12</td>	54	EDRI 062	Mission	Fremont 12kV	Install 45 MVA Transformer at Newark Sub	7,2	EDP	7/1/2013	-		\$ 4,633,625					from page 3-10 line 12
im for (ar) Next York Model	65	EDRI 063	San Jose	Gliroy	Install 45 MVA Transformer at Llagas Sub	0.0	EDP	7/1/2013	5		\$ 4,833,825			1		from page 3-10 line 12
p1 p1 p2 p2<	50	EDRI 064	North Valley	Red Bluff	Install 30 MVA Transformer at Red Bluff Sub	6,8	EDP	7/1/2013	}		\$ 4,633,625			}		from page 3-10 line 12
Bit Card States State	57	EDRI 065	Stockton	South Stockton 12kV	Install 30 MVA Transformer at French Camp Sub	6.7	EDP	7/1/2013			\$ 4,833,825					from page 3-10 line 12
Image Stretch Timp Intell S (MA) Timp Intell S (MA) Timp Intell S (MA)	58	EDRI 066	Stockton	South Stockton 12kV	Install 30 MVA Transformer at French Camp Sub	0.7	EDP	7/1/2014				\$ 4,072,485				from page 3-10 line 12
Image North Value Restand Andread MAX Transformer and Backer 1 Construct and MAX A Transformer and Backer 2 Construct and MAX A Transformer and Backer 2 <th< td=""><td>59</td><td>EDRI 067</td><td>Stockton</td><td>Tracy</td><td>Install 30 MVA Transformer and Broaker at Carbona Sub</td><td>6.7</td><td>EDP</td><td>7/1/2014</td><td></td><td></td><td></td><td>4,072,405</td><td></td><td></td><td></td><td>from page 3-10 line 12</td></th<>	59	EDRI 067	Stockton	Tracy	Install 30 MVA Transformer and Broaker at Carbona Sub	6.7	EDP	7/1/2014				4,072,405				from page 3-10 line 12
Image: Biological Shimp Construit and Instal 2-45 BMA Transformment and Booking 10, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	60	EDRI 058	North Valley	Roddina	Install 30 MVA Transformer at Oregon Trail Sub	0.0	EDP	7/1/2014				\$ 4,972,485				from page 3-10 line 12
et Serves			(iorar ready	Clarksville Shingle	Construct and Install 2-45 MVA Transformers and Broakers at											
eff Control North Control North Control Stand North Control North Contro North Contre	61	FDR1 069	Slerra	Springs	Pine Hill Sub	11.0	EDP	7/1/2015					\$ 6,015,307			from page 3-10 line 45
n number	62	FDRI 070	North Coast	Sonoma	Install 30 MVA Transformer at Dunbar Sub	6.3	EDP	7/1/2014				4,072,486				from page 3-10 line 12
4 Over, vol. 20 North Marin Integlig 3 MAX Transformer at layers (36) 6.0 CPU Transformer at layers (36) CPU Transformer at layers (36) CPU	63	EDRI 021	Sierra	Marvsville	Install 45 MVA Transformer and Breaker at Olivehurst Sub	6.0	EDP	7/1/2014				4,072,405				from page 3-10 line 12
B Del cord Particity Name Famout 12V Inclinal 44 MAX Transformer at Farl Sub 5.4 Famout 12V Inclinal 44 MAX Transformer at Farl Sub 5.4 Energy	64	EDRI 072	North Bay	North Marin	Install 30 MVA Transformer at Ignacio Sub	5,9	EDP	7/1/2014				\$ 4,072,485				from page 3-10 line 12
9 Support North Placer Install 2 bMA Transformer of Real Sub 5.4 Stall	65	EDRI 073	Mission	Fromont 12kV	Install 46 MVA Transformer at Newark Sub	5.0	EDP	7/1/2014				4,072,405				from page 3-10 line 12
or North Karh Institt 16 MAX Test 16 Max Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX Test 16 MAX <td>Ce</td> <td>EDBI 074</td> <td>Sierra</td> <td>North Placer</td> <td>Install 12 MVA Transformer at Filnt Sub</td> <td>5.7</td> <td>EDP</td> <td>7/1/2014</td> <td></td> <td></td> <td></td> <td>4,972,485</td> <td></td> <td></td> <td></td> <td>from page 3-10 line 12</td>	Ce	EDBI 074	Sierra	North Placer	Install 12 MVA Transformer at Filnt Sub	5.7	EDP	7/1/2014				4,972,485				from page 3-10 line 12
61 Dok of No. Dok Allow Institi 46 MAX Transformer at Skalling Sub 6.0 P77.0004 9 4.07.0004 <	67	EDRI 075	North Bay	North Marin	Install 16 MVA Transformer at Novato Sub	5.5	EDP	7/1/2014				5 4,872,485				from page 3-10 line 12
Image: Dest: 077 Worth Buy: Noga Install 30 MVA Transformer all Bracker all Boalds SMA Frances and Bracker and Bracker all Boalds SMA Frances and Bracker and Bracker and Bracker all Boalds SMA Frances and Bracker and B	60	EDRI 076	DeAnza	Los Altos	Install 45 MVA Transformer at Stelling Sub	5,0	EDP	7/1/2014				4,972,485				from page 3-10 line 12
10 Depiction Install 36 MAX Transformer at Surationg Subt 4.4 CPP 77.0014 1 5 4.472,48 1 600 mm 7 Exp. GP North Valley Permetilis	69	EDRI 077	North Bay	Napa	Install 30 MVA Transformer and Breaker at Basalt Sub	4.8	EDP	7/1/2014				4,972,485				from page 3-10 line 12
The Cong, Org. Number Journality Andbill of MVA Transformer and Branker al CaptorNB Sub 4.0 C.D First MVA Standard Approx Standard Standa	70	EDRI_078	DeAnza	Cupertino	Install 45 MVA Transformer at Saratoga Sub	4.4	EDP	7/1/2014				4,972,485				from page 3-10 line 12
77 Disk des Yossmith Story, minutal S MVA Transformer and EPoco Sub 4.0 DP 77/2014 Story, minutal S MVA Transformer and Brakver at Sub	71	EDRI 079	North Valley	Paradise	Install 16 MVA Transformer and Broaker at Centerville Sub	4.2	GDP	7/1/2014				4,072,405				from page 3-10 line 12
No. Usion Resonation Concurst and Final 45 MVA Transformer and Breakers at 1 CPS 77/2015 CPS 97/2015 CPS 97/2016 CPS	72	EDRI 080	Yosemite	Storey	Install 16 MVA Transformer at El Peco Sub	4,0	EDP	7/1/2014	1			\$ 4,972,495				from page 3-10 line 12
Tay Exat New Cottorwood Sub 37 Esp 77.010 Constraint Subject S				Urban Bakersfield	Construct and install 45 MVA Transformer and Breakers at											i
Y4 Dist. G2 Y0senite Alwator Institi 45 MVA Transformer al Advators Sub 3.6 EDP 77.0214 1 5 4.072,405 1 600 mpc 76 DDX, G4 DDbbb Ahmmbra Institi 45 MVA Transformer al Almators Sub 3.3 EDP 77.0214 1 5 4.072,405 1 600 mpc 76 DDX, G4 DDbbb Ahmmbra Institi 45 MVA Transformer al Brokker at Research 500 Ja 2.0 CDP 77.0214 3 4.072,405 1 Brokker at State	73	CDR1_081	Ken	East	New Cottonwood Sub	3,7	EDP	7/1/2015	1				\$ 0,915,397			from page 3-10 line 45
To Disk, dot Noth Ceast Bolizuoz Octeli Instali 45 MVA Transformer and Romburo 1 Abelianus 200 3.6 C.D.P 77.2021 Image: 15 MVA Transformer and Romburo 1 Abelianus 200 3.6 C.D.P 77.2021 Image: 15 MVA Transformer and Romburo 1 Abelianus 200 3.2 C.D.P 77.2021 Image: 15 MVA Transformer and Romburo 1 Abelianus 200 3.2 C.D.P 77.2021 Image: 15 MVA Transformer and Romburo 1 Abelianus 200 3.2 C.D.P 77.2021 Image: 15 MVA Transformer and Romburo 1 Abelianus 200 3.2 C.D.P 77.2021 Image: 15 MVA Transformer and Romburo 1 MVA Transforme	74	EDRI_082	Yosemite	Atwator	Install 45 MVA Transformer at Atwater Sub	3.6	EDP	7/1/2014		11		\$ 4,072,485				from page 3-10 line 12
10 DBUL (b) Althombra Install 10 MAX Transformer and Resource Sub 3.0 EDP 77/2014 5 4.072,465 - 60m age 7 EDUL (b) Mainut Cross (MAX Transformer and Broaker at Deal Maxim Resource Sub 3.2 EDP 77/2014 - 5 4.072,405 - - Broam age 7 EDUL (b) North Valley Chico Install 46 MAX Transformer and Broaker at Willow Paces Sub 2.6 EDP 77/2014 - 5 5.116.302 Broam age 10 EDUL (b) South Province and MAX Transformer and Broaker at Willow Paces Sub 2.8 EDP 77/2016 - 5 5.116.302 Emp age 10 EDUL (b) OxAdde Install 40 MAX Transformer and Broaker at Willow Paces Sub 2.4 EDP 77/2016 - 5 5.116.302 Emp age Emp age 10 EDRL (b) Penheul Haif Moon Bay Haif Moon Bay Haif Moon Bay 1.4 EDP 77/2016 - 5 5.115.302 Emp age 10 EDRL (b) Northi So	76	EDRI_083	North Coast	Bollevue Cotati	Install 45 MVA Transformer and Breaker at Bellevue Sub	3.6	EDP	7/1/2014				4,972,485				from page 3-10 line 12
T EDRL 65 DUBLO Windle Group Cartery Install 45 MAX Transformer and Bronker at Boart Assessment and Boart Parkings and Boart Parkin	76	EDRI_084	Diablo	Alhambra	Install 16 MVA Transformer at Alhambra Sub	3.3	EDP	7/1/2014				\$ 4,972,485				from page 3-10 line 12
78 Exat_os 8 4072/45 5 4072/45 6 9 9 79 Exat_os North Vielle Chico Install 30 MVA Transformer and Broaker at Norto Dame Sub 2.0 EDP 77/2014 5 5,115.302 6 6 00 Exat_os Datable Chick out Install 30 MVA Transformer and Broaker at Wilkow Buss 2.0 EDP 77/2015 5 5,115.302 6 6 01 Exat_os Daktable Install 30 MVA Transformer and Broaker at Wilkow Buss 2.4 EDP 77/2016 2 5,115.302 6 6 02 Exat_os Peninsula Half Meon Bay Install 30 MVA Transformer and Broaker at Half Meon Bay 2.4 EDP 77/2016 2 5,115.302 6 6 03 Exat_os North Vielle Antif Mabol Sub 2.1 EDP 77/2016 2 5,115.302 6 6 6 6 6 6 6 6 6 6 6 6 6 6	77	EDRI_085	Diablo	Walnut Creek 21kV	Install 45 MVA Transformer and Broaker at Research Sub	3.2	EDP	7/1/2014				4,972,485				from page 3-10 line 12
79 Exet, or North Valley Chico Induit 46 MVA, Transformer and Broaker al Willow Paus (b. 20) CDP 77/2015	78	EDRI_086	Peninsula	South Peninsula	Install 30 MVA Transformer and Brooker at Bell Haven Sub	2.0	EDP	7/1/2014				\$ 4,972,405				from page 3-10 line 12
00 EDNL 068 Diablo Clayon Wilkow Pass Install 30 MVA Transformer and Breaker at Valley Howes 24 EDP 77/2015 F 5 5,115,302 Fern pass 02 DDR: 060 Peninsula Half Moon Bay Install 30 MVA Transformer and Breaker at Valley Howes 24 EDP 77/2015 5 5,115,302 Fern pass 02 DDR: 060 Peninsula Half Moon Bay Install 30 MVA Transformer and Breaker at Valley Howes 24 EDP 77/2015 5 5,115,302 Fern pass 03 DDR: 060 Peninsula Half Moon Bay 14alf Moon Bay 24 EDP 77/2015 5 5 5 5 5 5 5 5 5 5 5 5 7 6 5	79	EDRI_067	North Valley	Chico	Install 46 MVA Transformer and Breaker at Notro Dame Sub	2.0	903	7/1/2015					\$ 5,115,302			from page 3-10 line 12
11 Uptg. (DP) Yosemite Ockdate Instal 30 MVA Transformer and Broaker at Half Moon Buy 2.4 EDP 77/2016 Image: Control of the state at	00	EDRI_068	Diabio	Clayton Willow Pass	Install 30 MVA Transformer and Breaker at Willow Pass Sub	2.5	EDP	7/1/2015					\$ 5,115,392			from page 3-10 line 12
D2 D20 D20 <thd20< th=""> D20 <thd20< th=""> <thd20< th=""> <thd20< th=""></thd20<></thd20<></thd20<></thd20<>	81	EDRI_089	Yosemite	Oakdale	Install 30 MVA Transformer and Broaker at Valley Home Sub	2,4	EDP	7/1/2016					\$ 5,115,392			from page 3-10 line 12
Bit DR1_001 PenInsula Half Moon Bay Induit 30 MVA Transformer and Branker at Law Moon Bay 2.4 EDP 7/1/2016 Control 5 5.115,902 Control 6 45 EDR (92) North Coals Sobabool Install 32 MVA Transformer and Branker at Dayten B	82	EDRI 090	Peninsula	Half Moon Bay	Install 30 MVA Transformer and Brooker at Half Moon Bay	2,4	EDP	7/1/2015					\$ 6,115,392			from page 3-10 line 12
14 EDX (92) North Coast, Sebastopol Install 21 W/A Transformer and Breaker at Chorekoe Sub 2.1 EDP 77/2015 5 5 5 5 6 5 5 6 6 5 6 6 5 6 6 5 6 6 5 6	83	EDR1_091_	Peninsula	Half Moon Bay	Install 30 MVA Transformer and Breaker at Half Moon Bay	2.4	EDP	7/1/2015					\$ 5,115,392			from page 3-10 line 12
as EDR(.93] Stockton North Stockton 12 kV Install 30 MVA Transformer and Broaker at Chorokey Sub 2.0 EDP 77/2015 Image: Construction of the constru	84	EDR1_092	North Coast	Sebasiopol	Install 12 MVA Transformer at Mirabel Sub	21	EDP	7/1/2015					\$ 5,115,302			from page 3-10 line 12
66 EDR(.094 North Valley Chice Install 30 MVA Transformer and Broaker al Dayton Road Sub 2.4 EDP 77/2015 Image: Chice \$ 5,115,302 Image: Chice Starsment Vaca Wile Dixon Image: Chice Starsment S	85	EDRI_093	Stockton	North Stockton 12 kV	Install 30 MVA Transformer and Breaker at Chorokee Sub	2.0	EDP	7/1/2015					5 5,115,392			from page 3-10 line 12
67 EDBL 095 Sacramento Vaccuile Okon Install 45 MVA Transformer and Breaker at Vacu Dixon Sub 1.8 EUP 7/1/2015 Image: Construction of the construct	96	EDRI_094	North Valley	Chico	Install 30 MVA Transformer and Breaker at Dayton Road Sub	2.4	EDP	7/1/2015					\$ 5,115,392			from page 3-10 line 12
Base of the state Urban Bakersfeld Instal 30 MVA Transformer and Broaker at Cal Water Sub 1.7 EDP 7/10015 Source	87	EDRI_095	Sacramento	Vacavillo Dixon	Install 45 MVA Transformer and Breaker at Vaca Dixon Sub	1.8	EDP	7/1/2015					5 5,115,392			from papa 2-10 line 12
B00 Exert Install 30 MVA Transformer at Branker at Call Water Sub 1.7 EDP 7/1/2015 Image: Control of Contro of Control of Control of Control of Control of Control of Contro				Urban Bakersfield	Le la											
an East Bay North Richmond Install 45 MVA Transformer al San Pablo Sub 1.4 EDP 7/1/2016 Control \$ 5,115,302 Form page no LDR4.098 Kern Southwest Install 45 MVA Transformer al Stockdale Sub 0.1 EDP 7/1/2015 5 5 5,115,302 Form page 10 EDR4.098 Kern Southwest Install 45 MVA Transformer and Breaker al Castro Valley Sub 0.5 EDP 7/1/2015 S 5 5,115,302 Form page 10 EDR4.098 Mission Hayward Install 45 MVA Transformer and Breaker al Castro Valley Sub 0.2 EDP 7/1/2016 S 5 5,012,024 form page 12 EDR4.102 Install 45 MVA Transformer and Breaker al Larvis Sub 0.2 EDP 7/1/2016 S 5 5,022,064 from page 12 EDR4.102 Centrel Castro Santa Rosa Install 45 MVA Transformer and Breaker at Claryton Sub 3.4 EDP 7/1/2016 S 5 5 5 5 5 5 5 <td>86</td> <td>CORI_096</td> <td>Kem</td> <td>East</td> <td>Install 30 MVA Transformer and Breaker at Cal Water Sub</td> <td>1.7</td> <td>GDP</td> <td>7/1/2015</td> <td></td> <td></td> <td></td> <td></td> <td>5 6,116,392</td> <td> </td> <td></td> <td>trom page 3-10 line 12</td>	86	CORI_096	Kem	East	Install 30 MVA Transformer and Breaker at Cal Water Sub	1.7	GDP	7/1/2015					5 6,116,392			trom page 3-10 line 12
How Explosion Undern Barkorsteile Undern Barkorsteile Undern Barkorsteile Undern Barkorsteile Install 45 MVA Transformer al Stockdale Sub 0.1 Epp 7/1/2015 Set	00	EDR1_097	East Bay	North Richmond	Install 45 MVA Transformer at San Pablo Sub	1.4	EDP	7/1/2016					<u>⊅ 0,115,302</u>	·		1011 page a-10 (106 12
10 EDRL 028 Kern Southwest Install 45 MVA Transformer at Gosto Vallby Sub 0.7 EDP 7/1/2015 Image: Construct of Construc				Urban Bakerstield	a second second second second second second second											(mm mm 2.10 (m- 10
11 EDXL 099 Mission Hayward Install 45 MVA Transformer of Loratio Voluey Sub 0.0 EDP 7/1/2016 Image: Control Contente Control Contrel Control Control Control Content C	80	EDRI_098	Kern	Southwest	Install 45 MVA Transformer at Stockdale Sub	0,1	EDP	7/1/2015					5 5,115,302			from page 2-10 and 32
20 EDXI, 100 Mission Fromont 12XV Install 36 MVA Transformer and Broaker at Miplita SUB 0.2 EUV 7/1/2010 0	91	EDR1_099	Mission	Hayward	Install 45 MVA Transformer and Breaker at Castro Valley Sup	6,9	EDP	7/1/2015					a 0,110,302	* 5 500 40 4		Mant page 340 line 12
Dial Deptiliant Sanda Rosa Install 45 MVA Transformer at Wolfree Sub 4.4 EDP 7/1/2010 Sanda Rosa Sanda Rosa Sanda Rosa Sanda Rosa Install 45 MVA Transformer at Wolfree Sub 4.4 EDP 7/1/2010 Sanda Rosa Sanda Rosa Sanda Rosa Install 45 MVA Transformer at Molfree Sub 3.4 EDP 7/1/2010 Sanda Rosa Sanda Rosa Install 45 MVA Transformer at Rosa Install 45 MVA Transformer at Rosa Install 45 MVA Transformer at Rosa Sanda Rosa Install 45 MVA Transformer at Rosa Install 45 MVA Transformer at Rosa Sanda Rosa Install 45 MVA Transformer at Rosa Install	82	EDRI_100	Mission	Fremont 12kV	Install 46 MVA Transformer and Broaker at Jarvie Sub	0.2	EDP	7/1/2010						5 0,202,004	~~~~	from page 3-10 line 12
64 EDMI 102 Centrel Caerty Santa Cruz Install 45 MVA Transformer and Broaker 305 3.4 EDP 7/1/2016 3 B_202,604 Omments 65 EDMI 102 Centrel Caerty Santa Cruz Install 45 MVA Transformer and Broaker at Mipitas Sub 3.4 EDP 7/1/2016 5 5202,604 Omments 68 EDMI 104 San Jose Mipitas Install 45 MVA Transformer and Broaker at Mipitas Sub 0.0 EDP 7/1/2016 5 5202,604 from page 69 EDMI 105 Slerra Yuba City Install 30 MVA Transformer at Broaker at Mipitas Sub 0.0 EDP 7/1/2016 5 5202,604 from page 61 EDMI 105 Slerra Yuba City Install 30 MVA Transformer at Back Stockion Sub Fdr EDP 7/1/2016 5 5202,604 from page 61 EDMI 105 Stockion Sub XVA Install 105 MVA Transformer at East Stockion Sub Fdr EDP 7/1/2016 5 5 5202,604 from page 60 EDMI 105 Stockion Sub XVA Install 45 MVA Transformer at East Stockion Sub	03	EDRI_101	North Coast	Santa Rosa	Install 16 MVA 12/21 Transformer al Monroe Sub	4,4	EDP	7/1/2016						5 5,262,604	·····	from pupe 3-10 line 12
55 EDBR_103 Diable Concord Install 45 MVA Transformer and Broaker at Mipilita Silva 0.00 EDW ////2010 0 3 8_202_664 form part 69 EDR1_104 San Joée Miljita's Install 45 MVA Transformer and Broaker at Mipilita Silva 0.00 EDP ////2010 5 6.202_664 form part 67 EDR1_105 Steckton South Stockton 12%V Install 45 MVA Transformer at Broaker at Mipilita Silva 0.0 EDP ////2010 5 6.202_664 form part 68 EDR1_105 Steckton South Stockton 12%V Install 45 MVA Transformer at Broaker at Mipilita Silva Fdr EDP 7///2010 5 6.202_604 form part 68 EDR1_107 Steckton South Stockton 12%V Install 45 MVA Transformer at Broaker at Mantoca Bank #7 #2 EDP 7///2010 \$ 5.202_604 form part 100 EDR1_107 Install 45 MVA Transformer at Mantoca Bank #7 #4 EDP 7///2010 \$ 5.202_604 f	04	EDRI_102	Central Coast	Santa Cruz	Install 45 MVA Transformer at Paul Sweet Sub	3.4	EDP	7/1/2010						a 0,202,004		from page 3-10 lice 12
Build Exercise San Jose Mentions Install 30 MVA Transformer at Beaker at winning and source at winning as backer at winning as b	95	CDR1_103	Diabio	Concord	JINSTALL 45 M VA TRANSFORMER AND BROAKER AT CLAYION SUB	3.4	EUP FOD	777/2010						* B 202 ABA		from nane 3-10 line 12
VF EDX.105 Sterra Yubb Cty Instal 30 w/V4 Transformer of Edat Stockton Sub Per EDP 77/2010 Second Amore part Second Amore part 66 EDX1205 Stockton Svett/Amore part Stockton Svett/Amore	80	EDRI_104	San Jose	wapitas	pristal 45 MVA Transformer and Breaker at wapitas Sdb	0.0	6UP	7/1/2016	<u> </u>					5 8 707 004		fram page 3-10 line 12
BDR_105 Stockton South Stockton 12KV Install 16 MVA Transformer al East Stockton 340 Per EUP C//2010 Stockton Stockton 12KV Install 16 MVA Transformer al East Stockton 340 Per EUP C//2010 Stockton Stockton 12KV Install 16 MVA Transformer al East Stockton 340 Per EUP C//2010 Stockton Stockton 3500 (mm paction 12KV) Stockton 11 (mm paction 12KV) Stockton 12 (mm paction 12KV) <td>07</td> <td>EDRI_105</td> <td>Sierra</td> <td>YUDD City</td> <td>Install 30 MIVA Transformer at Post Stab</td> <td>Por</td> <td>903</td> <td>//1/2016</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td># 0,202,004</td> <td></td> <td>from page 3-10 line 12</td>	07	EDRI_105	Sierra	YUDD City	Install 30 MIVA Transformer at Post Stab	Por	903	//1/2016						# 0,202,004		from page 3-10 line 12
40 EXXL_107 Sterra Ivonn Placer Install 45 MVA Transformer at Mantoen Bank #7 Par LDP 7//2010 Sterra Stera Sterra		EDRI 106	Stockton	South Stockton 12kV	Install to WVA Transformer at East Stockton SUB	For	EDP	7/1/2018						* 0,707,004 * 6,202,004		from page 3-10 line 12
	<u>09</u>	EDRI_107	Sierra	Nonn Placor	Install 15 MVA Transformer at Malsoy Sub	Cat	EDP	7/1/2010						* 0,202,004 * 5,262,884		(mm page 3-10 line 12
	100	108108	Stockton	WIRINGCO T (KV	Instal 45 MVA Tanstomer and Broaker at Mantoca Bank #7	5.01	COP .	miguite		·		24 0.82 425	£ // // // ///	5 47 964 1AR		
							[]			[*		* <u>****************</u>				
MWC 40 E Distr New Capacity - Distribution Substation Banks 5 73.864.200 \$ 98.592.343 \$ 191,126,912 \$ 130.672.300 \$ 160.330.985 \$ 94.728.311 \$ 655.715.952 eum ef l					MWC 48 E Distr New Capacity - Distribution Substation Banks				\$ 73,954,200	\$ 98,592,343	\$ 101,120,912	\$ 130,672.300	\$ 150,830,985	S 04,728,311	\$ 655,715,058	sum of lines 11 to 110

Note: MW Def column was not provided in workpapers but was provided in data responses CCSF 1-9, TURN 7-12

ATTACHMENT V

PG&E – Direct, Chapter 1

Table 1-4 Pacific Gas and Electric Company Total Expenditures and Revenue Requirement (In Millions of Dollars) (Page 1-20)

TABLE 1-4 PACIFIC GAS AND ELECTRIC COMPANY TOTAL EXPENDITURES AND REVENUE REQUIREMENT (IN MILLIONS OF DOLLARS)

Line No.	Work Activities	2009	2010	2011	2012	2013	2014	2015	2016	Total
1	Capital Expenditure Request									
2 3 4	Distribution Capacity Distribution Automation Rural Protective Devices	\$0 	\$55 \$41 \$4	\$188 \$85 \$9	\$254 \$117 \$12	\$262 \$121 \$12	\$241 \$94 \$10	\$188 \$80 \$8	\$136 \$66 \$7	\$1,324 \$605 \$62
5	Total Capital Expenditures	\$0	\$101	\$283	\$384	\$395	\$344	\$277	\$209	\$1,992
6	Expense Request									
7 8 9	Distribution Capacity Distribution Automation Rural Protective Devices		\$0.0 \$0.0 \$0.0	\$0.0 \$1.0 \$0.0	\$0.7 \$3.0 \$0.0	\$1.8 \$5.9 \$0.0	\$2.9 \$9.0 \$0.0	\$4.1 \$11.5 \$0.1	\$5.0 \$13.8 \$0.1	\$14.5 \$44.1 \$0.2
10	Total Expense	-	\$0.0	\$1.0	\$3,8	\$7.7	\$11.9	\$15.6	\$18.9	\$58.9
11	Total CapEx and Expense	\$0	\$101	\$284	\$388	\$403	\$356	\$292	\$228	\$2,051
12	Revenue Requirement	\$0	\$0	\$41	\$98	\$164	\$225	\$276	\$310	\$1,112

Note:

.

The total amounts may differ from the sum of the individual amounts due to rounding.