Report on Various Results of Operations Issues in Pacific Gas and Electric Company's 2015-2017 Gas Transmission & Storage Case

Workpapers of

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on behalf of

The Utility Reform Network and Utility Consumers' Action Network

California Public Utilities Commission

Application 13-12-012

August 11, 2014

SB_GT&S_0346794

INDEX TO WORKPAPERS		
Footnote	**Description**	**Bate #**
1, 26	Table 15-3 on page 15-9 of Chapter 15.	1
2	Title 18 of the Code of Federal Regulations Part 201, Definition 12.	2-3
4, 5, 8-10, 12, 14, 16, 18, 22-24, 27, 35, 40-49, 52, 53, 58-61	PG&E workpaper WP 15-A pages 142-151, 154, 155, 169-174	4-22
6	Depreciation Systems by Frank Wolf and Chester Fitch pages 46 and 47.	23-24
11, 17 , 19-21, 25, 26, 31, 32,	Chapter 15A pages 5-7, 11, 25-27, 37.	25-33
13, 15	PG&E response to TURN 28-10.	34
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TABLE 15-3
PACIFIC GAS AND ELECTRIC COMPANY
WAVG RATE BASE BY GAS TRANSMISSION AND STORAGE UCC
(THOUSANDS OF DOLLARS)

Line No.	UCC	2012	2013	2014	2015
1	Gas Transmission				
2	Gathering (501)	$21,745	$20,868	$26,018	$26,648
3	Local Transmission (520)	999,972	1,137,973	1,369,838	1,528,549
4	Transmission: Northern Path – Line 401 (521)	305,801	288,329	282,497	290,670
5	Transmission: Northern Path – Line 400 (522)	95,257	89,918	112,059	114,423
6	Transmission: Northern Path – Line 2 (523)	22,945	19,467	20,466	20,468
7	Transmission: Southern Path – Line 300 North Milpitas to Panoche (524)	53,683	48,708	61,067	70,222
8	Transmission: Southern Path – Line 300 South Topock to Panoche (525)	188,434	167,772	211,970	240,064
9	Transmission: Bay Area Loop (526)	45,865	46,053	88,288	135,526
10	Customer Access Charge (CAC) (540)	3,666	3,009	3,028	2,014
11	Gas Transmission Total	$1,737,366	$1,822,099	$2,175,231	$2,428,583
12	Gas Storage				
13	Storage Services – McDonald Island (511)	$234,635	$275,156	$299,519	$292,322
14	Storage Services – Los Medanos/ Pleasant Creek (512)	84,655	85,541	92,545	93,087
15	Storage Services – Gill Ranch (513)	63,210	61,255	62,393	58,898
16	Gas Storage Total	$382,500	$421,952	$454,457	$444,307
17	Gas Transmission and Storage Total	$2,119,866	$2,244,051	$2,629,688	$2,872,890

Note: Workpapers RB-1 through RB-4 provide additional supporting detail to the data in this table.

The 2015 forecast WAVG rate base as presented in Chapter 15 testimony and workpapers excludes PSEP investments for 2011-2014. See Chapter 16 for a discussion of the inclusion of PSEP capital investments for 2011-2014 in this case.

The total cumulative increase of $691.2 million in the gas transmission forecast rate base from 2012 to 2015 is mainly attributable to plant growth within UCC 520: Local Transmission. The total cumulative increase of $61.8 million in the gas storage forecast rate base from 2012 to 2015 is mainly attributable to UCC 511. As discussed above, the increase in rate base excludes PSEP capital expenditures through December 31, 2014. Refer to sub-section 3(a) above for a discussion of increases to plant and depreciation reserve.

PG&E's forecast of rate base is reasonable and justified because PG&E:

SUBCHAPTER F—ACCOUNTS, NATURAL GAS ACT

PART 201—UNIFORM SYSTEM OF ACCOUNTS PRESCRIBED FOR NATURAL GAS COMPANIES SUBJECT TO THE PROVISIONS OF THE NATURAL GAS ACT

AUTHORITY: 15 U.S.C. 717–717w, 3301–3432; 42 U.S.C. 7101–7352, 7651–7651o.

SOURCE: Order 219, 25 FR 5616, June 21, 1960, unless otherwise noted.

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting part 201, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

EFFECTIVE DATE NOTE: At 58 FR 18006, April 7, 1993, part 201 was amended by redesignating definitions 31 through 39 as 32 through 40 and adding a new definition 31; Accounts 182.3 and 254 were added under Balance Sheet Accounts; and Accounts 407.3 and 407.4 were added under Income Accounts. The added text contains information collection and recordkeeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

NOTE: Order 141, 12 FR 8504, Dec. 19, 1947, provides in part as follows:

Prescribing a system of accounts for natural gas companies under the Natural Gas Act. The Federal Power Commission acting pursuant to authority granted by the Natural Gas Act (58) Stat. 821, as amended; 15 U.S.C. and Sup. 717 *et seq.*), particularly sections 8(a), 10(a) and 16 thereof, and finding such action necessary and appropriate for carrying out the provisions of said Act, ordered that:

(a) The accompanying system of accounts, entitled "Uniform System of Accounts Prescribed for Natural Gas Companies Subject to the Provisions of the Natural Gas Act," and the rules and regulations contained therein, be adopted;

(b) Said system of accounts and said rules and regulations contained therein be and the same are hereby prescribed and promulgated as the system of accounts and rules and regulations of the Commission to be kept and observed by natural gas companies subject to the jurisdiction of the Commission, to the extent and in the manner set forth therein;

(c) Said system of accounts and rules and regulations therein contained as to all natural gas companies now subject to the jurisdiction of the Commission, became effective on January 1, 1940, and as to any natural gas company which may hereafter become subject to the jurisdiction of the Commission, they shall become effective as of the date when such natural gas company becomes subject to the jurisdiction of the Commission.

Uniform System of Accounts Prescribed for Natural Gas Companies Subject to the Provisions of the Natural Gas Act

Definitions

When used in this system of accounts:

1. *Accounts* means the accounts prescribed in this system of accounts.

2. *Actually issued*, as applied to securities issued or assumed by the utility, means those which have been sold to bona fide purchasers for a valuable consideration, those issued as dividends on stock, and those which have been issued in accordance with contractual requirements direct to trustees of sinking funds.

3. *Actually outstanding*, as applied to securities issued or assumed by the utility, means those which have been actually issued and are neither retired nor held by or for the utility; provided, however, that securities held by trustees shall be considered as actually outstanding.

4. *Amortization* means the gradual extinguishment of an amount in an account by distributing such amount over a fixed period, over the life of the asset or liability to which it applies, or over the period during which it is anticipated the benefit will be realized.

5. A. *Associated (affiliated) companies* means companies or persons that directly or indirectly, through one or more intermediaries, control, or are controlled by, or are under common control with the accounting company.

B. *Control* (including the terms "controlling," "controlled by," and "under common control with") means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a company, whether such power is exercised through one or more intermediary companies, or alone, or in conjunction with, or pursuant to an agreement, and whether such power is established through a majority or minority

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ownership or voting of securities, common directors, officers, or stockholders, voting trusts, holding trusts, associated companies, contract or any other direct or indirect means.

6. *Book cost* means the amount at which property is recorded in these accounts without deduction of related provisions for accrued depreciation, depletion, amortization, or for other purposes.

7. *Commission*, means the Federal Energy Regulatory Commission.

8. *Continuing plant inventory record* means company plant records for retirement units and mass property that provide, as either a single record, or in separate records readily obtainable by references made in a single record, the following information:

A. For each retirement unit;

(1) The name or description of the unit, or both;

(2) The location of the unit;

(3) The date the unit was placed in service;

(4) The cost of the unit as set forth in Plant Instructions 2 and 3 of this part; and

(5) The plant control account to which the cost of the units is charged; and

B. For each category of mass property;

(1) A general description of the property and quantity;

(2) The quantity placed in service by vintage year;

(3) The average cost as set forth in Plant Instructions 2 and 3 of this part; and

(4) The plant control account to which the costs are charged.

9. *Cost* means the amount of money actually paid for property or services. When the consideration given is other than cash in a purchase and sale transaction, as distinguished from a transaction involving the issuance of common stock in a merger or a pooling of interest, the value of such consideration shall be determined on a cash basis.

10. *Cost of removal* means the cost of demolishing, dismantling, tearing down or otherwise removing gas plant, including the cost of transportation and handling incidental thereto. It does not include the cost of removal activities associated with asset retirement obligations that are capitalized as part of the tangible long-lived assets that give rise to the obligation. (See General Instruction 24).

11. *Debt expense* means all expenses in connection with the issuance and initial sale of evidences of debt, such as fees for drafting mortgages and trust deeds; fees and taxes for issuing or recording evidences of debt; cost of engraving and printing bonds and certificates of indebtedness; fees paid trustees; specific costs of obtaining governmental authority; fees for legal services; fees and commissions paid underwriters, brokers, and salesmen for marketing such evidences of debt; fees and expenses of listing on exchanges; and other like costs.

12. A. *Depletion*, as applied to natural gas producing land and land rights, means the loss in service value incurred in connection with the exhaustion of the natural resource in the course of service.

B. *Depreciation*, as applied to depreciable gas plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of gas plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities, and, in the case of natural gas companies, the exhaustion of natural resources.

13. *Development costs*, when used with respect to hydrocarbons, include all costs incurred in the readying of hydrocarbon deposits for commercial production including developmental well drilling costs.

14. *Discount*, as applied to the securities, issued or assumed by the utility, means the excess of the par (stated value of no-par stocks) or fact value of the securities plus interest or dividends accrued at the date of the sale over the cash value of the consideration received from their sale.

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Application: A.13-12-
(U 39 G)
Exhibit No.:
Date: December 19, 2013
Witness: Richard Clarke

PACIFIC GAS AND ELECTRIC COMPANY

2015 GAS TRANSMISSION AND STORAGE RATE CASE

WORKPAPERS SUPPORTING

CHAPTER 15A
DEPRECIATION: SERVICE LIFE AND NET SALVAGE ESTIMATES

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ACCOUNT 367 (FERC) Mains

Asset Classes GTP36700, GTE36700 and GTS36700

This account shall include the cost installed of transmission system mains. Below are examples of retirement units.

Cathodic Protection System
Dike or Embankment
Header, Piping
Main, River Crossing
Pipe Cleaning Machine or Pig Apparatus
Pipeline Lining
Piping
Roadways and Streets
Strainer or Filter
Transmission Main
Trestle
Tunnel
Valve
Valve, Instrument Control

SERVICE LIFE ANALYSIS

Discussion: This is the largest account in the transmission property. Many of the large pipelines were installed in the 1950 and 1960's. Pipeline installed since the 1970's has been better quality with the majority being cathodically protected and coated. The Pipeline Safety Enhancement Program (PSEP) is expected to replace approximately 143 miles of main by the end of 2014. Most pipeline replacements will be pipe that has been in service for over 50 years. PG&E has included a "vintage" pipeline replacement program in the current GT&S rate case that is expected to result in approximately 20 miles replaced per year. There is also a valve replacement program in place where inoperable/ hard to operate valves are being replaced. There has been considerable retirement activity in this account and the actuarial life analysis was relied upon. Data points through age 83.5 were given more consideration for this account as the retirement activity in the past that was minimal and the remaining exposures were under $200,000. The current life and curve for this account is the 45-R1.5. The statistical analysis indicates a longer service life than the approved estimate. Based on experience and the industry the mid-order R curve is common for this property. The life analysis showed average service lives in the 60 to 65 year range for the best fitting mid-mode R curves. The best fitting R curves through the most representative data points were the 63-R1.5 and the 62-R2. The R2 curve is more consistent with the industry and better represents the expectations for retirements based on the PSEP and other programs.

Recommendation: The recent life analysis shows that an increase in service life is warranted for this account. Based on the discussion above, the best fitting life and curve is the 62-R2. This life is in the range for the industry. Recommend a 62-R2 life and curve for this account at this time.

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SALVAGE ANALYSIS

Discussion:

Pipeline that once was retired in place is now being required to be removed. Pipe is also being removed if required by easement or other contract. Removal costs are increasing due to a number of new environmental issues and regulatory costs. Pipeline that is retired in place must be cleared of all bulk liquids, inerted, tested for mercury, cleaned and finally cut and capped. Recently, there is also a requirement for "pipe pigging," in which the pipe is cleaned below an approved threshold before being retired in place. Recently more pipe is being removed than retired in place than was the case in the past. Population growth over the years has led to more costly removal as local agencies require pipe to be removed in these populated areas. An analysis was performed on 22 years of available data for this account 1991-2012. There has been cost of removal and salvage recorded in the last 22 years but there has been considerable cost of removal. The current approved net salvage is negative 15 percent. The overall average for the past 22 years has been negative 49 percent. The most recent years show the net salvage increasing and over negative 100 percent in some years. The five year average is negative 78 percent.

Recommendation:

Based on the analysis that shows considerable cost of removal recorded with retirements for this account the net salvage should be negative. The net salvage for this account appears to be increasing (becoming more negative). The recent years show very high net salvage; at this time we will recommend using negative 50 percent based on the overall average of recorded net salvage. While this is a relatively large increase from the approved negative 15 percent, it is a conservative estimate when compared to the recent activity in this account.

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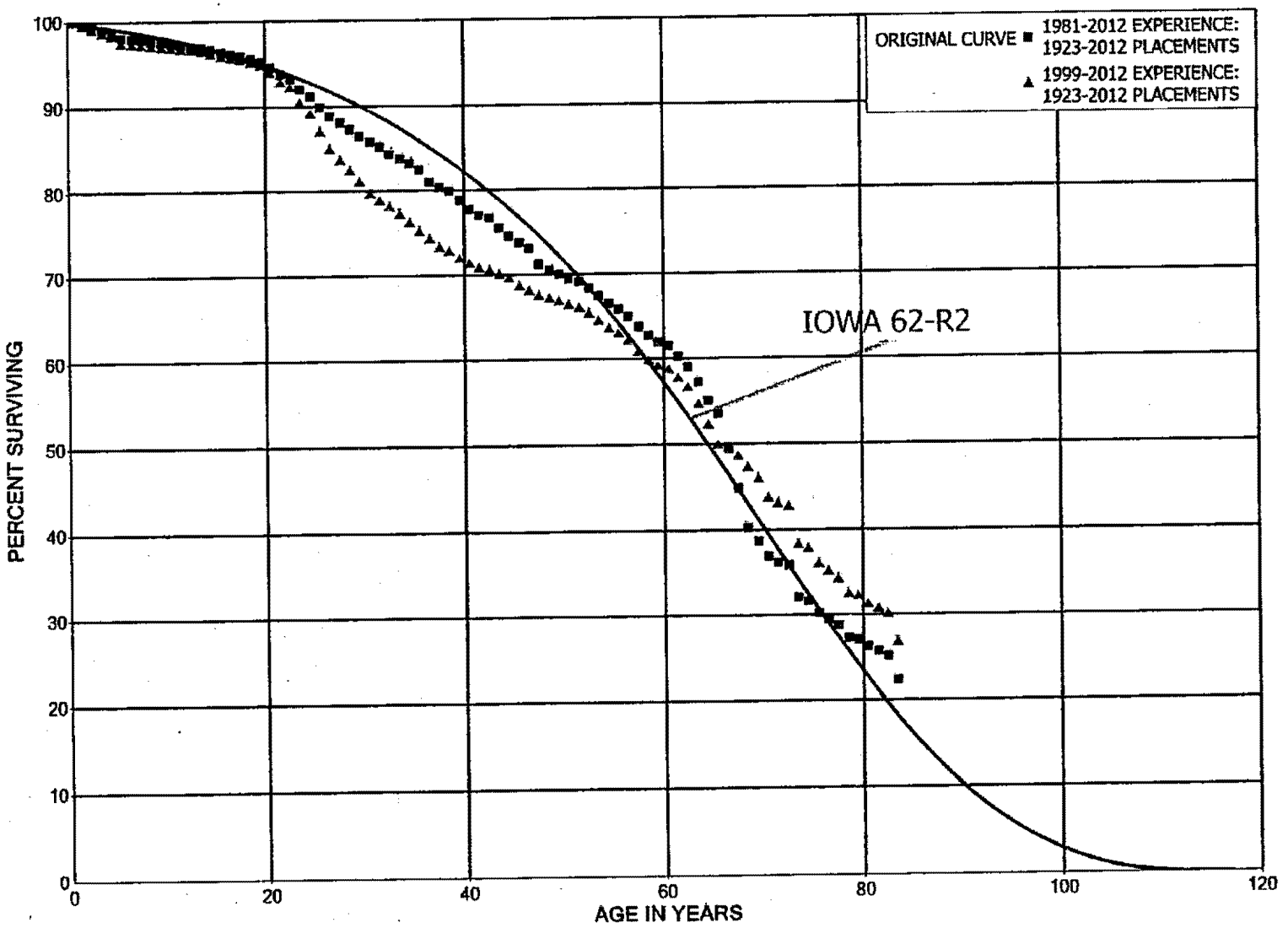
PACIFIC GAS AND ELECTRIC COMPANY
ACCOUNT 367 MAINS
ORIGINAL AND SMOOTH SURVIVOR CURVES



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PACIFIC GAS AND ELECTRIC COMPANY

ACCOUNT 367 MAINS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1923-2012 EXPERIENCE BAND 1981-2012

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	2,362,209,951	2,177,100	0.0009	0.9991	100.00
0.5	2,079,627,502	7,536,634	0.0036	0.9964	99.91
1.5	1,964,307,336	6,178,518	0.0031	0.9969	99.55
2.5	1,836,198,005	4,896,259	0.0027	0.9973	99.23
3.5	1,773,705,924	9,131,333	0.0051	0.9949	98.97
4.5	1,637,558,025	6,006,836	0.0037	0.9963	98.46
5.5	1,582,850,411	2,168,630	0.0014	0.9986	98.10
6.5	1,521,634,724	2,484,698	0.0016	0.9984	97.96
7.5	1,463,440,746	2,502,335	0.0017	0.9983	97.80
8.5	1,431,093,127	2,419,223	0.0017	0.9983	97.64
9.5	1,399,692,901	1,674,910	0.0012	0.9988	97.47
10.5	1,334,362,685	2,899,648	0.0022	0.9978	97.35
11.5	1,306,833,351	2,051,267	0.0016	0.9984	97.14
12.5	1,296,943,964	1,922,424	0.0015	0.9985	96.99
13.5	1,291,952,837	3,571,115	0.0028	0.9972	96.85
14.5	1,279,018,014	4,378,880	0.0034	0.9966	96.58
15.5	1,271,572,449	2,633,797	0.0021	0.9979	96.25
16.5	1,256,671,643	2,917,374	0.0023	0.9977	96.05
17.5	1,241,349,425	3,699,169	0.0030	0.9970	95.83
18.5	1,226,023,941	4,231,611	0.0035	0.9965	95.54
19.5	679,193,104	4,974,456	0.0073	0.9927	95.21
20.5	647,145,311	5,669,507	0.0088	0.9912	94.51
21.5	617,797,874	3,294,018	0.0053	0.9947	93.68
22.5	587,718,363	8,025,981	0.0137	0.9863	93.19
23.5	533,044,136	4,543,715	0.0085	0.9915	91.91
24.5	487,161,890	6,720,431	0.0138	0.9862	91.13
25.5	450,085,427	5,433,424	0.0121	0.9879	89.87
26.5	411,790,618	3,596,303	0.0087	0.9913	88.79
27.5	401,872,589	3,300,425	0.0082	0.9918	88.01
28.5	386,153,630	3,310,420	0.0086	0.9914	87.29
29.5	375,626,791	3,101,376	0.0083	0.9917	86.54
30.5	410,154,421	2,805,119	0.0068	0.9932	85.83
31.5	399,617,661	3,907,501	0.0098	0.9902	85.24
32.5	386,460,796	2,463,398	0.0064	0.9936	84.41
33.5	381,250,401	2,621,275	0.0069	0.9931	83.87
34.5	372,383,746	3,476,786	0.0093	0.9907	83.29
35.5	362,977,660	6,500,175	0.0179	0.9821	82.51
36.5	351,846,546	2,696,135	0.0077	0.9923	81.04
37.5	345,169,121	2,099,088	0.0061	0.9939	80.41
38.5	339,559,016	4,719,180	0.0139	0.9861	79.93

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PACIFIC GAS AND ELECTRIC COMPANY

ACCOUNT 367 MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1923-2012 EXPERIENCE BAND 1981-2012

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	331,899,685	4,730,065	0.0143	0.9857	78.82
40.5	320,047,045	2,407,360	0.0075	0.9925	77.69
41.5	312,185,543	1,674,279	0.0054	0.9946	77.11
42.5	302,749,396	4,709,545	0.0156	0.9844	76.69
43.5	293,004,660	3,846,899	0.0131	0.9869	75.50
44.5	282,666,070	3,070,510	0.0109	0.9891	74.51
45.5	272,308,011	2,238,124	0.0082	0.9918	73.70
46.5	257,399,171	6,907,174	0.0268	0.9732	73.09
47.5	234,780,108	2,416,789	0.0103	0.9897	71.13
48.5	225,647,858	1,610,315	0.0071	0.9929	70.40
49.5	220,876,222	1,508,844	0.0068	0.9932	69.90
50.5	212,665,099	1,225,274	0.0058	0.9942	69.42
51.5	161,645,339	1,676,330	0.0104	0.9896	69.02
52.5	156,654,572	2,069,393	0.0132	0.9868	68.31
53.5	150,611,921	1,975,280	0.0131	0.9869	67.40
54.5	131,347,512	1,287,885	0.0098	0.9902	66.52
55.5	109,410,980	1,441,626	0.0132	0.9868	65.87
56.5	100,555,726	1,922,449	0.0191	0.9809	65.00
57.5	96,678,391	1,626,461	0.0168	0.9832	63.76
58.5	80,083,770	942,295	0.0118	0.9882	62.68
59.5	63,927,051	470,741	0.0074	0.9926	61.95
60.5	61,761,183	1,189,250	0.0193	0.9807	61.49
61.5	58,211,194	1,212,482	0.0208	0.9792	60.31
62.5	22,440,460	665,386	0.0297	0.9703	59.05
63.5	13,762,426	536,173	0.0390	0.9610	57.30
64.5	10,985,432	301,925	0.0275	0.9725	55.07
65.5	10,339,142	809,558	0.0783	0.9217	53.55
66.5	8,941,506	821,729	0.0919	0.9081	49.36
67.5	7,900,083	814,525	0.1031	0.8969	44.82
68.5	6,775,306	259,643	0.0383	0.9617	40.20
69.5	6,103,325	280,251	0.0459	0.9541	38.66
70.5	5,319,924	109,677	0.0206	0.9794	36.89
71.5	4,723,089	43,423	0.0092	0.9908	36.13
72.5	4,624,056	486,304	0.1052	0.8948	35.79
73.5	3,824,136	44,506	0.0116	0.9884	32.03
74.5	3,502,051	165,394	0.0472	0.9528	31.66
75.5	3,295,080	78,140	0.0237	0.9763	30.16
76.5	2,955,056	77,687	0.0263	0.9737	29.45
77.5	2,732,527	140,540	0.0514	0.9486	28.67
78.5	2,572,617	25,178	0.0098	0.9902	27.20

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PACIFIC GAS AND ELECTRIC COMPANY

ACCOUNT 367 MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1923-2012 EXPERIENCE BAND 1981-2012

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	2,436,321	69,557	0.0286	0.9714	26.93
80.5	2,306,859	44,077	0.0191	0.9809	26.16
81.5	1,628,862	37,066	0.0228	0.9772	25.66
82.5	868,628	96,669	0.1113	0.8887	25.08
83.5	133,883	11,413	0.0852	0.9148	22.29
84.5	51,428	1,204	0.0234	0.9766	20.39
85.5	48,586	3,262	0.0671	0.9329	19.91
86.5	19,698	1,235	0.0627	0.9373	18.57
87.5	18,463	1,582	0.0857	0.9143	17.41
88.5	10	10	1.0000		15.92
89.5					

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PACIFIC GAS AND ELECTRIC COMPANY

ACCOUNT 367 MAINS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1923-2012 EXPERIENCE BAND 1999-2012

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	1,156,658,661	172,327	0.0001	0.9999	100.00
0.5	887,319,760	4,933,094	0.0056	0.9944	99.99
1.5	794,092,164	4,365,688	0.0055	0.9945	99.43
2.5	680,969,694	2,982,654	0.0044	0.9956	98.88
3.5	632,565,983	2,788,340	0.0044	0.9956	98.45
4.5	519,886,483	4,276,506	0.0082	0.9918	98.02
5.5	1,065,972,039	1,153,005	0.0011	0.9989	97.21
6.5	1,033,216,138	1,220,854	0.0012	0.9988	97.10
7.5	1,001,929,537	1,220,319	0.0012	0.9988	96.99
8.5	1,014,969,074	1,261,924	0.0012	0.9988	96.87
9.5	1,056,007,804	929,250	0.0009	0.9991	96.75
10.5	1,037,383,056	2,109,519	0.0020	0.9980	96.67
11.5	1,042,117,972	1,359,559	0.0013	0.9987	96.47
12.5	1,080,712,981	1,240,895	0.0011	0.9989	96.34
13.5	1,097,534,137	3,128,661	0.0029	0.9971	96.23
14.5	1,091,811,100	3,847,691	0.0035	0.9965	95.96
15.5	1,079,626,738	2,060,649	0.0019	0.9981	95.62
16.5	1,070,620,415	2,308,165	0.0022	0.9978	95.44
17.5	1,069,206,662	3,256,191	0.0030	0.9970	95.23
18.5	1,058,841,351	3,707,018	0.0035	0.9965	94.94
19.5	457,883,092	4,356,878	0.0095	0.9905	94.61
20.5	430,984,397	5,012,435	0.0116	0.9884	93.71
21.5	406,382,747	2,668,386	0.0066	0.9934	92.62
22.5	361,474,786	7,260,385	0.0201	0.9799	92.01
23.5	287,131,784	3,757,878	0.0131	0.9869	90.16
24.5	237,444,999	5,792,618	0.0244	0.9756	88.98
25.5	203,351,617	4,609,078	0.0227	0.9773	86.81
26.5	153,119,776	2,333,516	0.0152	0.9848	84.84
27.5	131,341,234	1,990,484	0.0152	0.9848	83.55
28.5	123,476,391	1,982,530	0.0161	0.9839	82.29
29.5	117,257,292	2,082,213	0.0178	0.9822	80.96
30.5	113,260,141	1,104,671	0.0098	0.9902	79.53
31.5	101,282,974	1,052,046	0.0104	0.9896	78.75
32.5	101,539,697	1,117,683	0.0110	0.9890	77.93
33.5	115,200,656	1,536,705	0.0133	0.9867	77.08
34.5	114,197,377	1,718,242	0.0150	0.9850	76.05
35.5	114,128,770	1,268,013	0.0111	0.9889	74.90
36.5	117,273,037	1,616,460	0.0138	0.9862	74.07
37.5	163,543,921	1,084,315	0.0066	0.9934	73.05
38.5	161,979,890	1,892,973	0.0117	0.9883	72.57

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PACIFIC GAS AND ELECTRIC COMPANY

ACCOUNT 367 MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1923-2012 EXPERIENCE BAND 1999-2012

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	161,013,179	1,326,071	0.0082	0.9918	71.72
40.5	171,442,422	1,128,064	0.0066	0.9934	71.13
41.5	186,458,986	1,003,928	0.0054	0.9946	70.66
42.5	185,625,098	1,281,476	0.0069	0.9931	70.28
43.5	181,710,628	1,164,544	0.0064	0.9936	69.79
44.5	190,959,792	2,536,432	0.0133	0.9867	69.35
45.5	197,426,102	1,722,384	0.0087	0.9913	68.42
46.5	185,095,756	1,366,588	0.0074	0.9926	67.83
47.5	170,640,936	915,141	0.0054	0.9946	67.33
48.5	202,531,052	1,064,900	0.0053	0.9947	66.97
49.5	205,532,791	1,383,407	0.0067	0.9933	66.61
50.5	198,996,034	1,028,553	0.0052	0.9948	66.17
51.5	147,513,391	1,564,902	0.0106	0.9894	65.82
52.5	143,456,849	1,958,816	0.0137	0.9863	65.12
53.5	138,135,817	1,807,828	0.0131	0.9869	64.24
54.5	119,806,258	1,096,094	0.0091	0.9909	63.40
55.5	98,684,285	1,267,737	0.0128	0.9872	62.82
56.5	90,792,555	1,854,120	0.0204	0.9796	62.01
57.5	87,557,533	1,457,903	0.0167	0.9833	60.74
58.5	71,203,553	773,540	0.0109	0.9891	59.73
59.5	55,703,943	395,952	0.0071	0.9929	59.08
60.5	53,925,336	966,992	0.0179	0.9821	58.66
61.5	50,651,609	988,400	0.0195	0.9805	57.61
62.5	15,481,260	538,336	0.0348	0.9652	56.49
63.5	7,229,068	321,641	0.0445	0.9555	54.52
64.5	4,700,156	213,132	0.0453	0.9547	52.10
65.5	4,309,277	33,835	0.0079	0.9921	49.73
66.5	3,785,431	75,000	0.0198	0.9802	49.34
67.5	4,817,728	128,751	0.0267	0.9733	48.37
68.5	5,565,861	163,929	0.0295	0.9705	47.07
69.5	5,862,719	277,597	0.0473	0.9527	45.69
70.5	5,181,087	76,888	0.0148	0.9852	43.52
71.5	4,619,319	43,260	0.0094	0.9906	42.88
72.5	4,574,427	472,686	0.1033	0.8967	42.48
73.5	3,788,125	44,506	0.0117	0.9883	38.09
74.5	3,498,816	165,394	0.0473	0.9527	37.64
75.5	3,295,080	78,140	0.0237	0.9763	35.86
76.5	2,955,056	77,687	0.0263	0.9737	35.01
77.5	2,732,527	140,540	0.0514	0.9486	34.09
78.5	2,572,617	25,178	0.0098	0.9902	32.34

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PACIFIC GAS AND ELECTRIC COMPANY

ACCOUNT 367 MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1923-2012 EXPERIENCE BAND 1999-2012

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	2,436,321	69,557	0.0286	0.9714	32.02
80.5	2,306,859	44,077	0.0191	0.9809	31.11
81.5	1,628,862	37,066	0.0228	0.9772	30.51
82.5	868,628	96,669	0.1113	0.8887	29.82
83.5	133,883	11,413	0.0852	0.9148	26.50
84.5	51,428	1,204	0.0234	0.9766	24.24
85.5	48,586	3,262	0.0671	0.9329	23.67
86.5	19,698	1,235	0.0627	0.9373	22.08
87.5	18,463	1,582	0.0857	0.9143	20.70
88.5	10	10	1.0000		18.92
89.5					

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PACIFIC GAS AND ELECTRIC COMPANY

ACCOUNT 367 MAINS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
1991	694,767	456,365	66	441-	0	456,806-	66-
1992	1,981,605	746,040	38	605	0	745,435-	38-
1993	10,345,858	550,472	5	200-	0	550,672-	5-
1994	3,845,812	315,414	8	1,008	0	314,406-	8-
1995	1,493,837	320,389	21	91,067-	6-	411,456-	28-
1996	1,665,379	123,391	7		0	123,391-	7-
1997	2,371,210	1,509,664	64		0	1,509,664-	64-
1998	1,287,559	1,790,162	139		0	1,790,162-	139-
1999	3,252,139	1,757,825	54	104,835-	3-	1,862,660-	57-
2000	16,283,948	1,557,086	10		0	1,557,086-	10-
2001	5,589,312	3,397,014	61		0	3,397,014-	61-
2002	4,409,299	3,554,326	81	207,012	5	3,347,314-	76-
2003	7,743,305	6,124,306	79	150,007-	2-	6,274,313-	81-
2004	15,940,221	2,062,611	13		0	2,062,611-	13-
2005	7,967,370	2,674,318	34		0	2,674,318-	34-
2006	4,055,958	1,447,191	36	16,500	0	1,430,691-	35-
2007	11,378,491	3,566,333	31		0	3,566,333-	31-
2008	16,941,710	2,511,621	15	580,942	3	1,930,679-	11-
2009	3,154,299	3,461,832	110		0	3,461,832-	110-
2010	2,971,321	3,391,142	114		0	3,391,142-	114-
2011	18,435,936	12,882,345	70		0	12,882,345-	70-
2012	17,503,999	24,480,525	140		0	24,480,525-	140-
TOTAL	159,313,334	78,680,372	49	459,517	0	78,220,855-	49-
THREE-YEAR MOVING AVERAGES							
91-93	4,340,743	584,292	13	12-	0	584,304-	13-
92-94	5,391,092	537,309	10	471	0	536,838-	10-
93-95	5,228,502	395,425	8	30,086-	1-	425,511-	8-
94-96	2,335,009	253,065	11	30,020-	1-	283,084-	12-
95-97	1,843,475	651,148	35	30,356-	2-	681,504-	37-
96-98	1,774,716	1,141,072	64		0	1,141,072-	64-
97-99	2,303,636	1,685,884	73	34,945-	2-	1,720,829-	75-
98-00	6,941,215	1,701,691	25	34,945-	1-	1,736,636-	25-
99-01	8,375,133	2,237,308	27	34,945-	0	2,272,253-	27-
00-02	8,760,853	2,836,142	32	69,004	1	2,767,138-	32-
01-03	5,913,972	4,358,549	74	19,002	0	4,339,547-	73-
02-04	9,364,275	3,913,748	42	19,002	0	3,894,746-	42-
03-05	10,550,299	3,620,412	34	50,002-	0	3,670,414-	35-
04-06	9,321,183	2,061,373	22	5,500	0	2,055,873-	22-
05-07	7,800,606	2,562,614	33	5,500	0	2,557,114-	33-

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PACIFIC GAS AND ELECTRIC COMPANY

ACCOUNT 367 MAINS

CALCULATION OF COMPOSITE REMAINING LIFE
AS OF DECEMBER 31, 2012

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	REM. LIFE (6)	--FUTURE ACCRUALS-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 62-R2							
1968	7,104,359.31	62.00	1.61	114,380.18	26.92	0.4342	3,084,642
1969	5,117,522.31	62.00	1.61	82,392.11	27.56	0.4445	2,274,841
1970	8,237,090.61	62.00	1.61	132,617.16	28.21	0.4550	3,747,876
1971	6,122,215.31	62.00	1.61	98,567.67	28.87	0.4657	2,850,810
1972	7,222,236.79	62.00	1.61	116,278.01	29.53	0.4763	3,439,879
1973	3,749,427.62	62.00	1.61	60,365.78	30.21	0.4873	1,826,946
1974	4,581,402.51	62.00	1.61	73,760.58	30.89	0.4982	2,282,592
1975	4,786,056.69	62.00	1.61	77,055.51	31.58	0.5094	2,437,778
1976	5,619,387.95	62.00	1.61	90,472.15	32.28	0.5207	2,925,734
1977	6,624,800.12	62.00	1.61	106,659.28	32.98	0.5319	3,523,996
1978	7,495,936.32	62.00	1.61	120,684.57	33.69	0.5434	4,073,217
1979	3,925,553.80	62.00	1.61	63,201.42	34.41	0.5550	2,178,682
1980	13,703,788.57	62.00	1.61	220,631.00	35.14	0.5668	7,766,896
1981	19,585,835.76	62.00	1.61	315,331.96	35.87	0.5786	11,331,385
1982	11,244,864.86	62.00	1.61	181,042.32	36.61	0.5905	6,639,868
1983	10,775,172.09	62.00	1.61	173,480.27	37.36	0.6026	6,492,903
1984	14,971,289.64	62.00	1.61	241,037.76	38.11	0.6147	9,202,552
1985	26,562,889.06	62.00	1.61	427,662.51	38.87	0.6269	16,653,338
1986	53,681,821.56	62.00	1.61	864,277.33	39.64	0.6394	34,321,473
1987	33,263,759.56	62.00	1.61	535,546.53	40.41	0.6518	21,680,321
1988	51,248,679.44	62.00	1.61	825,103.74	41.19	0.6644	34,047,060
1989	72,791,203.46	62.00	1.61	1,171,938.38	41.98	0.6771	49,286,924
1990	48,943,559.68	62.00	1.61	787,991.31	42.77	0.6898	33,763,225
1991	29,063,892.47	62.00	1.61	467,928.67	43.57	0.7027	20,424,360
1992	30,452,462.28	62.00	1.61	490,284.64	44.37	0.7157	21,793,305
1993	18,328,216.57	62.00	1.61	295,084.29	45.18	0.7287	13,355,955
1994	22,573,800.84	62.00	1.61	363,438.19	46.00	0.7419	16,748,406
1995	19,512,634.03	62.00	1.61	314,153.41	46.82	0.7552	14,735,161
1996	18,958,556.91	62.00	1.61	305,232.77	47.64	0.7684	14,567,566
1997	21,099,017.35	62.00	1.61	339,694.18	48.47	0.7818	16,494,579
1998	25,034,818.28	62.00	1.61	403,060.57	49.31	0.7953	19,910,692
1999	12,191,158.18	62.00	1.61	196,277.65	50.15	0.8089	9,861,062
2000	17,808,713.16	62.00	1.61	286,720.28	51.00	0.8226	14,649,091
2001	31,403,466.48	62.00	1.61	505,595.81	51.86	0.8365	26,267,430
2002	37,638,512.53	62.00	1.61	605,980.05	52.71	0.8502	31,998,758
2003	36,637,777.51	62.00	1.61	589,868.22	53.58	0.8642	31,662,001
2004	38,233,227.89	62.00	1.61	615,554.97	54.44	0.8781	33,571,068
2005	58,678,821.70	62.00	1.61	944,729.03	55.32	0.8923	52,356,765
2006	63,675,670.31	62.00	1.61	1,025,178.29	56.19	0.9063	57,708,623
2007	54,741,410.01	62.00	1.61	881,336.70	57.07	0.9205	50,388,373
2008	130,233,701.38	62.00	1.61	2,096,762.59	57.96	0.9348	121,747,673
2009	67,294,405.14	62.00	1.61	1,083,439.92	58.85	0.9492	63,875,176

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PACIFIC GAS AND ELECTRIC COMPANY

ACCOUNT 367 MAINS

CALCULATION OF COMPOSITE REMAINING LIFE
AS OF DECEMBER 31, 2012

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	REM. LIFE	--FUTURE ACCRUALS-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 62-R2							
2010	131,161,853.29	62.00	1.61	2,111,705.84	59.75	0.9637	126,401,990
2011	113,827,191.59	62.00	1.61	1,832,617.78	60.64	0.9781	111,329,823
2012	297,093,454.13	62.00	1.61	4,783,204.61	61.55	0.9927	294,936,556
	1,952,417,021.34			31,433,914.03			1,514,487,605
	COMPOSITE REMAINING LIFE, YEARS..					48.18	

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ACCOUNT 369 (FERC) Measuring and Regulating Station Equipment

Asset Classes GTP36900, GTE36900 and GTS36900

This account shall include the cost installed of meters, gauges and other equipment used in measuring or regulating gas in connection with transmission system operations. Below are examples of retirement units.

Cathodic Protection System
Dehydrator
Fan, Forced Draft
Fan, Induced Draft
Fire Protection System
Foundation
Header, Piping
Heating and Thawing System
Manhole
Meter
Odorizer
Orifice
Control Equipment

SERVICE LIFE ANALYSIS

Discussion: There has been considerable retirement activity in this account and the actuarial life analysis was relied upon. Data points through age 67.5 were given more consideration for this account as the retirement activity past that was minimal and the remaining exposures were under $100,000. The current life and curve for this account is 29-R0.5 which appears low for this property. Based on experience and the industry the low to mid-order R curve is typical for this property. The statistical analysis showed good fitting curves with average service lives that exceeded 45 years. However, 45 years is the upper end of the lives that are typical in the industry and represents an increase of 16 years over the existing estimate.

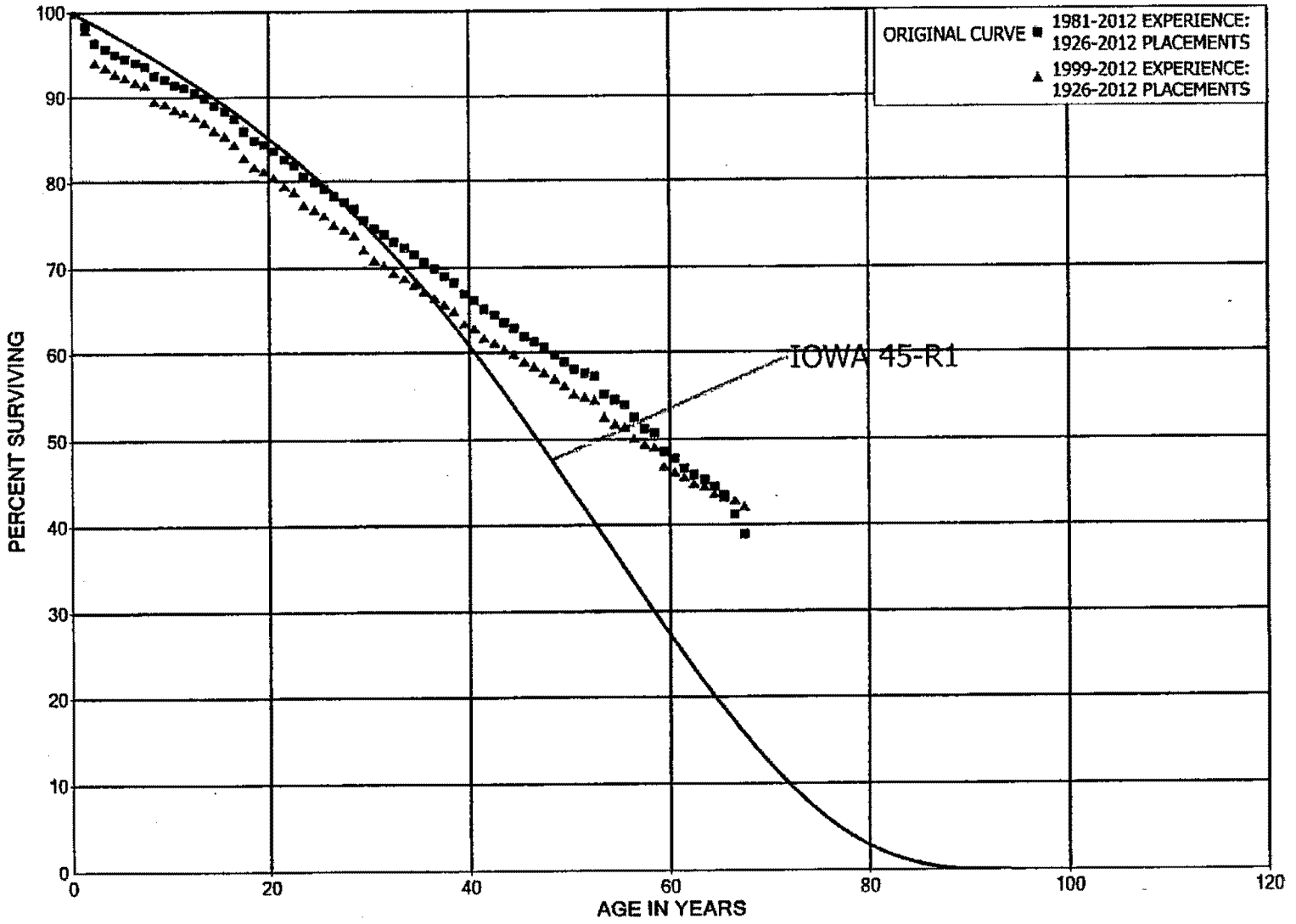
Recommendation: The more recent analysis indicates a longer service life than the approved. The 45-R1 represents a reasonable fit of earlier ages and represents a significant increase over the approved estimate. This life is in the range for the industry but is in the upper end of the range. Recommend a 45-R1 life and curve for this account at this time.

SALVAGE ANALYSIS

Discussion: An analysis was performed on 22 years of available data for this account, 1991-2012. There has been cost of removal and some salvage recorded in the last 22 years but there has been considerable cost of removal. The current approved net salvage is negative 1 or zero percent depending on the asset class. The overall average for the past 22 years has been negative 57 percent. The most recent years show more negative net salvage, and the most recent five year average is negative 136 percent.

Recommendation: Based on the analysis that does show considerable cost of removal recorded with retirements for this account the net salvage should be negative. The net salvage for this account appears to be increasing (becoming more negative). The recent years show very high net salvage; at this time we will recommend increasing net salvage to negative 20 percent. While this represents an increase from the approved net salvage estimate, it is conservative when compared to the recent activity for this account.

PACIFIC GAS AND ELECTRIC COMPANY
ACCOUNT 369 MEASURING AND REGULATING STATION EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



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PACIFIC GAS AND ELECTRIC COMPANY

ACCOUNT 369 MEASURING AND REGULATING STATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1926-2012 EXPERIENCE BAND 1981-2012

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	239,072,940	420,806	0.0018	0.9982	100.00
0.5	219,970,919	3,046,046	0.0138	0.9862	99.82
1.5	210,132,853	4,466,739	0.0213	0.9787	98.44
2.5	189,963,832	1,175,373	0.0062	0.9938	96.35
3.5	170,586,767	1,232,013	0.0072	0.9928	95.75
4.5	164,561,884	871,599	0.0053	0.9947	95.06
5.5	154,426,410	851,002	0.0055	0.9945	94.56
6.5	151,966,063	715,049	0.0047	0.9953	94.04
7.5	148,101,357	1,775,784	0.0120	0.9880	93.59
8.5	141,680,799	683,719	0.0048	0.9952	92.47
9.5	134,324,065	890,589	0.0066	0.9934	92.03
10.5	130,850,616	441,729	0.0034	0.9966	91.42
11.5	127,395,402	822,509	0.0065	0.9935	91.11
12.5	124,480,230	879,539	0.0071	0.9929	90.52
13.5	123,171,209	1,232,763	0.0100	0.9900	89.88
14.5	120,723,026	912,041	0.0076	0.9924	88.98
15.5	117,905,704	1,193,407	0.0101	0.9899	88.31
16.5	115,589,003	1,917,648	0.0166	0.9834	87.41
17.5	112,155,452	1,428,943	0.0127	0.9873	85.96
18.5	107,329,397	651,602	0.0061	0.9939	84.87
19.5	96,966,969	903,356	0.0093	0.9907	84.35
20.5	89,369,563	990,291	0.0111	0.9889	83.57
21.5	82,273,383	738,687	0.0090	0.9910	82.64
22.5	60,773,721	975,610	0.0161	0.9839	81.90
23.5	48,956,961	373,187	0.0076	0.9924	80.58
24.5	40,916,493	389,922	0.0095	0.9905	79.97
25.5	38,123,656	456,033	0.0120	0.9880	79.21
26.5	34,560,579	293,973	0.0085	0.9915	78.26
27.5	30,879,604	294,326	0.0095	0.9905	77.59
28.5	27,759,002	487,219	0.0176	0.9824	76.86
29.5	25,766,004	336,364	0.0131	0.9869	75.51
30.5	24,119,566	233,013	0.0097	0.9903	74.52
31.5	22,373,903	264,213	0.0118	0.9882	73.80
32.5	21,405,349	192,146	0.0090	0.9910	72.93
33.5	20,473,908	230,656	0.0113	0.9887	72.27
34.5	19,692,311	227,417	0.0115	0.9885	71.46
35.5	18,805,653	214,359	0.0114	0.9886	70.64
36.5	17,196,470	220,339	0.0128	0.9872	69.83
37.5	15,383,024	178,994	0.0116	0.9884	68.94
38.5	14,818,411	279,238	0.0188	0.9812	68.13

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PACIFIC GAS AND ELECTRIC COMPANY

ACCOUNT 369 MEASURING AND REGULATING STATION EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1926-2012 EXPERIENCE BAND 1981-2012

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	14,228,512	171,027	0.0120	0.9880	66.85
40.5	12,451,482	194,644	0.0156	0.9844	66.05
41.5	11,920,596	108,635	0.0091	0.9909	65.01
42.5	11,327,944	163,964	0.0145	0.9855	64.42
43.5	10,766,150	114,668	0.0107	0.9893	63.49
44.5	10,279,581	151,589	0.0147	0.9853	62.81
45.5	9,462,581	91,323	0.0097	0.9903	61.89
46.5	8,385,820	98,379	0.0117	0.9883	61.29
47.5	7,303,381	100,959	0.0138	0.9862	60.57
48.5	6,911,116	89,595	0.0130	0.9870	59.73
49.5	5,723,666	90,479	0.0158	0.9842	58.96
50.5	5,115,588	37,232	0.0073	0.9927	58.03
51.5	4,812,284	27,433	0.0057	0.9943	57.60
52.5	4,537,147	164,110	0.0362	0.9638	57.28
53.5	4,089,613	54,354	0.0133	0.9867	55.20
54.5	3,502,009	32,365	0.0092	0.9908	54.47
55.5	2,901,918	78,682	0.0271	0.9729	53.97
56.5	2,502,692	65,066	0.0260	0.9740	52.50
57.5	2,157,618	17,430	0.0081	0.9919	51.14
58.5	1,641,491	71,730	0.0437	0.9563	50.73
59.5	1,393,159	23,400	0.0168	0.9832	48.51
60.5	1,255,382	28,616	0.0228	0.9772	47.69
61.5	948,489	15,378	0.0162	0.9838	46.61
62.5	720,372	8,256	0.0115	0.9885	45.85
63.5	373,418	6,336	0.0170	0.9830	45.33
64.5	257,634	6,276	0.0244	0.9756	44.56
65.5	203,656	10,958	0.0538	0.9462	43.47
66.5	142,146	8,036	0.0565	0.9435	41.13
67.5	97,876	406	0.0042	0.9958	38.81
68.5	87,904	9,808	0.1116	0.8884	38.65
69.5	76,627	4,566	0.0596	0.9404	34.33
70.5	72,061	973	0.0135	0.9865	32.29
71.5	71,088	445	0.0063	0.9937	31.85
72.5	70,643	779	0.0110	0.9890	31.65
73.5	69,863	5,511	0.0789	0.9211	31.30
74.5	64,353	6,183	0.0961	0.9039	28.83
75.5	58,170	39	0.0007	0.9993	26.06
76.5	58,131	741	0.0128	0.9872	26.05
77.5	57,390	1,140	0.0199	0.9801	25.71
78.5	56,250	5,509	0.0979	0.9021	25.20

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PACIFIC GAS AND ELECTRIC COMPANY

ACCOUNT 369 MEASURING AND REGULATING STATION EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1926-2012 EXPERIENCE BAND 1981-2012

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	50,742	10,962	0.2160	0.7840	22.74
80.5	39,780	12,811	0.3221	0.6779	17.82
81.5	26,968	22,372	0.8296	0.1704	12.08
82.5	4,596		0.0000	1.0000	2.06
83.5	4,596	5	0.0011	0.9989	2.06
84.5	4,591		0.0000	1.0000	2.06
85.5	4,591	4,591	1.0000		2.06
86.5					

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PACIFIC GAS AND ELECTRIC COMPANY

ACCOUNT 369 MEASURING AND REGULATING STATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1926-2012 EXPERIENCE BAND 1999-2012

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	120,182,865	13,330	0.0001	0.9999	100.00
0.5	102,818,662	2,311,037	0.0225	0.9775	99.99
1.5	96,266,963	3,809,462	0.0396	0.9604	97.74
2.5	77,417,594	519,694	0.0067	0.9933	93.87
3.5	62,012,171	491,981	0.0079	0.9921	93.24
4.5	59,389,469	257,751	0.0043	0.9957	92.50
5.5	58,147,575	359,448	0.0062	0.9938	92.10
6.5	63,156,949	228,803	0.0036	0.9964	91.53
7.5	67,106,527	1,389,014	0.0207	0.9793	91.20
8.5	81,490,467	365,395	0.0045	0.9955	89.31
9.5	86,533,616	651,951	0.0075	0.9925	88.91
10.5	91,978,357	244,546	0.0027	0.9973	88.24
11.5	91,961,701	621,075	0.0068	0.9932	88.01
12.5	93,992,620	686,972	0.0073	0.9927	87.41
13.5	96,182,432	1,073,043	0.0112	0.9888	86.78
14.5	96,126,456	766,362	0.0080	0.9920	85.81
15.5	95,913,839	1,047,327	0.0109	0.9891	85.12
16.5	95,477,930	1,779,225	0.0186	0.9814	84.19
17.5	92,956,148	1,265,872	0.0136	0.9864	82.62
18.5	89,107,950	510,971	0.0057	0.9943	81.50
19.5	79,765,918	785,859	0.0099	0.9901	81.03
20.5	72,912,217	872,878	0.0120	0.9880	80.23
21.5	66,375,953	594,469	0.0090	0.9910	79.27
22.5	45,829,843	856,356	0.0187	0.9813	78.56
23.5	35,058,274	260,818	0.0074	0.9926	77.10
24.5	27,120,619	252,697	0.0093	0.9907	76.52
25.5	24,518,118	340,552	0.0139	0.9861	75.81
26.5	22,025,267	156,344	0.0071	0.9929	74.76
27.5	18,660,091	172,112	0.0092	0.9908	74.23
28.5	16,109,030	378,387	0.0235	0.9765	73.54
29.5	14,184,598	236,097	0.0166	0.9834	71.81
30.5	12,888,845	107,432	0.0083	0.9917	70.62
31.5	11,617,191	148,391	0.0128	0.9872	70.03
32.5	11,664,699	103,822	0.0089	0.9911	69.13
33.5	11,850,558	133,897	0.0113	0.9887	68.52
34.5	11,595,313	143,250	0.0124	0.9876	67.75
35.5	12,048,039	126,526	0.0105	0.9895	66.91
36.5	11,241,137	144,738	0.0129	0.9871	66.21
37.5	9,776,223	115,540	0.0118	0.9882	65.35
38.5	9,570,890	204,229	0.0213	0.9787	64.58

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$$Y = a_0 + a_1X + a_2X^2 + a_3X^3 + \ldots + a_nX^n$$

Standard regression techniques and computer programs can be used to find the regression coefficients a_i. Although this technique works well for smoothing, the polynomial function should only be used with great care to extrapolate data. In *Statistical Theory with Engineering Applications* Abraham Hald (1952:559) states, "From a purely statistical point of view the regression curve provides a description of the interrelation between the two variables within the limited range of the observations, and extrapolations, i.e., computations or values outside this range are in principle not justifiable as perhaps it is not possible to represent the interrelation outside the observed range by the function utilized. It is therefore absolutely necessary that extrapolation be firmly based on professional knowledge concerning the data." A polynomial curve may not be a good function to use for the difficult task of extrapolation.

If the Iowa curves are adopted as a model, an underlying assumption is that the process describing the retirement pattern is one of the 22 processes described by the Iowa curves. The problem is then to decide which specific type of Iowa curve "best" fits the observed data. *Best* can take on different meanings, each with subtle differences; here it will refer to the curve that most accurately represents the observed data.

One method is to fit the data visually. Until recently, this required a set of curves printed on translucent paper. Printed on each sheet is a family of a specific type Iowa curve. Each member of the family represents a different average life, typically running from 10 to 50 years in steps of 2 years. Traditionally these curves were scaled to 4 years/inch and 10% surviving/inch, but sets of curves scaled to one-half or double this size were also common. These scales can be multiplied or divided by a constant to accommodate observed data with very long or very short lives. If, for example, the observed curve had an average life of about 80 years, the scale could be doubled so that the curves would run from 20 to 100 years. The observed curve was plotted on graph paper using the same scale, and a translucent sheet of paper with the printed curves was then placed over the observed curve, allowing the analyst to compare visually the empirical and observed curves.

After plotting the observed curve, the analyst should first visually examine the plotted data to make an initial judgment about the type curves that may be good fits. The analyst also must decide which points or sections of the curve should be given the most weight. Points at the end of the curve are often based on fewer exposures and may be given less weight than points based on larger samples. The weight placed on those points will depend on the size of the exposures. Often the middle section of the curve (that section ranging from approximately 80% to 20% surviving) is given

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more weight than the first and last sections. This middle section is relatively straight and is the portion of the curve that often best characterizes the survivor curve.

Begin fitting with the left modal curves and identify the two or three curves that appear to best fit the data. Note the curve type and the corresponding average life, which is typically estimated to the nearest year. Continue with the symmetrical, right modal, and origin modal curves. Some groups may not give a suitable fit.

Continue by reexamining the contenders selected during the first pass. Often the choice between two or three tentative selections is difficult to make. The conservative choice is toward the lower life and right modal curve.

An alternative to visual fitting is mathematical fitting. Usually the least squares method is used. This method is time consuming if done by hand, and is not practical unless a computer is used. Typical logic for a computer program is as follows. First a type curve is arbitrarily selected. If the observed curve goes to zero percent surviving, calculate the area under the curve and designate this the average life.

If the observed curve is a stub curve (i.e., if it does not go to zero), calculate the area under the curve and up to the age at final data point. Call this area the *realized life*. Then systematically vary the average life of the theoretical survivor curve and calculate its realized life at the age corresponding to the study date. This trial and error procedure ends when you find an average life such that the realized life of the theoretical curve equals the realized life of the observed curve. Call this the *average life*.

Once the average life is found, calculate the difference between each percent surviving point on the observed survivor curve and the corresponding point on the Iowa curve. Square each difference and sum them. The sum of squares is used as a measure of goodness of fit for that particular Iowa type curve. This procedure is repeated for the remaining 21 Iowa type curves. The "best fit" is declared to be the type of curve that minimizes the sum of differences squared.

On the surface, the removal of judgment from the fitting process may appear to be an advantage, but blind acceptance of mechanical fitting processes will occasionally but consistently result in poor results. A better procedure is to use the least squares method to select candidates for the best fit. Comparison of the sum of squares will reveal situations where the difference between the best choices is small. The analyst should then visually examine the observed data and compare them to the theoretical curves. This can be done quickly on a computer with graphic capabilities so that the analyst need not use time to plot the observed curve by hand. The analyst can consider single points that may contribute significantly to the sum of squares but that may deserve less weight than other points. Fits at

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PACIFIC GAS AND ELECTRIC COMPANY

CHAPTER 15A

DEPRECIATION: SERVICE LIFE AND NET SALVAGE ESTIMATES

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shape of a curve called a survivor curve. Different types of plant assets exhibit different patterns or survivor curves. Since a survivor curve represents actual lives of all of the assets in the group, an ASL of the group can be readily calculated from the survivor curve for the group.

PG&E's plant is grouped in various accounts or asset classes. For most of the asset classes, PG&E provided continuous records of retirements from 1923 to 2012. In this case retirements were identified by their original installation dates from 1999 through 2012, prior to that retirements were developed by installation year using a statistical aging program which will be described later in the testimony. This data was then analyzed through the use of a methodology known as the Annual Rate Method or the Actuarial method to develop survivor factors including average service lives and survivor curves by account. This process is described later in this testimony. Factors considered in the selection of a survivor curve include accuracy and sufficiency of available data, conformance of data to selected curve, published industry data for similar assets, current maintenance practice, and the judgment and experience of field personnel and project engineers.

As an example of how all these factors are considered in determining the life and curve for an asset class, consider FERC Account 367 for gas transmission mains. The actuarial analysis based on recorded data indicates a service life of 60-62 years for this account. The estimate from the last rate case was 45 years; however as part of the Pipeline Safety Enhancement Plan (Docket No. 11-02-019) the CPUC ordered that PG&E use 65 years until a complete life analysis could be completed. Life analysis indicates a lengthening of the life of mains from the last study. I propose an average service life for gas transmission mains of 62 years, based on my analysis.

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TABLE PGE-15A-1
PACIFIC GAS AND ELECTRIC COMPANY
GAS TRANSMISSION AND STORAGE
ESTIMATED SURVIVOR CURVE, NET SALVAGE, ORIGINAL COST, BOOK RESERVE AND
CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT IN SERVICE AS OF DECEMBER 31, 2012

	Original Cost	Net Salvage Pct.	Net Salvage Amount	Book Reserve	Future Accruals	Survivor Curve	Remaining Life	Annual Accrual Amount	Annual Accrual Rate
	(1)	(2)	(3) = (1) x (2)	(4)	(5) = (1) - (3) - (4)	(6)	(7)	(8) = (5) / (7)	(9) = (8) / (1)
GAS PLANT									
Intangible Plant									
303.02 Miscellaneous Intangible Plant	582,516	0	-	196,698	385,818	40 - SQ	20.50	18,820	3.23
Total Intangible Plant	582,516		-	196,698	385,818			18,820	3.23
Underground Storage Plant									
351.1 Structures and Improvements - Well	4,580,751	(5)	(229,038)	2,666,495	2,143,294	50 - R2	31.16	68,784	1.50
351.2 Compressor Station Structures	8,018,224	(5)	(400,811)	3,903,102	4,513,933	50 - R2	33.84	133,390	1.66
351.3 Measuring and Regulating Station Structures	10,953,333	(5)	(547,667)	7,465,061	4,035,939	50 - R2	27.56	146,442	1.34
351.4 Other Storage Structures	6,105,948	(5)	(305,297)	1,894,947	4,515,298	35 - R2	24.14	187,088	3.06
352 Wells	195,965,630	(15)	(29,384,845)	66,637,054	158,723,421	45 - R2	32.67	4,858,384	2.48
353 Lines	98,956,003	(50)	(49,478,002)	27,237,121	121,196,884	55 - R3	43.81	2,766,421	2.80
354 Compressor Station Equipment	98,797,704	(10)	(9,879,770)	30,445,776	78,231,698	35 - R1	29.80	2,625,225	2.66
355 Measuring and Regulating Equipment	75,427,937	(15)	(11,314,190)	30,523,771	56,218,356	45 - R2.5	33.88	1,659,338	2.20
356 Purification Equipment	58,107,056	(5)	(2,905,353)	26,048,404	34,964,005	45 - R3	33.02	1,058,874	1.82
357 Other Equipment	10,463,161	(10)	(1,046,316)	2,754,995	8,754,482	28 - R1.5	21.00	416,880	3.98
Total Underground Storage Plant	567,373,747		(105,501,289)	199,576,726	473,298,310			13,920,825	2.45
Transmission Plant (excluding Line 401 and Stanpac)									
366.1 Compressor Station Structures	24,263,285	(5)	(1,213,164)	14,073,788	11,402,662	50 - R2	31.38	363,374	1.50
366.2 Measuring and Regulating Station Structures	12,843,811	(5)	(647,191)	5,327,324	8,263,678	50 - R2	37.38	221,072	1.71
366.3 Other Transmission System Structures	21,337,406	(5)	(1,066,870)	8,183,160	14,221,117	40 - R2	26.42	538,271	2.52
367 Mains	1,952,417,021	(50)	(976,208,511)	700,639,893	2,227,985,639	62 - R2	48.18	46,242,956	2.37
368 Compressor Station Equipment	385,582,263	(15)	(57,834,339)	189,956,485	253,440,118	40 - R2	29.91	8,473,424	2.20
369 Measuring and Regulating Station Equipment	225,230,079	(20)	(45,046,016)	74,689,561	195,586,533	45 - R1	34.52	5,665,690	2.52
371 Other Equipment	55,995,948	(10)	(5,599,595)	24,371,068	37,224,475	50 - R1.5	38.84	958,406	1.71
Total Transmission Plant (excluding Line 401 and Stanpac)	2,677,749,815		(1,087,515,686)	1,017,241,278	2,748,124,223			62,463,393	2.33
Transmission Plant - Line 401									
366.1 Compressor Station Structures	10,076,051	(5)	(503,803)	4,203,591	6,376,263	50 - R2	34.44	185,141	1.84
366.2 Measuring and Regulating Station Structures	1,066,352	(5)	(53,318)	632,230	487,439	50 - R2	33.43	14,581	1.37
366.3 Other Transmission System Structures	781,877	(5)	(39,094)	299,100	521,871	40 - R2	28.00	18,638	2.38
367 Mains	639,540,812	(50)	(319,770,406)	292,480,510	666,830,709	62 - R2	45.88	14,534,235	2.27
368 Compressor Station Equipment	122,830,244	(15)	(18,424,537)	80,696,864	60,557,917	40 - R2	26.48	2,286,930	1.86
369 Measuring and Regulating Station Equipment	5,936,009	(20)	(1,187,202)	3,414,009	3,709,200	45 - R1	31.61	117,343	1.98
Total Transmission Plant - Line 401	780,231,345		(339,978,358)	381,726,305	738,483,399			17,156,868	2.20

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TABLE PGE-15A-1
PACIFIC GAS AND ELECTRIC COMPANY
GAS TRANSMISSION AND STORAGE
ESTIMATED SURVIVOR CURVE, NET SALVAGE, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT IN SERVICE AS OF DECEMBER 31, 2012
(CONTINUED)

	Original Cost	Net Salvage Pct.	Net Salvage Amount	Book Reserve	Future Accruals	Survivor Curve	Remaining Life	Annual Accrual Amount	Annual Accrual Rate
	(1)	(2)	(3) = (1) x (2)	(4)	(5) = (1) - (3) - (4)	(6)	(7)	(8) = (5) / (7)	(9) = (8) / (1)
Transmission Plant - Stanpac									
366.1 Compressor Station Structures	40,571	(5)	(2,029)	-	42,600	50 - R2	49.55	860	2.12
366.2 Measuring and Regulating Station Structures	88,735	(5)	(4,437)	56,730	36,442	50 - R2	33.25	1,096	1.24
366.3 Other Transmission System Structures	27,170	(5)	(1,369)	22,787	5,742	40 - R2	15.31	375	1.38
367 Mains	30,773,890	(50)	(15,386,945)	11,465,536	34,695,300	62 - R2	48.24	719,223	2.34
369 Measuring and Regulating Station Equipment	5,150,625	(20)	(1,030,125)	3,284,754	2,895,996	45 - R1	29.64	97,706	1.90
370 Communication Equipment	87,386	0	-	62,597	24,789	15 - SQ	9.50	2,609	2.99
371 Other Equipment	297,210	(10)	(29,721)	303,685	23,246	50 - R1.5	19.86	1,170	0.39
Total Transmission Plant - Stanpac	36,465,588		(16,454,615)	16,196,089	37,724,114			823,039	2.26
General Plant - Line 401									
390 Structures and Improvements	22,287,361	(10)	(2,228,736)	9,233,708	15,282,389	40 - R3	26.63	576,042	2.58
391 Office Furniture and Equipment	1,054,160	0	-	464,686	589,474	20 - SQ	8.59	68,623	6.51
394 Tools, Shop and Work Equipment	902,029	0	-	119,236	782,793	25 - SQ	21.20	36,924	4.09
395 Laboratory Equipment	606,725	0	-	99,714	507,012	20 - SQ	16.32	31,067	5.12
396 Power Operated Equipment	466,856	20	93,371	2,361	371,124	14 - L2	13.51	27,470	5.88
398 Miscellaneous Equipment	8,161,979	0	-	5,821,981	2,339,998	20 - SQ	1.62	1,444,443	17.70
399 Other Tangible Property	1,845,536	0	-	1,218,506	627,031	20 - SQ	1.50	418,020	22.65
Total General Plant - Line 401	35,324,646		(2,135,365)	16,960,182	20,499,819			2,602,590	7.37
General Plant - Stanpac									
391 Office Furniture and Equipment	6,515	0	-	6,630	(115)	20 - SQ	-	-	-
392.1 Transportation Equipment - Licensed	27,477	10	2,748	27,477	(2,748)	9 - S2.5	-	-	-
392.2 Transportation Equipment - Non-licensed	11,562	10	1,156	11,562	(1,156)	9 - S2.5	-	-	-
393 Stores Equipment	1,074	0	-	1,145	(71)	20 - SQ	-	-	-
394 Tools, Shop and Work Equipment	11,602	0	-	12,107	(505)	25 - SQ	2.55	-	-
395 Laboratory Equipment	1,537	0	-	1,635	(98)	20 - SQ	-	-	-
398 Miscellaneous Equipment	15,773	0	-	14,852	921	20 - SQ	2.50	368	2.34
Total General Plant - Stanpac	75,540		3,904	75,408	(3,772)			368	0.49
TOTAL GAS PLANT	4,097,803,187		(1,661,681,409)	1,630,972,685	4,018,511,911			95,985,904	2.37

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available. The SPR Method is used when retirements by installation year are not known or available. The SPR Method can be used to simulate either plant balances or plant retirements. In past rate cases the SPR Method using simulated plant balances was used in the depreciation studies. During the depreciation study it was determined that data is available which enabled us to develop actuarial data from 1999-2012. Data prior to 1999 was aged using a statistical aging program developed to age portions or parts of a data base that are not readily available in the required format. The actuarial method is preferred over the SPR Method because actual company retirement history is being used in the analysis rather than simulated retirement activity. Both methods use survivor curves to estimate ASL.

The survivor curve graphically depicts the amount of property existing at each age throughout the life of an original group. From the survivor curve, the average life of the group, the remaining life expectancy, the probable life, and the frequency curve can be calculated. In Figure 15A-3 a typical smooth survivor curve and the derived curves are illustrated. The average life is obtained by calculating the area under the survivor curve, from age zero to the maximum age, and dividing this area by the ordinate at age zero. The remaining life expectancy at any age can be calculated by obtaining the area under the curve, from the observation age to the maximum age, and dividing this area by the percent surviving at the observation age. For example, in Figure 15A-3 the remaining life at age 30 years is equal to the cross-hatched area under the survivor curve divided by 29.5 percent surviving at age 30. The probable life at any age is developed by adding the age and remaining life. If the probable life of the property is calculated for each year of age, the probable life curve shown in the chart can be developed. The frequency curve presents the number of units retired in each age interval, and is derived by obtaining the differences between the amount of property surviving at the beginning and at the end of each interval.

For the entire experience band 2003-2012, the total exposures at the beginning of an age interval are obtained by summing diagonally in a manner similar to the summing of the retirements during an age interval (Schedule 1). For example, the figure of 3,789, shown as the total exposures at the beginning of age interval $4^1/_2$-$5^1/_2$, is obtained by summing:

255 + 268 + 284 + 311 + 334 + 374 + 405 + 448 + 501 + 609

Original Life Table. The original life table, illustrated in Schedule 4 on page 15A-26, is developed from the totals shown on the schedules of retirements and exposures, Schedules 1 and 3, respectively. The exposures at the beginning of the age interval are obtained from the corresponding age interval of the exposure schedule, and the retirements during the age interval are obtained from the corresponding age interval of the retirement schedule. The retirement ratio is the result of dividing the retirements during the age interval by the exposures at the beginning of the age interval. The percent surviving at the beginning of each age interval is derived from survivor ratios, each of which equals one minus the retirement ratio. The percent surviving is developed by starting with 100% at age zero and successively multiplying the percent surviving at the beginning of each interval by the survivor ratio, i.e., one minus the retirement ratio for that age interval. The calculations necessary to determine the percent surviving at age $5^1/_2$ are as follows:

Percent surviving at age $4^1/_2$	=	88.15
Exposures at age $4^1/_2$	=	3,789,000
Retirements from age $4^1/_2$ to $5^1/_2$	=	143,000
Retirement Ratio	=	143,000 ÷ 3,789,000 = 0.0377
Survivor Ratio	=	1.000 - 0.0377 = 0.9623
Percent surviving at age $5^1/_2$	=	(88.15) x (0.9623) = 84.83

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SCHEDULE 4. ORIGINAL LIFE TABLE
CALCULATED BY THE RETIREMENT RATE METHOD

Experience Band 2003-2012 Placement Band 1998-2012

(Exposure and Retirement Amounts are in Thousands of Dollars)

Age at Beginning of Interval (1)	Exposures at Beginning of Age Interval (2)	Retirements During Age Interval (3)	Retirement Ratio (4)	Survivor Ratio (5)	Percent Surviving at Beginning of Age Interval (6)
0.0	7,490	80	0.0107	0.9893	100.00
0.5	6,579	153	0.0233	0.9767	98.93
1.5	5,719	151	0.0264	0.9736	96.62
2.5	4,955	150	0.0303	0.9697	94.07
3.5	4,332	146	0.0337	0.9663	91.22
4.5	3,789	143	0.0377	0.9623	88.15
5.5	3,057	131	0.0429	0.9571	84.83
6.5	2,463	124	0.0503	0.9497	81.19
7.5	1,952	113	0.0579	0.9421	77.11
8.5	1,503	105	0.0699	0.9301	72.65
9.5	1,097	93	0.0848	0.9152	67.57
10.5	823	83	0.1009	0.8991	61.84
11.5	531	64	0.1205	0.8795	55.60
12.5	323	44	0.1362	0.8638	48.90
13.5	167	26	0.1557	0.8443	42.24
					35.66
Total	44,780	1,606			

Column 2 from Schedule 3, Column 12, Plant Exposed to Retirement.
Column 3 from Schedule 1, Column 12, Retirements for Each Year.
Column 4 = Column 3 divided by Column 2.
Column 5 = 1.0000 minus Column 4.
Column 6 = Column 5 multiplied by Column 6 as of the Preceding Age Interval.

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The totals of the exposures and retirements (columns 2 and 3) are shown for the purpose of checking with the respective totals in Schedules 1 and 3. The ratio of the total retirements to the total exposures, other than for each age interval, is meaningless.

The original survivor curve is plotted from the original life table (column 6, Schedule 4). When the curve terminates at a percent surviving greater than zero, it is called a stub survivor curve. Survivor curves developed from retirement rate studies generally are stub curves.

Smoothing the Original Survivor Curve. The smoothing of the original survivor curve eliminates any irregularities and serves as the basis for the preliminary extrapolation to zero percent surviving of the original stub curve. Even if the original survivor curve is complete from 100% to zero percent, it is desirable to eliminate any irregularities, as there is still an extrapolation for the vintages which have not yet lived to the age at which the curve reaches zero percent. In this study, the smoothing of the original curve with established type curves was used to eliminate irregularities in the original curve.

The Iowa type curves are used in this study to smooth those original stub curves which are expressed as percents surviving at ages in years. Each original survivor curve was compared to the Iowa curves using visual and mathematical matching in order to determine the better fitting smooth curves. In Figures 6, 7, and 8, the original curve developed in Schedule 4 is compared with the L, S, and R Iowa type curves which most nearly fit the original survivor curve. In Figure 6, the L1 curve with an average life between 12 and 13 years appears to be the best fit. In Figure 7, the S0 type curve with a 12-year average life appears to be the best fit and appears to be better than the L1 fitting. In Figure 8, the R1 type curve with a 12-year average life appears to be the best fit and appears to be better than either the L1 or the S0. In Figure 9, the three fittings, 12-L1, 12-S0 and 12-R1 are drawn for comparison purposes. It is probable that the 12-R1 Iowa curve would be selected as the most representative of the plotted survivor characteristics of the group, assuming no contrary relevant factors external to the analysis of historical data.

of removal and decreasing gross salvage. The overall average for the period 2003-2012 is negative 10 percent net salvage. However, more recent averages, specifically, the 3-year average for the period 2010-2012 and the 5-year average for the period 2008-2012, have decreased from negative 5 percent in 2003-2005 to negative 12 percent currently.

Cost of removal has increased as a percentage of the original cost retired from slightly greater than 10 percent in the late 2000s to approximately 15 percent in the past several years. Gross salvage has decreased from 6 percent of original cost to 3 percent of original cost. The net of the recent levels, as noted previously, is negative 12 percent.

From the life analysis example previously discussed, the average age of the retirements during the period 2003-2012 was 5.8 years and the ASL estimate is 12 years. The average age of future retirements will be in excess of 12 years, which is significantly greater than the historical average of 5.8 years. Thus, it is reasonable to expect that the trend of increasing cost of removal as a percentage of original cost will continue. Based on the survivor curve estimate for this example account discussed earlier in the life analysis section, the current surviving plant will be retired over the next 25 years. Given the trend in removal cost and the future impact of increasing age and inflation, it is reasonable to project average future cost of removal of 20 percent of the original cost retired. Gross salvage may increase as a percentage of original cost to approximately 5 percent for the same reasons. This logic supports a future net salvage percentage of negative 15 percent in comparison to the recent indications of negative 12 percent. In the absence of any contrary relevant factors external to the historical analysis, a net salvage estimate of negative 12 to negative 15 percent is reasonable.

F. Account-by-Account Analysis and Recommendations

Chapter 15A workpapers support Chapter 15A, and provide account-by-account analysis of historical data for each account, give the statistical indication of ASL and net salvage based on these historical data, give the range of values for these parameters in the industry, provide insights obtained from PG&E's engineering and field personnel, and include final account-by-account recommended parameters.

000033

SB_GT&S_0346828

PACIFIC GAS AND ELECTRIC COMPANY
Gas Transmission and Storage Rate Case 2015
Application 13-12-012
Data Response

PG&E Data Request No.:	TURN_028-10		
PG&E File Name:	GTS-RateCase2015_DR_TURN_028-Q10		
Request Date:	July 7, 2014	Requester DR No.:	TURN-28
Date Sent:	July 21, 2014	Requesting Party:	The Utility Reform Network
PG&E Witness:	C. Richard Clarke	Requester:	Bob Finkelstein/Jack Pous

QUESTION 10

[Data] – Please provide a copy of all industry data reviewed as part of the life and salvage selection process, including the name of the utility, docket number, jurisdiction, date of study, and whether the regulator adopted the value. If PG&E believes it would be unduly burdensome to provide a copy of all such data, please provide a copy of the three sources of industry data that PG&E's witness reviewed or relied upon most heavily as part of the life and salvage selection process. The information should be provided on electronic medium in Excel readable format. Finally, demonstrate and support how and why the industry data provides meaningful support for the proposal presented by account.

ANSWER 10

Please refer to the response to GTS-RateCase2015_DR_ORA_049-Q01 for industry information reviewed by Mr. Clarke. The names of companies listed are included in Attachment GTS-RateCase2015_DR_ORA_049-Q01Atch01; however, they are proprietary and Gannett Fleming cannot identify the specific parameters proposed for each Company. Additionally, Gannett Fleming does not track the final authorized parameters for each case in which it has been involved; therefore, the requested information is not available in the format requested. For studies that were included in rate cases the requested information should be available from the respective commission websites. The industry data was simply used as a review and comparison of the results of the depreciation study for net salvage and useful life parameters.

SB_GT&S_0346829

PACIFIC GAS AND ELECTRIC COMPANY
Gas Transmission and Storage Rate Case 2015
Application 13-12-012
Data Response

PG&E Data Request No.:	ORA_049-01		
PG&E File Name:	GTS-RateCase2015_DR_ORA_049-Q01		
Request Date:	May 22, 2014	Requester DR No.:	ORA-GT&S-49
Date Sent:	June 6, 2014	Requesting Party:	Office of Ratepayer Advocates
PG&E Witness:	C. Richard Clarke	Requester:	Matthew Karle/ Nathaniel Skinner

SUBJECT: DEPRECIATION

QUESTION 1

For every natural gas transportation general rate case in which consultant Gannett-Fleming has provided analysis on the subject of depreciation in the past 10 years please provide the following:

a) Company name.

b) Recommended Average Service Life for each FERC account included in both the rate case in question and PG&E's 2014 GT&S.

c) Authorized Average Service Life for each FERC account included in both the rate case in question and PG&E's 2014 GT&S.

d) Recommended net salvage rate for each FERC account included in both the rate case in question and PG&E's 2014 GT&S.

e) Authorized net salvage rate for each FERC account included in both the rate case in question and PG&E's 2014 GT&S.

ANSWER 1

a)-e) In this request, ORA refers to "PG&E's 2014 GT&S." PG&E assumes ORA meant to refer to "PG&E's 2015 GT&S Rate Case" and provides its response based on this assumption.

Please refer to GTS-RateCase2015_DR_ORA_049-Q01Atch01 for a file containing recommended average service lives, survivor curves, and net salvage estimates proposed by Gannett Fleming for various clients in the past 10 years for the FERC accounts included in PG&E's 2015 GT&S. The names of companies listed are included in the attachment; however, they are proprietary and Gannett Fleming cannot identify the specific parameters proposed for each Company. Additionally, Gannett Fleming does not track the final authorized parameters for each case in which it has been involved, and so the requested information is not available. For studies that were included in rate cases, the requested information should be available from the respective commission websites.

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ORA-49-01
Attachment 1
is Voluminous

000039

PACIFIC GAS AND ELECTRIC COMPANY
Gas Transmission and Storage Rate Case 2015
Application 13-12-012
Data Response

PG&E Data Request No.:	TURN_028-26		
PG&E File Name:	GTS-RateCase2015_DR_TURN_028-Q26		
Request Date:	July 7, 2014	Requester DR No.:	TURN-28
Date Sent:	July 21, 2014	Requesting Party:	The Utility Reform Network
PG&E Witness:	C. Richard Clarke	Requester:	Bob Finkelstein/Jack Pous

QUESTION 26

[Account 367] – Please identify which of the two original life tables for Account 367 – Mains is given greater consideration in the curve fitting process. Further, provide all support and justification for giving greater consideration to either of the original life tables and/or portions of such original life tables in the curve fitting process in sufficient detail to permit replication of the results.

ANSWER 26

Both original life tables were given similar consideration for the curve fitting process for this account. The more recent band (1999-2012) includes the Company's data that was not statistically aged, and also provides a more current indication of the impact of pipeline programs. The overall band (1981-2012) was given consideration as it represents a longer period of time.

PACIFIC GAS AND ELECTRIC COMPANY
Gas Transmission and Storage Rate Case 2015
Application 13-12-012
Data Response

PG&E Data Request No.:	TURN_028-27		
PG&E File Name:	GTS-RateCase2015_DR_TURN_028-Q27		
Request Date:	July 7, 2014	Requester DR No.:	TURN-28
Date Sent:	July 18, 2014	Requesting Party:	The Utility Reform Network
PG&E Witness:	C. Richard Clarke	Requester:	Bob Finkelstein/Jack Pous

QUESTION 27

[Account 367] – Please state whether in PG&E's view it is more important to match the original life tables for Account 367 – Mains with a standard Iowa Survivor curve between 80% to 60% surviving or between 40% to 20% surviving. Further, provide all support and justification for the response.

ANSWER 27

In Mr. Clarke's judgment, the 62-R2 survivor curve shown on page WP 15A-144 provides the best representation of the future service life characteristics for this account. The 62-R2 anticipates somewhat fewer retirements in the 20 to 50 year age range (around 80% surviving to around 60% surviving) than are reflected in the original life tables shown for this account, and anticipates that the future experience will be a closer match to the points from around age 50 to around age 80 (around 60% surviving to around 25% surviving). This later portion of the curve provides a good indication that retirements will likely tend to increase as the assets age, and therefore provide more meaningful information regarding the appropriate curve type than earlier portions of the curve. The service life expectations for this account are also consistent with information external to the statistical analysis, such as factors discussed on page WP 15A-142.

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PACIFIC GAS AND ELECTRIC COMPANY
Gas Transmission and Storage Rate Case 2015
Application 13-12-012
Data Response

PG&E Data Request No.:	TURN_028-43		
PG&E File Name:	GTS-RateCase2015_DR_TURN_028-Q43		
Request Date:	July 7, 2014	Requester DR No.:	TURN-28
Date Sent:	July 28, 2014	Requesting Party:	The Utility Reform Network
PG&E Witness:	C. Richard Clarke/ Charles M. Marre	Requester:	Bob Finkelstein/Jack Pous

QUESTION 43

[Account 369] – Please identify what retired and what caused the retirements in age brackets beginning with ages 0.5 through 3.5, 7.5, 13.5, and 15.5 through 17.5 years for Account 369 – Measuring and Regulating Station Equipment for both the 1981 and 1999 through 2012 experience bands.

ANSWER 43

The age brackets requested include retirements from numerous work orders. A listing of retirements by transaction year and vintage year can be found in GTS-RateCase2015_DR_TURN_028-Q11Atch01. For retirements that occurred prior to 1999, the vintage year was determined using a statistical aging procedure based on historical gross retirements and additions. For retirements that occurred subsequent to 1998, the larger retirements were related to projects related to the replacement of metering and regulating equipment and odorization equipment at various M&R stations. Mr. Clarke reviewed retirements recorded for these age brackets during the depreciation study and incorporated this review as a part of the informed judgment involved in the estimation of service life for this account.

000039

SB_GT&S_0346834

PACIFIC GAS AND ELECTRIC COMPANY
Gas Transmission and Storage Rate Case 2015
Application 13-12-012
Data Response

PG&E Data Request No.:	TURN_028-09		
PG&E File Name:	GTS-RateCase2015_DR_TURN_028-Q09		
Request Date:	July 7, 2014	Requester DR No.:	TURN-28
Date Sent:	July 22, 2014	Requesting Party:	The Utility Reform Network
PG&E Witness:	Charles M. Marre	Requester:	Bob Finkelstein/Jack Pous

QUESTION 9

[Data] – Please provide the categorization of investment retired by year for the past 10 years, by account or subaccount, along with the corresponding dollar value of the annual retirements. The information should be provided on electronic medium in Excel readable format.

ANSWER 9

Please refer to GTS-RateCase2015_DR_TURN_028-Q09Atch01 for the categorization of investment retired by year for the past 10 years, by account or subaccount, along with the corresponding dollar value of the annual retirements in excel.

000040

SB_GT&S_0346835

Adds and Retires Report

Asset Class		Component	Retirements
GTE36800	Trans/PEP: Compressor Station Equipment	Trans/PEP: Compressor Station Equipment	$ (2,443,773.29)
GTP36610	Trans Plant: Compressor Station Structures	Trans Plant: Compressor Station Structures	$ (1,616,213.50)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 22 In.	$ (8,546,089.86)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 12 In.	$ (1,557,640.58)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 34 In.	$ (1,489,744.27)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 24 In.	$ (1,305,514.69)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 10 In.	$ (839,567.66)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 6 In.	$ (793,143.63)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 8 In.	$ (622,297.29)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 16 In.	$ (441,298.48)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 36 In.	$ (319,676.49)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 20 In.	$ (214,239.89)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 4 In.	$ (35,983.08)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 18 In.	$ (4,457.19)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 3 In.	$ (4,415.60)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 2 In.	$ (377.63)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 26 In.	$ (271.22)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 30 In.	$ 400,635.53
GTP36700	High Level Adjustment		$ (1,571,161.00)
GTP36800	Trans Plant: Compressor Station Equipment	Compressor equipment	$ (2,114,572.98)
GTP36800	Trans Plant: Compressor Station Equipment	Vaults/buildings/civil work (foundations, pipe supports)	$ (786,691.92)
GTP36800	Trans Plant: Compressor Station Equipment	Instrumentation and controls, SCADA, PLC	$ (786,691.83)
GTP36800	Trans Plant: Compressor Station Equipment	Electrical power (S/B Gen, UPS, switchgear, P-Units)	$ (726,177.09)
GTP36800	Trans Plant: Compressor Station Equipment	Auxiliary equipment	$ (714,057.84)
GTP36800	Trans Plant: Compressor Station Equipment	Gas cooler	$ (534,718.44)
GTP36800	Trans Plant: Compressor Station Equipment	Valves (including regulators, control valves, actuators)	$ (476,431.58)
GTP36800	Trans Plant: Compressor Station Equipment	Pipe and fittings	$ (441,884.49)
GTP36800	Trans Plant: Compressor Station Equipment	Pressure vessels	$ (423,603.30)
GTP36800	High Level Adjustment		$ (1,406,550.24)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	Metering	$ (154,783.91)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	Valves (including regulators, control valves, actuators)	$ (99,999.63)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	Pipe and fittings	$ (58,857.90)
GTP36900	High Level Adjustment		$ (241,045.56)
GTS36700	Trans/STANPAC: Mains	Trans/STANPAC: Mains	$ (271,617.92)
GUS35120	UG Stor Plant: Compressor Station Structures	UG Stor Plant: Compressor Station Structures	$ (0.52)
GUS35200	UG Stor Plant: Wells	UG Stor Plant: Wells	$ (178,512.74)
GUS35200	High Level Adjustment		$ (61,660.26)
GUS35400	UG Stor Plant: Compressor Station Equipment	Compressor equipment	$ (427,860.27)
GUS35400	UG Stor Plant: Compressor Station Equipment	Valves (including regulators, control valves, actuators)	$ (291,537.63)
Overall Result			**$ (31,602,485.87)**

000041

Adds and Retires Report

Asset Class		Component	Retirements
GTE36800	Trans/PEP: Compressor Station Equipment	Trans/PEP: Compressor Station Equipment	$ (882,443.03)
GTP36620	Trans Plant: Measrng & Regltng Statn Structr	Trans Plant: Measrng & Regltng Statn Structr	$ (1,561.00)
GTP36630	Trans Plant: Other Structures	Trans Plant: Other Structures	$ (858,532.90)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 30 In.	$ (10,934,303.92)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 34 In.	$ (1,719,569.46)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 12 In.	$ (1,550,425.05)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 16 In.	$ (766,973.12)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 6 In.	$ (664,757.70)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 36 In.	$ (619,333.81)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 8 In.	$ (558,543.14)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 10 In.	$ (547,375.51)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 24 In.	$ (439,539.66)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 20 In.	$ (246,753.56)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 26 In.	$ (151,800.85)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 4 In.	$ (139,216.62)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 2 In.	$ (58,480.33)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 22 In.	$ (36,465.15)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 3 In.	$ (2,318.79)
GTP36700	Trans Plant: Mains	Main, Transmission Steel 42 In.	$ (79.76)
GTP36800	Trans Plant: Compressor Station Equipment	Compressor equipment	$ (3,228,046.68)
GTP36800	Trans Plant: Compressor Station Equipment	Auxiliary equipment	$ (100,323.23)
GTP36800	Trans Plant: Compressor Station Equipment	Electrical power (S/B Gen, UPS, switchgear, P-Units)	$ (63,057.71)
GTP36800	Trans Plant: Compressor Station Equipment	Pipe and fittings	$ (43,738.34)
GTP36800	Trans Plant: Compressor Station Equipment	Instrumentation and controls, SCADA, PLC	$ (493.83)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	Valves (including regulators, control valves, actuators)	$ (677,591.24)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	Metering	$ (358,716.98)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	Pipe and fittings	$ (189,566.95)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	Pressure vessels	$ (163,981.54)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	Instrumentation and controls, SCADA, PLC	$ (92,670.71)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	Auxiliary equipment	$ (60,332.74)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	Vaults/buildings/civil work (foundations, pipe supports)	$ (1,982.10)
GTP37100	Trans Plant: Other Equipment	Trans Plant: Other Equipment	$ (116,572.13)
GTS36700	Trans/STANPAC: Mains	Trans/STANPAC: Mains	$ 46,213.06
GTS36900	Trans/STANPAC: Meas/Reg Equipment	Trans/STANPAC: Meas/Reg Equipment	$ (115,384.47)
GUS35130	UG Stor Plant: Measrng & Regultng Statn Structr	UG Stor Plant: Measrng & Regultng Statn Structr	$ (48,053.25)
GUS35200	UG Stor Plant: Wells	UG Stor Plant: Wells	$ (1,262,877.05)
GUS35300	UG Stor Plant: Lines	UG Stor Plant: Lines	$ (27,814.33)
GUS35400	UG Stor Plant: Compressor Station Equipment	Compressor equipment	$ (1,508,252.98)
GUS35400	UG Stor Plant: Compressor Station Equipment	Valves (including regulators, control valves, actuators)	$ (149,833.89)
GUS35400	UG Stor Plant: Compressor Station Equipment	Pressure vessels	$ (79,829.53)
GUS35500	UG Stor Plant: Measrng & Regultng Statn Eqp	Valves (including regulators, control valves, actuators)	$ (69,130.64)
GUS35500	UG Stor Plant: Measrng & Regultng Statn Eqp	Metering	$ (33,686.21)
GUS35500	UG Stor Plant: Measrng & Regultng Statn Eqp	Electrical power (S/B Gen, UPS, switchgear, P-Units)	$ (4,913.40)
GUS35700	UG Stor Plant: Other Equipment	UG Stor Plant: Other Equipment	$ (58,504.25)
Overall Result			**$ (28,587,614.48)**

Adds and Retires Report

Asset Class		Retirements
GTE36800	Trans/PEP: Compressor Station Equipment	$ (129,951.26)
GTP36610	Trans Plant: Compressor Station Structures	$ (88,573.05)
GTP36620	Trans Plant: Measrng & Regltng Statn Structr	$ (6,181.73)
GTP36700	Trans Plant: Mains	$ (2,971,321.27)
GTP36800	Trans Plant: Compressor Station Equipment	$ (1,619,222.13)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	$ (1,666,268.70)
GTP37100	Trans Plant: Other Equipment	$ (237,317.49)
GTS36700	Trans/STANPAC: Mains	$ (467,090.62)
GUS35200	UG Stor Plant: Wells	$ (1,917,692.42)
GUS35300	UG Stor Plant: Lines	$ (36,868.13)
GUS35400	UG Stor Plant: Compressor Station Equipment	$ (3,606,039.84)
GUS35500	UG Stor Plant: Measrng & Regultng Statn Eqp	$ (513,373.82)
GUS35700	UG Stor Plant: Other Equipment	$ (464,354.28)
Overall Result		**$ (13,724,254.74)**

Adds and Retires Report

Asset Class		Retirements
GTP36610	Trans Plant: Compressor Station Structures	$ (41,153.96)
GTP36620	Trans Plant: Measrng & Regltng Statn Structr	$ (18,052.30)
GTP36700	Trans Plant: Mains	$ (3,154,298.63)
GTP36800	Trans Plant: Compressor Station Equipment	$ (167,095.48)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	$ (558,075.40)
GTP37100	Trans Plant: Other Equipment	$ (2,738.26)
GUS35120	UG Stor Plant: Compressor Station Structures	$ (3,537.57)
GUS35130	UG Stor Plant: Measrng & Regultng Statn Structr	$ (24,597.54)
GUS35200	UG Stor Plant: Wells	$ (5,286,688.63)
GUS35300	UG Stor Plant: Lines	$ (17,930.23)
GUS35400	UG Stor Plant: Compressor Station Equipment	$ (99,867.78)
GUS35700	UG Stor Plant: Other Equipment	$ (47,593.89)
Overall Result		**$ (9,421,629.67)**

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Adds and Retires Report

Asset Class		Retirements
GTP36700	Trans Plant: Mains	$ (19,333,051.50)
GTP36800	Trans Plant: Compressor Station Equipment	$ (2,682,095.09)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	$ (2,458,118.21)
GTP37100	Trans Plant: Other Equipment	$ (293,642.33)
GTS36700	Trans/STANPAC: Mains	$ (8,154.51)
GUS35120	UG Stor Plant: Compressor Station Structures	$ (9,298.01)
GUS35200	UG Stor Plant: Wells	$ (453,567.32)
GUS35300	UG Stor Plant: Lines	$ (31,842.20)
GUS35400	UG Stor Plant: Compressor Station Equipment	$ (25,151.99)
GUS35600	UG Stor Plant: Purification Equipment	$ (11,880.89)
Overall Result		**$ (25,306,802.05)**

Adds and Retires Report

Asset Class		Retirements
GTE36800	Trans/PEP: Compressor Station Equipment	$ (73,346.69)
GTP36610	Trans Plant: Compressor Station Structures	$ (3,169.91)
GTP36620	Trans Plant: Measrng & Regltng Statn Structr	$ (4,270.99)
GTP36630	Trans Plant: Other Structures	$ (10,612.50)
GTP36700	Trans Plant: Mains	$ (11,346,031.50)
GTP36800	Trans Plant: Compressor Station Equipment	$ (2,520,369.11)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	$ (429,462.82)
GTS36900	Trans/STANPAC: Meas/Reg Equipment	$ (8,274.60)
GUS35140	UG Stor Plant: Other Structures	$ (41,868.44)
GUS35200	UG Stor Plant: Wells	$ (1,579,692.93)
GUS35300	UG Stor Plant: Lines	$ (23,719.55)
GUS35400	UG Stor Plant: Compressor Station Equipment	$ (56,517.09)
GUS35500	UG Stor Plant: Measrng & Regultng Statn Eqp	$ (1,558.93)
GUS35600	UG Stor Plant: Purification Equipment	$ (1,730,438.35)
GUS35700	UG Stor Plant: Other Equipment	$ (38,090.06)
Overall Result		**$ (17,867,423.47)**

Adds and Retires Report

Asset Class		Retirements
GTE36800	Trans/PEP: Compressor Station Equipment	$ (533,616.21)
GTP36610	Trans Plant: Compressor Station Structures	$ (41,782.25)
GTP36620	Trans Plant: Measrng & Regltng Statn Structr	$ (6,345.58)
GTP36630	Trans Plant: Other Structures	$ (194,058.78)
GTP36700	Trans Plant: Mains	$ (3,931,708.69)
GTP36800	Trans Plant: Compressor Station Equipment	$ (9,817,553.18)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	$ (1,136,304.28)
GTP37100	Trans Plant: Other Equipment	$ (318,586.18)
GTS36700	Trans/STANPAC: Mains	$ (16,086.20)
GUS35200	UG Stor Plant: Wells	$ (445,554.39)
GUS35300	UG Stor Plant: Lines	$ (72,381.23)
GUS35400	UG Stor Plant: Compressor Station Equipment	$ (789,964.39)
GUS35500	UG Stor Plant: Measrng & Regultng Statn Eqp	$ (139,732.14)
Overall Result		**$ (17,443,673.50)**

Adds and Retires Report

Asset Class		Retirements
GTE36800	Trans/PEP: Compressor Station Equipment	$ (726,477.20)
GTP36610	Trans Plant: Compressor Station Structures	$ (1,402,344.63)
GTP36620	Trans Plant: Measrng & Regltng Statn Structr	$ (50,312.52)
GTP36700	Trans Plant: Mains	$ (7,967,370.08)
GTP36800	Trans Plant: Compressor Station Equipment	$ (3,686,752.16)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	$ (1,359,788.71)
GTP37100	Trans Plant: Other Equipment	$ (41,488.59)
GTS36700	Trans/STANPAC: Mains	$ (16,340.00)
GTS36900	Trans/STANPAC: Meas/Reg Equipment	$ (7,569.89)
GUS35200	UG Stor Plant: Wells	$ (465,539.76)
GUS35300	UG Stor Plant: Lines	$ (15,003.55)
GUS35400	UG Stor Plant: Compressor Station Equipment	$ (368,294.56)
GUS35500	UG Stor Plant: Measrng & Regultng Statn Eqp	$ (32,101.95)
Overall Result		**$ (16,139,383.60)**

000048

Adds and Retires Report

Asset Class		Retirements
GTE36800	Trans/PEP: Compressor Station Equipment	$ (489,902.56)
GTP36610	Trans Plant: Compressor Station Structures	$ (614,140.55)
GTP36630	Trans Plant: Other Structures	$ (1,279.00)
GTP36700	Trans Plant: Mains	$ (15,940,220.80)
GTP36800	Trans Plant: Compressor Station Equipment	$ (1,772,140.92)
GTP36900	Trans Plant: Measuring & Regulating Station Equipt	$ (3,352,536.14)
GTP37100	Trans Plant: Other Equipment	$ (500,480.92)
GTS36700	Trans/STANPAC: Mains	$ (31,403.47)
GUS35200	UG Stor Plant: Wells	$ (851,206.40)
GUS35300	UG Stor Plant: Lines	$ (40,667.82)
GUS35400	UG Stor Plant: Compressor Station Equipment	$ (147,649.70)
GUS35500	UG Stor Plant: Measrng & Regultng Statn Eqp	$ (56,760.80)
GUS35700	UG Stor Plant: Other Equipment	$ (16,240.41)
Overall Result		**$ (23,814,629.49)**

Adds and Retires Report

Asset Class		Retirements
GTE36800	GTE36800 Compressor Station Equip PEP	(1,179,997.76)
GTP36610	GTP36610 Compressor Station Structures	(4,756.13)
GTP36620	GTP36620 Meas. and Reg. Station Struct	(8,356.17)
GTP36630	GTP36630 Other Structures	(49,236.37)
GTP36700	GTP36700 Mains	(6,524,076.89)
GTP36800	GTP36800 Compressor Station Equipment	(326,433.48)
GTP36900	GTP36900 Odorizing Equipment	(5,039,163.31)
GUS35140	GUS35140 Other Structures	(52,235.90)
GUS35200	GUS35200 Wells	(3,466,700.97)
GUS35300	GUS35300 Lines	(34,320.72)
GUS35400	GUS35400 Compressor Station Equipment	(999,718.61)
GUS35700	GUS35700 Other Equipment	(62,977.27)
Overall Result		**(17,747,973.58)**

Adds and Retires Report

Asset Class		Retirements
GTE36610	GTE36610 Comp Station Structures PEP	(872,756.06)
GTE36630	GTE36630 Other Structures PEP	(73,168.25)
GTE36800	GTE36800 Compressor Station Equip PEP	(11,396,449.13)
GTP36610	GTP36610 Compressor Station Structures	(132,938.41)
GTP36630	GTP36630 Other Structures	(895,765.21)
GTP36700	GTP36700 Mains	(4,409,299.46)
GTP36800	GTP36800 Compressor Station Equipment	(1,732,562.04)
GTP36900	GTP36900 Odorizing Equipment	(711,140.74)
GTP37100	GTP37100 Other Equipment	(2,512,877.35)
GUS35200	GUS35200 Wells	(351,948.77)
GUS35400	GUS35400 Compressor Station Equipment	(12,193.33)
GUS35600	GUS35600 Purification Equipment	(7,142.85)
GUS35700	GUS35700 Other Equipment	(108,434.43)
Overall Result		**(23,216,676.03)**

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PACIFIC GAS AND ELECTRIC COMPANY
Gas Transmission and Storage Rate Case 2015
Application 13-12-012
Data Response

PG&E Data Request No.:	TURN_028-46		
PG&E File Name:	GTS-RateCase2015_DR_TURN_028-Q46		
Request Date:	July 7, 2014	Requester DR No.:	TURN-28
Date Sent:	July 23, 2014	Requesting Party:	The Utility Reform Network
PG&E Witness:		Requester:	Bob Finkelstein/Jack Pous

QUESTION 46

[Account 367] – Please identify what retired and any other factors that caused the cost of removal in 2012 for Account 367 – Transmission Mains to be more negative on a percentage basis than experienced during the past 10 years. Further, state whether the 2012 result is reasonably predictive of future retirements and provide all support for such position.

ANSWER 46

A key driver to the increase in cost of removal is that in 2012 PG&E was in the second year of its Pipeline Safety Enhancement Plan (PSEP), of which a key component is to replace approximately 140 miles of gas transmission pipe over the life of the program. For non PSEP related pipe, the replacement of pipe is dependent on a number of factors, including the results of PG&E's integrity management program and other operations and maintenance findings over time. We are not sure the net salvage of negative 140 percent is indicative of the future but it is indicative of the net salvage increasing (more negative) in recent years, sometimes over negative 100 percent. The depreciation study was conservative by only increasing the net salvage to negative 50 percent based on the overall average of the past 22 years and recent activity.

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SB_GT&S_0346848

PACIFIC GAS AND ELECTRIC COMPANY
Gas Transmission and Storage Rate Case 2015
Application 13-12-012
Data Response

PG&E Data Request No.:	TURN_028-23		
PG&E File Name:	GTS-RateCase2015_DR_TURN_028-Q23		
Request Date:	July 7, 2014	Requester DR No.:	TURN-28
Date Sent:	July 21, 2014	Requesting Party:	The Utility Reform Network
PG&E Witness:	Charles M. Marre/C. Richard Clarke	Requester:	Bob Finkelstein/Jack Pous

QUESTION 23

[Net Salvage] – Please identify and provide all support for the estimated allocation of costs between cost of removal and cost of installation of replacement plant by account for the 5 largest plant accounts.

ANSWER 23

PG&E does not use a generic allocation to distribute the costs of a replacement job between the cost to install and the cost to remove. Cost of removal is part of the estimated scope of work for job estimates involving asset replacements, and varies depending upon the particular job. Job estimates include labor, materials, and other job related costs. For each job, PG&E directly estimates the removal costs related to a job based on the tasks required, and then calculates these estimated costs as a percentage of the entire job cost. As costs are charged to a job, a percentage of the costs are charged to cost of removal based on the percentage of the estimated cost of removal to the total costs.

PACIFIC GAS AND ELECTRIC COMPANY
Gas Transmission and Storage Rate Case 2015
Application 13-12-012
Data Response

PG&E Data Request No.:	TURN_028-45		
PG&E File Name:	GTS-RateCase2015_DR_TURN_028-Q45		
Request Date:	July 7, 2014	Requester DR No.:	TURN-28
Date Sent:	July 21, 2014	Requesting Party:	The Utility Reform Network
PG&E Witness:	Charles M. Marre/ William Mojica	Requester:	Bob Finkelstein/Jack Pous

QUESTION 45

[Account 367] – Please identify and provide PG&E's policy regarding abandoning in place when retired mains recorded in Account 367 – Transmission Mains. Further, identify the annual dollar level of retirements abandoned in place for each of the past 10 years.

ANSWER 45

See Attachment GTS-RateCase2015_DR_TURN_028-Q44Atch01CONF for PG&E's Utility Procedure TD-9500P-16, for abandoning pipe in place when retiring the pipe. PG&E does not distinguish dollar retirements due to abandonment of or physically removing pipe.

000055

SB_GT&S_0346850

PACIFIC GAS AND ELECTRIC COMPANY
Gas Transmission and Storage Rate Case 2015
Application 13-12-012
Data Response

PG&E Data Request No.:	TURN_028-44		
PG&E File Name:	GTS-RateCase2015_DR_TURN_028-Q44		
Request Date:	July 7, 2014	Requester DR No.:	TURN-28
Date Sent:	July 21, 2014	Requesting Party:	The Utility Reform Network
PG&E Witness:	Charles M. Marre/ William Mojica	Requester:	Bob Finkelstein/Jack Pous

QUESTION 44

[Account 353] – Please identify and provide PG&E's policy regarding abandoning in place when retired lines recorded in Account 353 – Lines. Further, identify the annual dollar level of retirements abandoned in place for each of the past 10 years.

ANSWER 44

Attachment 01 to this response has been marked CONFIDENTIAL and is submitted pursuant to a Non-Disclosure Agreement because it includes confidential employee information.

See Attachment GTS-RateCase2015_DR_TURN_028-Q044Atch01CONF for PG&E's Utility Procedure TD-9500P-16, for abandoning pipe in place when retiring the pipe. PG&E does not distinguish dollar retirements due to abandonment of or physically removing pipe.

000056

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PACIFIC GAS AND ELECTRIC COMPANY
Gas Transmission and Storage Rate Case 2015
Application 13-12-012
Data Response

PG&E Data Request No.:	TURN_028-18		
PG&E File Name:	GTS-RateCase2015_DR_TURN_028-Q18		
Request Date:	July 7, 2014	Requester DR No.:	TURN-28
Date Sent:	July 18, 2014	Requesting Party:	The Utility Reform Network
PG&E Witness:	Charles M. Marre/C. Richard Clarke	Requester:	Bob Finkelstein/Jack Pous

QUESTION 18

[Net Salvage] – Please identify by account and by year for the five largest accounts the dollar amount of emergency related cost of removal reported in PG&E's historical net salvage analysis.

ANSWER 18

PG&E does not track cost of removal in the requested manner.

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PACIFIC GAS AND ELECTRIC COMPANY
Gas Transmission and Storage Rate Case 2015
Application 13-12-012
Data Response

PG&E Data Request No.:	TURN_028-17		
PG&E File Name:	GTS-RateCase2015_DR_TURN_028-Q17		
Request Date:	July 7, 2014	Requester DR No.:	TURN-28
Date Sent:	July 18, 2014	Requesting Party:	The Utility Reform Network
PG&E Witness:	Charles M. Marre/C. Richard Clarke	Requester:	Bob Finkelstein/Jack Pous

QUESTION 17

[Net Salvage] – Please identify by account and by year for the five largest accounts the dollar amount and percentage level of overtime pay reflected in the cost of removal reported in PG&E's historical net salvage analysis.

ANSWER 17

PG&E does not record the level of overtime in cost of removal. Cost of removal is recorded to an account based on settlement rules of charged construction work orders. For example, a work order with estimated removal costs that are 5% of the total estimated work order are charged 5% of the actual costs incurred for that given work order. These incurred costs may include labor, material, contracts and other costs. Additionally, for many provider cost centers (i.e., work groups that perform the work) the standard rate charged is a blend of straight time and over time labor and other provider cost center costs.

000058

SB_GT&S_0346853

PACIFIC GAS AND ELECTRIC COMPANY
Gas Transmission and Storage Rate Case 2015
Application 13-12-012
Data Response

PG&E Data Request No.:	TURN_028-16		
PG&E File Name:	GTS-RateCase2015_DR_TURN_028-Q16		
Request Date:	July 7, 2014	Requester DR No.:	TURN-28
Date Sent:	July 18, 2014	Requesting Party:	The Utility Reform Network
PG&E Witness:	Charles M. Marre/C. Richard Clarke	Requester:	Bob Finkelstein/Jack Pous

QUESTION 16

[Net Salvage] – Please identify by account and by year for the five largest accounts the dollar amount and percentage level of contractor pay reflected in the cost of removal reported in PG&E's historical net salvage analysis. Further, indicate the cost relationship between what an equivalent position with an in-house employee pays versus a contractor.

ANSWER 16

PG&E does not track cost of removal in the requested manner. Additionally, PG&E does not specifically track the work performed by in-house personnel as compared to outside contractors with respect to its cost of removal. As work orders incur costs, the costs are settled to cost of removal and to plant (as project is operational) based on the settlement rules established in the job estimate. These incurred costs may include labor, material, contracts and other costs and are not distinguished as such when settling to cost of removal or plant.

000059

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