

**PROGRAM YEAR 1999  
4<sup>TH</sup> YEAR RETENTION STUDY  
PACIFIC GAS AND ELECTRIC COMPANY  
POWERSAVING PARTNERS PROGRAM**

**PG&E Study ID Numbers**

<b>Commercial Lighting PSP II</b>	<b>422a - R1</b>
<b>Commercial Traffic Lights PSP II</b>	<b>422b - R1</b>
<b>Commercial HVAC PSP II</b>	<b>422c - R1</b>
<b>Commercial Lighting PSP I</b>	<b>422d - R1</b>
<b>Commercial HVAC PSP I</b>	<b>422e - R1</b>
<b>Industrial Process PSP II</b>	<b>423a - R1</b>
<b>Industrial Lighting PSP II</b>	<b>423b - R1</b>
<b>Industrial Motors PSP II</b>	<b>423c - R1</b>

**March 1, 2004**

Measurement and Evaluation  
Customer Energy Management  
Policy, Planning & Support Section  
Pacific Gas and Electric Company  
San Francisco, California

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# EVALUATION OF PACIFIC GAS AND ELECTRIC COMPANY'S 1999 POWERSAVING PARTNERS PROGRAM MEASURE RETENTION STUDY

*Pacific Gas and Electric Company Study ID numbers 422a-e R1, 423a-c R1*

## **Purpose of Study**

This study was conducted in compliance with the requirements specified in "Protocols and Procedures for Verification of Costs, Benefits, and Shareholder Earnings from Demand Side Management programs", as adopted by the California Public Utilities Commission Decision 93-05-063, revised January 1997 pursuant to Decisions 94-05-063, 94-10-059, 94-12-021, 95-12-054, and 96-12-079.

This study evaluated the measure retention from the following energy efficient technologies for which rebates were paid in 1999 by Pacific Gas and Electric Company's PowerSaving Partners (PSP) program.

- Commercial Lighting PSP II (422a – R1)
- Commercial Traffic Lights PSP II (422b - R1)
- Commercial HVAC PSP II (422c – R1)
- Commercial Lighting PSP I (422d – R1)
- Commercial HVAC PSP I (422e – R1)
- Industrial Process PSP II (423a – R1)
- Industrial Lighting PSP II (423b – R1)
- Industrial Motors PSP II (423c – R1)

## **Methodology**

The M&V plans are consistent with the Measurement and Evaluation (M&E) protocols adopted by the Commission if such protocols exist. The Commission emphasized in Decision 93-05-063, p. 75:

*Payments to winning bidders do not need to be linked to the completion of specific ex-post measurement studies in the same manner as utility earnings. The utilities are expected to apply the basic concepts....., but to allow reasonable differences between these protocols and bidders' measurement plans and payment schedules.*

Pacific Gas and Electric Company has fully complied with the Commission ruling and created a rigorous energy verification plan as accurate for site-specific savings measurement as the Protocols used for the Utility Programs.

Pacific Gas and Electric Company developed the PSP DSM Measurement and Verification Procedures Manual (Manual) following the directions in Appendix H of the Measurement Protocols adopted in D. 94-05-063. That is, the 1993 NAESCO protocols were adapted to California conditions (e.g., use of Title 24 baselines where appropriate) and made more rigorous.

The PSP contract specifies that participants submit the results of monitoring data for each site, this data is used to revise savings estimates and corresponding payments annually, and is submitted for review in this report.

For the retention study, representatives of Pacific Gas and Electric Company performed annual inspections for each customer type of all projects implemented in 1999. If an error was discovered that showed the equipment to be inoperable or less efficient, the original claim was corrected. The ratio of the total corrected savings to the total savings originally claimed was used to calculate the Realization Rate.

## Study Results

The results of the analyses are summarized below:

PY1999 4th Year Retention Study	Realization Rates	
	Peak kW	Annual kWh
<b>PowerSaving Partners I &amp; II</b>		
<b>Study ID # 422a,b,c,d,e R-1; 423a,b,c R-1</b>		
PY99 PowerSaving Partners II: Commercial Lighting	0.96	1.02
PY99 PowerSaving Partners II: Commercial Traffic Lights	1.00	1.00
PY99 PowerSaving Partners II: Commercial HVAC	0.66	0.84
PY99 PowerSaving Partners I: Commercial Lighting	1.01	1.04
PY99 PowerSaving Partners I: Commercial HVAC	1.12	1.41
PY99 PowerSaving Partners II: Industrial Process	0.56	0.72
PY99 PowerSaving Partners II: Industrial Lighting	0.94	0.91
PY99 PowerSaving Partners II: Industrial Motors	0.60	0.80
<b>PY99 Realization Rate</b>	<b>0.89</b>	<b>0.95</b>

## **Regulatory Waivers and Filing Variances**

PG&E received a waiver for all its pre-1998 programs modifying the 3<sup>rd</sup> and 4<sup>th</sup> earnings claim methodology in 1999. All 3<sup>rd</sup> and 4<sup>th</sup> earnings claim impacts are to be calculated as the sum of the measure level AEAP values as adjusted by the appropriate ex post Technical Degradation Factors (TDF) and Effective Useful Life (EUL) values.

PG&E received a waiver when it filed its Third Earnings Claim for the PowerSaving Partners program in 2000, allowing it to use site specific M&V reports, supported by random verification, to support its 1995 PSP Program third earnings claim. This methodology has been used in the current report.

The Appendices of this report contain confidential customer information and are submitted as such under CPUC Code Section 583.

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Industrial Motors PSP II	423c - R1

March 1, 2004

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**Measurement and Verification Manual (PSP II)**

## **EXECUTIVE SUMMARY**

The following documents evaluate the electric energy savings measured for Pacific Gas and Electric Company's PowerSaving Partners (PSP) Program for program year 1999. The PowerSaving Partners program is designed to provide Pacific Gas and Electric Company customers with an opportunity to purchase "turnkey" energy efficiency services supplied by privately-owned energy services companies.

The PowerSaving Partners program consists of two phases; the original PSP I program, and PSP II, the Integrated Bid pilot program. This study verifies peak kW and annual kWh savings for the measures installed in PY1999. The savings were originally claimed in the 2000 AEAP Earnings Claim, and updated in the 2001 AEAP Earnings Claim. The measures evaluated include:

- PowerSaving Partners II: Commercial Lighting
- PowerSaving Partners II: Commercial Traffic Lights
- PowerSaving Partners II: Commercial HVAC
- PowerSaving Partners I: Commercial Lighting
- PowerSaving Partners I: Commercial HVAC
- PowerSaving Partners II: Industrial Process
- PowerSaving Partners II: Industrial Lighting
- PowerSaving Partners II: Industrial Motors

The study documents the fourth year of performance of PY1999 projects, and provides the results of a thorough and rigorous monitoring study made by each of the PowerSaving Partners and evaluated by Pacific Gas and Electric Company. PowerSaving Partners are required to sample and meter all sites where measures are installed in order to receive payments for energy savings. This study tabulates the results of the Partner's findings. These findings are the basis for each realization rate claim.

For PSP PY1999 second earnings claim program accomplishments (filed in the 2001 AEAP Proceedings) Pacific Gas and Electric Company claimed 9,307 kW and 65,689 MWh of gross annual energy savings. These accomplishments were derived from the commercial and industrial market sectors. Table One lists the results of the Measurement and Verification (M&V) for these contracts by program end use.



**PSP REALIZATION RATES**

TABLE ONE

PY1999 4 <sup>th</sup> Year Retention Study PowerSaving Partners I & II Study ID # 422a,b,c,d,e R-1; 423a,b,c R-1	2nd Earnings Claim		3rd Earnings Claim		Realization Rates (3rd EC/2nd EC)	
	Peak kW	Annual kWh	Peak kW	Annual kWh	Peak kW	Annual kWh
PY99 PowerSaving Partners II: Commercial Lighting	4,646	26,913,648	4,463	27,324,714	0.96	1.02
PY99 PowerSaving Partners II: Commercial Traffic Lights	2,261	19,474,459	2,260	19,468,453	1.00	1.00
PY99 PowerSaving Partners II: Commercial HVAC	98	634,462	65	536,066	0.66	0.84
PY99 PowerSaving Partners I: Commercial Lighting	90	437,457	91	454,373	1.01	1.04
PY99 PowerSaving Partners I: Commercial HVAC	230	1,147,483	258	1,622,245	1.12	1.41
PY99 PowerSaving Partners II: Industrial Process	1,533	13,469,240	865	9,751,785	0.56	0.72
PY99 PowerSaving Partners II: Industrial Lighting	129	1,002,743	121	913,185	0.94	0.91
PY99 PowerSaving Partners II: Industrial Motors	320	2,609,237	191	2,079,909	0.60	0.80
<b>Total</b>	<b>9,307</b>	<b>65,688,728</b>	<b>8,315</b>	<b>62,150,730</b>	<b>0.89</b>	<b>0.95</b>

**PROGRAM BACKGROUND**

PowerSaving Partners I

In March 1992, the CPUC mandated that Pacific Gas & Electric Company implement a pilot bidding program for DSM resources (D.92-03-038). In good faith, Pacific Gas and Electric Company conducted a bid auction, and announced the list of winning bidders in April 1993. The CPUC found the winning DSM contracts to be reasonable in Decision(s) 93-11-067, 94-04-039 and 95-10-037.

## PowerSaving Partners II

In 1993, the CPUC mandated the development of an Integrated Bid pilot program in order D.93-06-040 (1993), 49 CPUC 2d 580. Pacific Gas and Electric Company was subsequently ordered by the CPUC to conduct a bid auction to fulfill the Integrated Bid pilot ordered in decision(s) D93-06-040, D. 93-010-040, and D. 94-06-046.

Pacific Gas and Electric Company issued a Request for Proposal under the Integrated Bid pilot in December 1994. After extensive evaluation and negotiation, PG&E signed nine contracts representing 34MW and 247 GWh. The contracts were approved by the CPUC in July 1996. All PSP II contracts had an initial three-year implementation period to install projects and accomplish contracted energy savings. However, effective August 1, 1999, the original Committed Operation Date, the CPUC approved the PG&E Advice filing 2173-G/1897-E, which extended the Implementation Period to January 1, 2000. A number of the contracts allowed for additional periods to install projects to remedy contract performance. The contracts then entered the Committed Operation Period wherein savings and payment streams continue for the duration of each contract.

All PSP contracts are based on pay-for-performance over a contract life ranging from eight to ten years. The PowerSaving Partners perform Measurement and Verification (M&V) of energy savings each contract year before reporting program results. Payments are based on initial savings projections and then reconciled according to actual verified energy savings after one year. If savings are not achieved as projected, payments are modified and future savings projections are adjusted. A method for collecting overpayments, should they occur, is contained in each contract. This reconciliation process occurs annually throughout the duration of the contracts.

The M&V plans are consistent with the Measurement and Evaluation (M&E) protocols adopted by the Commission in all instances where such protocols exist. The Commission emphasized in Decision 93-05-063, p. 75:

*Payments to winning bidders do not need to be linked to the completion of specific ex-post measurement studies in the same manner as utility earnings. The utilities are expected to apply the basic concepts....., but to allow reasonable differences between these protocols and bidders' measurement plans and payment schedules.*

Pacific Gas and Electric Company has fully complied with the Commission ruling and created a rigorous energy verification plan as accurate for site-specific savings measurement as the Protocols used for the Utility Programs.

## **MEASUREMENT & VERIFICATION METHODOLOGY**

A short discussion of existing M&V requirement for each of the PowerSaving Partners will assist in explaining the methodology for this realization report.

Pacific Gas and Electric Company developed the PSP DSM Measurement and Verification Procedures Manual (Manual) following the directions in Appendix H of the Measurement Protocols adopted in Decision 94-05-063. That is, the 1993 NAESCO protocols were adapted to California conditions (for example, use of Title 24 baselines where appropriate) and made more rigorous. The Manual was reviewed and, in its final form, accepted by all PowerSaving Partners. The Manual was adopted in its entirety for the PSP contract with the State of California (now UC Davis) partly due to the fact that it covers all aspects of M&V electric savings.

The following list outlines the topics covered the M&V Procedures Manual:

- Common requirements and definitions
- Submittal requirements for each project
- M&V procedures for lighting efficiency and lighting controls measures
- M&V procedures for constant load motors
- M&V procedures for variable load motors and HVAC measures
- Maintenance and management plans
- Sample forms and report outlines

Following is a summary of the measurement strategy based on end-use/control group.

### **A. Lighting Efficiency Measures**

1. The Partner surveys and records the existing condition (baseline) and new (post-installation) conditions to include exact fixture and lamp counts, ballast types, and usage areas. Usage areas *must* be defined in a way that combines areas with similar operating characteristics. For example, areas where comparable average operating hours are determined by the proportion of lights in operation during each of the five Pacific Gas and Electric Company costing periods would be grouped together. Pacific Gas and Electric Company independently verifies the reported baseline and post-installation conditions.

2. Approved lighting project wattages are listed in the *Table of Standard Wattages* and used to determine the kW per fixture for pre- and post-installation conditions. Operating hours are derived by short term metering of fixture 'on-time' within the various Time of Use costing periods. The short term metering duration is determined by market segment and typically ranges from 30 to 120 days. The required sample size for metering is calculated to achieve 90% confidence at 10% precision. The majority of measures installed by PSP in PY2000 were lighting efficiency retrofits and the M&V followed by each and every Partner conforms to the above statements.

#### B. Lighting Controls and Constant Load Motors

Constant load or variable hour projects are another category of projects (for example, motor efficiency retrofits or lighting controls). The verification strategy for these measures includes the collection of existing connected load and includes an actual kW or horsepower measurement, and a typical operating schedule. This verification process may include spot metering to determine actual demand and/or short-term metering of a sample to verify constant load, and to normalize results. The post-installation verification may include spot metering to determine connected load. The ongoing measurement activities for these types of measures include short-term metering for connected load and actual run-hours. Any short-term metering length is determined by application and typically lasts from 30 to 120 days.

#### C. Variable Load Projects

The last project group has variable loads, variable operating hours, or variations due to seasonal operation. For measurement and verification, a comprehensive strategy is necessary for this type of project. In these projects, end-use measurements can be difficult due to safety considerations, or cost prohibitive due to difficulty in isolating the operation. When a project specific approach is necessary, continuous metering or billing analysis are acceptable approaches. The Manual outlines a continuous metering strategy as well as pre-installation and post-installation billing analysis.

## REALIZATION STUDY METHODOLOGY

The PY1999 Pacific Gas and Electric Company savings claim was comprised of savings from a total of 196 Project Codes<sup>1</sup>. The Project Codes were aggregated by end use or sector and reported in the 1999 E tables, and updated in the second earnings claim study. The following tables document the realization rate that is derived by comparing the current measured savings and the measured savings claimed in the second earnings claim for each Project Code.

### 2003 Realization Rate Study by End Use

Tables 2 through 9, "Realization Rate Study by End Use" lists a Project Code, the kW and kWh savings associated with that code and reported in the second earnings claim, and the current year measured kW and kWh savings as determined by analyzing metering and monitoring data. The gross realization rate is equal to the savings measured in 2003 divided by the savings claimed in the second earnings claim. These tables are sorted by end use for each required study.

### 2003 Realization Rate by Partner

Table 10, "Realization Rate by Partner," lists the same information as Tables 2-9; however, each of the Project Codes is sorted by participating Partner corresponding to each section of the Appendix.

### Protocol Table 6

Protocol Table 6 lists the kW and kWh savings as reported in the 2000 AEAP claim, and currently measured kW and kWh savings as determined by analyzing metering and monitoring data for 2003 performance.

The **gross** realization rate is equal to the current savings measured in 2003 divided by the 2000 savings (as claimed in the 2001 AEAP).

The **net** realization rate is equal to the current savings measured in 2003 (weighted by the appropriate Net-to-Gross ratio) divided by the 2000 savings (as claimed in the 2001 AEAP).

The Net-to-Gross ratios were defined in the original PSP contracts. Each end use or study has a separate Protocol Table 6.

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<sup>1</sup> Project Code identifies each site and each end use.

## Appendix

The Appendix contains three sets of documents for each Partner. There are 5 contractually distinctive Partners (one Partner has two contracts) that installed projects in 1999.

The first set of documents, the Annual Reports, are comprised of site-specific information and submitted, as required, by the specific Measurement and Verification Plan, as prescribed by the M&V Manual. The information is the tabulation of actual monitored data from data loggers installed at each site, or at a representative sample of similar sites. The data was analyzed for Pacific Gas and Electric Company by a third party, Nexant, Inc. The approved hours of operation for each usage group were used, in part, to determine contract payments and incorporated into the invoices for the following year.

The second set of documents for each Partner includes the forms that describe the approved hours of operation, and the kW and kWh savings that determine payment levels. For one Partner, there are additional savings included in the tables. The UC Davis contract allows for a four percent (4%) addition to savings to compensate for transmission losses. These savings are as filed and approved in the original PSP contracts.

The third set of documents for each Partner consists of forms that describe the baseline equipment, the retrofit equipment, and all usage group designations. For non-lighting projects, the equipment tables, hours of operation and kW and kWh savings are consolidated on one form and found in the second tabbed section of that Partner's data. In all cases, after an installation is approved, the tables are loaded into the PSP database and a kW savings (connected load reduction) is calculated and recorded for each usage group. Savings are reported as maximum kW savings (connected load reductions). The forms are stored on a compact diskette and included with this report.

Kilowatt savings (connected load reductions) are reported as average, on-peak kW savings. That is, the total maximum kW savings (connected load reductions) are multiplied by a ratio of the hours of operation in the on-peak period, divided by 774, the maximum on-peak hours in the 1993 baseline calendar year. The energy savings (kWh) reported are a product of the maximum kW reduction multiplied by the total hours of operation.

Per the Manual, the first year savings claim is based on engineering estimates. Each successive year savings claim is based on metered data gathered during the previous year.

### **SUMMARY**

Pacific Gas and Electric Company has adhered to or exceeded the basic concepts of ex-post measurement protocols by implementing the adjusted NAESCO standards for the first and second set of DSM bidding contracts. The kW and kWh realization rates in this study link the savings measured at 196 sites to the values reported in the second earnings claim filed in the 2001 AEAP in support of the original Pacific Gas and Electric Company PY1999 earnings claim.

Table 2  
 PY1999 Realization Study for 3rd Earning Claim  
 Study 422a R-1 : Commercial Lighting PSpI

CODE	Sector	End Use Measure	2nd Earning Claim		3rd Earning Claim		3rd EC/2nd EC	
			Measured Peak kW Savings	Measured kWh Savings	Measured Peak kW Savings	Measured kWh Savings	Peak kW Realization Rate	kWh Realization Rate
PETALROSC	Commercial	Lighting	5.58	40,639.08	4.16	34,094.98	0.75	0.84
PETCL1331E	Commercial	Lighting	37.58	196,177.84	33.60	160,282.28	0.89	0.82
PETCL1333E	Commercial	Lighting	71.38	364,564.84	63.98	295,073.63	0.90	0.81
PETCOASE2E	Commercial	Lighting	18.35	129,219.17	17.35	136,903.86	0.95	1.06
PETCORICTE	Commercial	Lighting	96.98	682,300.37	81.65	565,447.00	0.84	0.83
PETHOEREYE	Commercial	Lighting	112.01	780,166.70	101.54	711,248.23	0.91	0.91
PETHOLITEE	Commercial	Lighting	220.88	1,528,273.66	206.19	1,520,207.75	0.93	0.99
PETHOPARKE	Commercial	Lighting	7.46	39,066.88	7.46	35,234.37	1.00	0.90
PETHOWILLE	Commercial	Lighting	11.18	58,910.18	9.51	46,676.73	0.85	0.79
PETIRESNOC	Commercial	Lighting	0.00	249,839.86	-13.34	108,810.61	0.00	0.44
PETIRESNOE	Commercial	Lighting	77.47	574,695.18	87.77	606,906.88	1.13	1.06
PETLELAZAE	Commercial	Lighting	17.85	156,147.59	17.85	156,254.71	1.00	1.00
PETPRINGSE	Commercial	Lighting	90.72	466,467.34	87.30	405,623.57	0.96	0.87
PETSP1731E	Commercial	Lighting	80.97	446,386.02	74.68	378,005.70	0.92	0.85
PETSP1735E	Commercial	Lighting	60.44	333,048.48	59.33	289,696.98	0.98	0.87
PETSP224E	Commercial	Lighting	70.50	392,981.25	65.38	337,620.79	0.93	0.86
PETSP226E	Commercial	Lighting	68.09	356,254.21	62.37	291,031.84	0.92	0.82
PETSPSE2AE	Commercial	Lighting	55.50	311,421.84	51.48	265,873.28	0.93	0.85
PETSPSE2BE	Commercial	Lighting	70.92	403,012.72	66.71	356,164.03	0.94	0.88
PETSPSE2CE	Commercial	Lighting	72.02	399,092.15	66.85	340,830.68	0.93	0.85
PETSPSE3AE	Commercial	Lighting	60.39	343,556.31	54.46	289,376.95	0.90	0.84
PETSPSE3BE	Commercial	Lighting	32.93	189,441.51	30.79	166,165.52	0.94	0.88
PETSPSE3CE	Commercial	Lighting	26.59	165,999.43	25.20	152,339.15	0.95	0.92
PETSPSE3DE	Commercial	Lighting	32.20	192,578.04	30.22	172,744.62	0.94	0.90
PETSPSE4AE	Commercial	Lighting	32.40	165,516.84	29.57	133,309.90	0.91	0.81
PETSPSE4BE	Commercial	Lighting	37.52	197,631.01	34.53	164,220.12	0.92	0.83
PETSPSE4CE	Commercial	Lighting	46.48	238,974.59	42.45	193,185.14	0.91	0.81
PETSPSE4DE	Commercial	Lighting	25.75	135,413.22	23.64	111,854.88	0.92	0.83
PETSPSE4EE	Commercial	Lighting	34.07	174,336.08	31.24	142,367.41	0.92	0.82
PETSPSE4FE	Commercial	Lighting	31.62	167,681.08	29.12	139,633.82	0.92	0.83
PETUC_BIOE	Commercial	Lighting	33.67	181,936.02	36.65	176,385.89	1.09	1.09
PETUC_H-CE	Commercial	Lighting	4.19	21,977.85	4.30	21,516.35	1.03	0.98
PETUC_H-DE	Commercial	Lighting	19.62	95,901.47	21.42	103,835.73	1.09	1.08
PETUC_H-EE	Commercial	Lighting	3.93	19,958.44	4.31	21,717.51	1.10	1.09
PETUCAREAE	Commercial	Lighting	22.37	130,514.05	24.41	140,848.21	1.09	1.08
PETUCCOOLE	Commercial	Lighting	4.79	32,699.47	5.19	34,070.99	1.08	1.04
PETUC_ALE	Commercial	Lighting	8.27	41,060.95	9.15	45,341.44	1.11	1.10
PETUCHARDE	Commercial	Lighting	9.81	46,604.08	10.80	51,611.10	1.10	1.11
PETUCICESE	Commercial	Lighting	10.96	61,672.79	12.05	67,153.47	1.10	1.09
PETUCLANTE	Commercial	Lighting	13.65	64,943.94	14.74	71,307.49	1.08	1.10
PETUCMILLE	Commercial	Lighting	11.95	80,214.32	13.33	86,297.06	1.12	1.08
PETUCMSIDE	Commercial	Lighting	3.25	16,586.10	3.59	18,267.69	1.10	1.10
PETUCNE_BE	Commercial	Lighting	7.96	43,283.25	8.63	46,768.11	1.08	1.08
PETUCNE_DE	Commercial	Lighting	19.33	110,991.20	21.49	119,562.85	1.11	1.08
PETUCNE_EE	Commercial	Lighting	8.83	41,889.99	8.20	35,351.92	0.93	0.84
PETUCNE_JE	Commercial	Lighting	0.38	1,773.04	0.42	1,995.39	1.11	1.13
PETUCREETE	Commercial	Lighting	0.75	3,613.26	0.73	3,309.66	0.97	0.92
PETUCT_STE	Commercial	Lighting	0.61	2,911.18	0.64	3,003.98	1.05	1.03
PETUCTUREE	Commercial	Lighting	20.35	96,857.60	20.91	100,484.67	1.03	1.04
PNOS_ITALE	Commercial	Lighting	114.46	803,565.15	112.92	703,035.68	0.99	0.87
PNOTATAFTE	Commercial	Lighting	90.52	452,807.47	43.52	300,480.15	0.48	0.66
PORALALUME	Commercial	Lighting	126.10	883,681.69	121.30	729,495.37	0.96	0.83
PORCA1800E	Commercial	Lighting	45.52	254,434.86	62.69	444,077.38	1.38	1.75
PORCA1810E	Commercial	Lighting	38.19	273,288.47	45.78	374,962.96	1.20	1.37
PORCA1820E	Commercial	Lighting	45.89	269,595.32	61.62	444,136.61	1.34	1.65
PORCAN160E	Commercial	Lighting	30.82	229,458.96	35.86	299,450.74	1.16	1.31
PORCAN560E	Commercial	Lighting	17.66	129,152.13	20.85	173,177.03	1.18	1.34
PORCAN650E	Commercial	Lighting	40.03	296,401.68	47.29	394,747.79	1.18	1.33
PORCHBUSHE	Commercial	Lighting	30.76	180,736.28	31.17	200,966.04	1.01	1.11
PORCHETONE	Commercial	Lighting	20.06	119,809.88	22.48	147,151.65	1.12	1.23
PORCHHYDEE	Commercial	Lighting	55.12	324,843.93	58.22	349,655.33	1.06	1.08
PORCHNCISE	Commercial	Lighting	57.71	394,867.09	63.15	420,316.98	1.09	1.06
PORCHUOIAE	Commercial	Lighting	134.98	968,893.37	139.58	991,853.56	1.03	1.02
PORDEANZAE	Commercial	Lighting	180.46	626,861.11	215.83	1,530,281.44	1.20	2.44
PORFOHILLE	Commercial	Lighting	63.91	226,918.21	62.46	302,544.13	0.98	1.33
PORFRMONTE	Commercial	Lighting	105.50	656,696.90	96.30	481,248.94	0.91	0.73
PORGRA#100E	Commercial	Lighting	2.65	18,945.26	2.67	17,468.56	1.01	0.92
PORGRA#14E	Commercial	Lighting	14.33	84,527.15	14.49	105,517.31	1.01	1.25
PORGRA#36E	Commercial	Lighting	13.98	94,455.59	14.08	95,430.77	1.01	1.01
PORGRA#70E	Commercial	Lighting	9.35	64,375.33	9.41	63,069.48	1.01	0.98
PORGRA#85E	Commercial	Lighting	7.35	58,676.10	7.37	44,576.70	1.00	0.76
PORGRD#43E	Commercial	Lighting	14.96	99,092.90	15.08	103,398.81	1.01	1.04
PORGRD#54E	Commercial	Lighting	16.10	91,918.78	16.29	120,470.44	1.01	1.31
PORGRD#73E	Commercial	Lighting	5.09	30,639.08	5.15	37,117.73	1.01	1.21
PORGRD#78E	Commercial	Lighting	13.39	77,875.49	13.54	99,256.49	1.01	1.27
PORGRE#27E	Commercial	Lighting	12.24	70,908.68	12.38	90,928.11	1.01	1.28
PORGRE#53E	Commercial	Lighting	15.49	100,409.68	15.62	108,358.61	1.01	1.08
PORGRE#71E	Commercial	Lighting	6.16	37,333.88	6.23	44,760.48	1.01	1.20
PORGRE#79E	Commercial	Lighting	20.02	131,573.33	20.18	138,984.38	1.01	1.06
PORGRLE#6E	Commercial	Lighting	8.35	50,580.29	8.43	60,627.66	1.01	1.20
PORGRND#4E	Commercial	Lighting	15.95	98,608.69	16.11	114,636.58	1.01	1.16
PORGRO#13E	Commercial	Lighting	12.51	87,444.38	12.60	83,628.78	1.01	0.96
PORGRO#21E	Commercial	Lighting	7.22	44,326.34	7.29	52,076.58	1.01	1.17
PORGRO#35E	Commercial	Lighting	14.78	92,331.08	14.92	105,563.46	1.01	1.14
PORGRO#38E	Commercial	Lighting	15.57	92,813.89	15.74	114,020.36	1.01	1.23
PORGRO#62E	Commercial	Lighting	12.17	77,927.06	12.27	85,728.62	1.01	1.10
PORGRO#80E	Commercial	Lighting	6.96	46,643.34	7.01	47,733.51	1.01	1.02
PORGRO#82E	Commercial	Lighting	9.60	55,287.39	9.72	71,567.23	1.01	1.29
PORGRS#31E	Commercial	Lighting	12.20	75,846.88	12.32	87,369.65	1.01	1.15
PORGRY#44E	Commercial	Lighting	13.76	95,210.35	13.85	92,518.25	1.01	0.97
PORGRY#46E	Commercial	Lighting	8.78	52,175.63	8.87	64,370.11	1.01	1.23
PORGRY#58E	Commercial	Lighting	17.25	110,212.01	17.41	121,780.67	1.01	1.10
PORHOOMACE	Commercial	Lighting	32.97	238,109.34	31.14	181,433.91	0.94	0.76
PORKRONOSC	Commercial	Lighting	40.40	324,651.87	0.00	0.00	0.00	0.00
PORKRONOSE	Commercial	Lighting	196.87	1,196,634.10	194.65	1,372,856.60	0.99	1.15
PORNEANGE	Commercial	Lighting	14.52	127,221.48	14.19	122,356.28	0.98	0.96
PORNONBMCE	Commercial	Lighting	83.53	608,546.24	93.98	693,701.23	1.13	1.14
PORNVHICOE	Commercial	Lighting	39.87	227,710.93	37.79	277,805.00	0.95	1.22
PORROFICEC	Commercial	Lighting	0.64	3,782.43	0.30	2,181.68	0.47	0.58
PORROFICEE	Commercial	Lighting	5.66	22,695.35	4.13	18,464.56	0.73	0.81



Table 2  
 PY1999 Realization Study for 3rd Earning Claim  
 Study 422a R-1 : Commercial Lighting PSPII

CODE	Sector	End Use Measure	Measured Peak kW Savings	Measured kWh Savings	Measured Peak kW Savings	Measured kWh Savings	Peak kW Realization Rate	kWh Realization Rate
PORROHIGHC	Commercial	Lighting	6.58	31,854.50	3.24	21,905.40	0.49	0.69
PORROHIGHE	Commercial	Lighting	44.77	165,986.09	39.83	172,578.59	0.89	1.04
PORROLOPEC	Commercial	Lighting	5.64	28,792.17	2.74	18,891.28	0.49	0.66
PORROLOPEE	Commercial	Lighting	18.90	70,660.54	16.45	71,450.09	0.87	1.01
PORROEENC	Commercial	Lighting	4.67	22,219.53	2.31	15,497.51	0.49	0.70
PORROEENE	Commercial	Lighting	20.74	76,836.21	18.59	80,306.33	0.90	1.05
PORROTARYC	Commercial	Lighting	4.08	19,166.67	2.02	13,528.69	0.50	0.71
PORROTARYE	Commercial	Lighting	18.01	65,575.98	16.90	72,595.47	0.94	1.11
PORROONEC	Commercial	Lighting	4.33	20,685.50	2.14	14,395.74	0.49	0.70
PORROONEE	Commercial	Lighting	17.76	65,203.88	16.26	70,155.81	0.92	1.08
PORSASRJCE	Commercial	Lighting	419.07	1,740,392.37	359.02	1,802,917.89	0.86	1.04
PORSYMONTE	Commercial	Lighting	48.96	295,285.23	49.45	323,742.29	1.01	1.10
PORVA1546E	Commercial	Lighting	11.94	64,502.10	12.24	66,526.99	1.02	1.03
PORVA2915E	Commercial	Lighting	6.04	55,120.94	18.05	91,159.12	2.99	1.65
PORVA3225E	Commercial	Lighting	30.71	171,301.88	28.50	170,770.93	0.93	1.00
PORVA6817E	Commercial	Lighting	1.19	19,191.35	9.95	48,042.27	8.36	2.50
PORVA836E	Commercial	Lighting	34.92	175,926.51	34.52	184,127.35	0.99	1.05
PORVA8401E	Commercial	Lighting	105.41	506,962.60	95.87	513,749.61	0.91	1.01
PORVA8500E	Commercial	Lighting	85.78	447,318.36	79.65	452,765.24	0.93	1.01
PORVA852E	Commercial	Lighting	27.73	133,980.04	25.30	136,252.45	0.91	1.02
<b>Total</b>			<b>4,646.11</b>	<b>26,913,647.76</b>	<b>4,463.26</b>	<b>27,324,714.33</b>	<b>0.96</b>	<b>1.02</b>

Table 3  
 PY1999 Realization Study for 3rd Earning Claim  
 Study 422b R-1 : Commercial Traffic Lights PSPII

CODE	Sector	End Use Measure	2nd Earning Claim		3rd Earning Claim		3rd EC/2nd EC	
			Measured Peak kW Savings	Measured kWh Savings	Measured Peak kW Savings	Measured kWh Savings	Peak kW Realization Rate	kWh Realization Rate
PETLE;EBYE	Commercial	Traffic Lighting	19.14	164,709.09	19.14	164,709.09	1.00	1.00
PETLEABLOE	Commercial	Traffic Lighting	18.52	160,058.00	18.52	160,058.00	1.00	1.00
PETLEAC2BE	Commercial	Traffic Lighting	5.24	45,230.51	5.24	45,230.51	1.00	1.00
PETLEAC2CE	Commercial	Traffic Lighting	0.39	3,456.80	0.39	3,456.80	1.00	1.00
PETLEASEAE	Commercial	Traffic Lighting	147.46	1,188,495.57	147.46	1,188,495.57	1.00	1.00
PETLEBY2BE	Commercial	Traffic Lighting	13.80	119,919.38	13.80	119,919.38	1.00	1.00
PETLEBY2CE	Commercial	Traffic Lighting	6.74	57,499.18	6.74	57,499.18	1.00	1.00
PETLE-CCOE	Commercial	Traffic Lighting	73.20	630,272.38	73.20	630,272.38	1.00	1.00
PETLECO2BE	Commercial	Traffic Lighting	12.47	107,329.32	12.47	107,329.32	1.00	1.00
PETLECO2CE	Commercial	Traffic Lighting	17.06	147,205.52	17.06	147,205.52	1.00	1.00
PETLECRUZE	Commercial	Traffic Lighting	44.41	384,107.50	44.41	384,107.50	1.00	1.00
PETLE-D10E	Commercial	Traffic Lighting	9.54	83,152.35	9.54	83,152.35	1.00	1.00
PETLE-DIAE	Commercial	Traffic Lighting	10.10	86,824.69	10.10	86,824.69	1.00	1.00
PETLEEA2AE	Commercial	Traffic Lighting	13.11	112,798.57	13.11	112,798.57	1.00	1.00
PETLEEA2BE	Commercial	Traffic Lighting	8.85	76,812.65	8.85	76,812.65	1.00	1.00
PETLE-EBAE	Commercial	Traffic Lighting	6.35	53,671.65	6.35	53,671.65	1.00	1.00
PETLEELEYE	Commercial	Traffic Lighting	95.73	821,689.32	95.73	821,689.32	1.00	1.00
PETLEEN2AE	Commercial	Traffic Lighting	15.66	134,553.80	15.66	134,553.80	1.00	1.00
PETLEEN2BE	Commercial	Traffic Lighting	9.69	83,289.50	9.69	83,289.50	1.00	1.00
PETLEEN2CE	Commercial	Traffic Lighting	20.20	174,452.51	20.20	174,452.51	1.00	1.00
PETLEIA2CE	Commercial	Traffic Lighting	7.05	61,098.70	7.05	61,098.70	1.00	1.00
PETLEILLEE	Commercial	Traffic Lighting	33.96	287,256.55	33.96	287,256.55	1.00	1.00
PETLEIS2BE	Commercial	Traffic Lighting	19.59	169,676.67	19.59	169,676.67	1.00	1.00
PETLEIS2CE	Commercial	Traffic Lighting	11.65	100,650.80	11.65	100,650.80	1.00	1.00
PETLEISCOE	Commercial	Traffic Lighting	4.01	34,207.37	4.01	34,207.37	1.00	1.00
PETLEJOSEE	Commercial	Traffic Lighting	10.82	93,772.73	10.82	93,772.73	1.00	1.00
PETLELANDE	Commercial	Traffic Lighting	162.14	1,301,859.71	162.14	1,301,859.71	1.00	1.00
PETLE-LOSE	Commercial	Traffic Lighting	54.33	468,983.79	54.33	468,983.79	1.00	1.00
PETLELROYE	Commercial	Traffic Lighting	17.65	152,327.15	17.65	152,327.15	1.00	1.00
PETLE-MISE	Commercial	Traffic Lighting	8.58	73,413.54	8.58	73,413.54	1.00	1.00
PETLE-NBYE	Commercial	Traffic Lighting	15.61	134,114.32	15.61	134,114.32	1.00	1.00
PETLE-NCOE	Commercial	Traffic Lighting	1.95	16,683.08	1.95	16,683.08	1.00	1.00
PETLEND-CE	Commercial	Traffic Lighting	108.20	875,616.90	108.20	875,616.90	1.00	1.00
PETLE-SACE	Commercial	Traffic Lighting	6.73	58,004.16	6.73	58,004.16	1.00	1.00
PETLES-D1E	Commercial	Traffic Lighting	4.41	37,832.41	4.41	37,832.41	1.00	1.00
PETLES-D2E	Commercial	Traffic Lighting	9.78	84,661.53	9.78	84,661.53	1.00	1.00
PETLES-D6E	Commercial	Traffic Lighting	53.27	458,454.49	53.27	458,454.49	1.00	1.00
PETLE-SFOE	Commercial	Traffic Lighting	2.18	18,567.40	2.18	18,567.40	1.00	1.00
PETLE-SJOE	Commercial	Traffic Lighting	15.46	132,206.39	15.46	132,206.39	1.00	1.00
PETLE-SRAE	Commercial	Traffic Lighting	9.20	79,732.18	9.20	79,732.18	1.00	1.00
PETLETBAYE	Commercial	Traffic Lighting	21.75	188,711.94	21.75	188,711.94	1.00	1.00
PETLEWARDE	Commercial	Traffic Lighting	118.00	1,010,933.19	118.00	1,010,933.19	1.00	1.00
PNOLECITYE	Commercial	Traffic Lighting	69.77	610,354.82	69.77	610,354.82	1.00	1.00
PNOLECORDE	Commercial	Traffic Lighting	148.13	1,297,663.42	148.13	1,297,663.42	1.00	1.00
PNOLEETTEE	Commercial	Traffic Lighting	19.57	172,783.63	19.57	172,783.63	1.00	1.00
PNOLEJOSEE	Commercial	Traffic Lighting	399.84	3,560,547.14	399.61	3,558,408.65	1.00	1.00
PNOLETOSOE	Commercial	Traffic Lighting	13.44	118,655.92	13.44	118,655.92	1.00	1.00
PNOLEMONTE	Commercial	Traffic Lighting	154.46	1,363,478.76	154.46	1,363,478.76	1.00	1.00
PNOLERACYE	Commercial	Traffic Lighting	64.73	577,125.05	64.30	573,257.25	0.99	0.99
PNOLEREKEE	Commercial	Traffic Lighting	75.59	667,270.22	75.59	667,270.22	1.00	1.00
PNOLETINOE	Commercial	Traffic Lighting	71.02	632,286.94	71.02	632,286.94	1.00	1.00
<b>Total</b>			<b>2,260.53</b>	<b>19,474,459.19</b>	<b>2,259.87</b>	<b>19,468,452.90</b>	<b>1.00</b>	<b>1.00</b>

Table 4  
 PY1999 Realization Study for 3rd Earning Claim  
 Study 422c R-1 : Commercial HVAC PSPII

CODE	Sector	End Use	2nd Earning Claim		3rd Earning Claim		3rd EC/2nd EC	
			Measured Peak kW Savings	Measured kWh Savings	Measured Peak kW Savings	Measured kWh Savings	Peak kW Realization Rate	kWh Realization Rate
PETHOLCAMM	Commercial	HVAC	48.01	439,391.00	44.88	418,682.40	0.93	0.95
PETSP4VFDM	Commercial	HVAC	12.60	53,071.20	0.00	0.00	0.00	0.00
PETSPVFDSM	Commercial	HVAC	26.10	97,281.30	13.63	56,915.52	0.52	0.59
PNOEATORSM	Commercial	HVAC	11.22	44,718.42	6.48	60,468.44	0.58	1.35
<b>Total</b>			<b>97.93</b>	<b>634,461.92</b>	<b>64.99</b>	<b>536,066.36</b>	<b>0.66</b>	<b>0.84</b>

Table 5  
 PY1999 Realization Study for 3rd Earning Claim  
 Study 422d R-1 : Commercial Lighting PSPI

CODE	Sector	End Use Measure	2nd Earning Claim		3rd Earning Claim		3rd EC/2nd EC	
			Measured Peak kW Savings	Measured kWh Savings	Measured Peak kW Savings	Measured kWh Savings	Peak kW Realization Rate	kWh Realization Rate
PSTDAECOLE	Commercial	Lighting	13.19	60,601.12	13.84	58,540.82	1.05	0.97
PSTDAFREEE	Commercial	Lighting	28.20	131,917.83	26.22	131,633.16	0.93	1.00
PSTDAHORTE	Commercial	Lighting	17.47	81,340.61	16.32	74,492.74	0.93	0.92
PSTDAICALE	Commercial	Lighting	17.07	79,583.68	15.81	78,750.65	0.93	0.99
PSTDASLERE	Commercial	Lighting	14.48	84,013.47	18.68	110,955.37	1.29	1.32
<b>Total</b>			<b>90.41</b>	<b>437,456.71</b>	<b>90.87</b>	<b>454,372.74</b>	1.01	1.04

Table 6  
 PY1999 Realization Study for 3rd Earning Claim  
 Study 422e R-1 : Commercial HVAC PSPI

CODE	Sector	End Use	2nd Earning Claim		3rd Earning Claim		3rd EC/2nd EC	
			Measured Peak kW Savings	Measured kWh Savings	Measured Peak kW Savings	Measured kWh Savings	Peak kW Realization Rate	kWh Realization Rate
PSTUC-AC1M	Commercial	HVAC	46.43	275,385.06	67.56	479,580.00	1.46	1.74
PSTUCCHWPM	Commercial	HVAC	36.82	315,169.66	42.80	340,305.00	1.16	1.08
PSTUCCKERM	Commercial	HVAC	83.28	183,491.84	87.01	495,033.00	1.04	2.70
PSTUCELDSM	Commercial	HVAC	18.10	61,130.68	13.77	68,472.00	0.76	1.12
PSTUCHALLM	Commercial	HVAC	29.83	209,589.81	28.66	104,416.00	0.96	0.50
PSTUCURGEM	Commercial	HVAC	15.91	102,715.47	18.53	134,439.00	1.16	1.31
<b>Total</b>			<b>230.37</b>	<b>1,147,482.52</b>	<b>258.33</b>	<b>1,622,245.00</b>	1.12	1.41

Table 7  
 PY1999 Realization Study for 3rd Earning Claim  
 Study 423a R-1: Industrial Process PSP II

CODE	Sector	End Use	2nd Earning Claim		3rd Earning Claim		3rd EC/2nd EC	
			Measured Peak kW Savings	Measured kWh Savings	Measured Peak kW Savings	Measured kWh Savings	Peak kW Realization Rate	kWh Realization Rate
PPLAEMGENM	Industrial	Process	393.07	3,567,160.30	336.09	3,154,416.70	0.86	0.88
PPLCH/B/CM	Industrial	Process	0.00	0.00	0.00	0.00	0.00	0.00
PPLCHFCCM	Industrial	Process	992.79	8,426,917.19	368.05	2,635,145.50	0.37	0.31
PPLEQ-126M	Industrial	Process	73.40	641,080.88	69.99	521,580.40	0.95	0.81
PPLEQNH3M	Industrial	Process	27.81	211,516.00	24.65	162,950.70	0.89	0.77
PPLTODRAM	Industrial	Process	45.45	622,566.00	66.48	3,277,692.00	1.46	5.26
<b>Total</b>			<b>1,532.52</b>	<b>13,469,240.37</b>	<b>865.26</b>	<b>9,751,785.30</b>	0.56	0.72

Table 8  
 PY1999 Realization Study for 3rd Earning Claim  
 Study 423b R-1 : Industrial Lighting PSP II

CODE	Sector	End Use	2nd Earning Claim		3rd Earning Claim		3rd EC/2nd EC	
			Measured Peak kW Savings	Measured kWh Savings	Measured Peak kW Savings	Measured kWh Savings	Peak kW Realization Rate	kWh Realization Rate
PORWIIGUAC	Industrial	Lighting	2.38	35,818.86	0.00	0.00	0.00	0.00
PORWIIGUAE	Industrial	Lighting	126.65	966,924.23	121.46	913,184.64	0.96	0.94
<b>Total</b>			<b>129.03</b>	<b>1,002,743.09</b>	<b>121.46</b>	<b>913,184.64</b>	0.94	0.91

Table 9  
 PY1999 Realization Study for 3rd Earning Claim  
 Study 423c R-1: Industrial Motors PSP II

CODE	Sector	End Use	2nd Earning Claim		3rd Earning Claim		3rd EC/2nd EC	
			Measured Peak kW Savings	Measured kWh Savings	Measured Peak kW Savings	Measured kWh Savings	Peak kW Realization Rate	kWh Realization Rate
PETLERINOM	Industrial	Motors	103.81	1,054,498.00	63.44	1,054,311.33	0.61	1.00
PETSA_JOSM	Industrial	Motors	216.34	1,554,738.71	127.72	1,025,597.57	0.59	0.66
<b>Total</b>			<b>320.15</b>	<b>2,609,236.71</b>	<b>191.16</b>	<b>2,079,908.90</b>	<b>0.60</b>	<b>0.80</b>



Table 10  
 PY1999 Realization Rates by Partner

CODE	Sector	End Use Measure	2nd Earning Claim		3rd Earning Claim		3rd EC/2nd EC	
			Measured Peak kW Savings	Measured kWh Savings	Measured Peak kW Savings	Measured kWh Savings	Peak kW Realization Rate	kWh Realization Rate
<b>ETI - 95PSP106</b>								
PETCL1331E	Commercial	Lighting	37.58	196,177.84	33.60	160,282.28	0.89	0.82
PETCL1333E	Commercial	Lighting	71.38	364,564.84	63.98	295,073.63	0.90	0.81
PETCOASE2E	Commercial	Lighting	18.35	129,219.17	17.35	136,903.86	0.95	1.06
PETCORICTE	Commercial	Lighting	96.98	682,300.37	81.65	565,447.00	0.84	0.83
PETHOEREYE	Commercial	Lighting	112.01	780,166.70	101.54	711,248.23	0.91	0.91
PETHOLCAMM	Commercial	HVAC	48.01	439,391.00	44.88	418,682.40	0.93	0.95
PETHOLITEE	Commercial	Lighting	220.88	1,528,273.66	206.19	1,520,207.75	0.93	0.99
PETHOPARKE	Commercial	Lighting	7.46	39,066.88	7.46	35,234.37	1.00	0.90
PETHOWILLE	Commercial	Lighting	11.18	58,910.18	9.51	46,676.73	0.85	0.79
PETIRESNOC	Commercial	Lighting	0.00	249,839.86	-13.34	108,810.61	0.00	0.44
PETIRESNOE	Commercial	Lighting	77.47	574,695.18	87.77	606,906.88	1.13	1.06
PETLEASEAE	Commercial	Traffic Lighting	147.46	1,188,495.57	147.46	1,188,495.57	1.00	1.00
PETLECRUZE	Commercial	Traffic Lighting	44.41	384,107.50	44.41	384,107.50	1.00	1.00
PETLEELEYE	Commercial	Traffic Lighting	95.73	821,689.32	95.73	821,689.32	1.00	1.00
PETLEILLEE	Commercial	Traffic Lighting	33.96	287,256.55	33.96	287,256.55	1.00	1.00
PETLELANDE	Commercial	Traffic Lighting	162.14	1,301,859.71	162.14	1,301,859.71	1.00	1.00
PETLELROYE	Commercial	Traffic Lighting	17.65	152,327.15	17.65	152,327.15	1.00	1.00
PETLEND-CE	Commercial	Traffic Lighting	108.20	875,616.90	108.20	875,616.90	1.00	1.00
PETLERINOM	Industrial	Motors	103.81	1,054,498.00	63.44	1,054,311.33	0.61	1.00
PETLEWARDE	Commercial	Traffic Lighting	118.00	1,010,933.19	118.00	1,010,933.19	1.00	1.00
PETPRINGSE	Commercial	Lighting	90.72	466,467.34	87.30	405,623.57	0.96	0.87
PETSP1731E	Commercial	Lighting	80.97	446,386.02	74.68	378,005.70	0.92	0.85
PETSP1735E	Commercial	Lighting	60.44	333,048.48	59.33	289,696.98	0.98	0.87
PETSP224E	Commercial	Lighting	70.50	392,981.25	65.38	337,620.79	0.93	0.86
PETSP226E	Commercial	Lighting	68.09	356,254.21	62.37	291,031.84	0.92	0.82
PETSP4VFDM	Commercial	HVAC	12.60	53,071.20	0.00	0.00	0.00	0.00
PETSPSE2AE	Commercial	Lighting	55.50	311,421.84	51.48	265,873.28	0.93	0.85
PETSPSE2BE	Commercial	Lighting	70.92	403,012.72	66.71	356,164.03	0.94	0.88
PETSPSE2CE	Commercial	Lighting	72.02	399,092.15	66.85	340,830.68	0.93	0.85
PETSPSE3AE	Commercial	Lighting	60.39	343,556.31	54.46	289,376.95	0.90	0.84
PETSPSE3BE	Commercial	Lighting	32.93	189,441.51	30.79	166,165.52	0.94	0.88
PETSPSE3CE	Commercial	Lighting	26.59	165,999.43	25.20	152,339.15	0.95	0.92
PETSPSE3DE	Commercial	Lighting	32.20	192,578.04	30.22	172,744.62	0.94	0.90

Table 10  
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PETSPSE4AE	Commercial	Lighting	32.40	165,516.84	29.57	133,309.90	0.91	0.81
PETSPSE4BE	Commercial	Lighting	37.52	197,631.01	34.53	164,220.12	0.92	0.83
PETSPSE4CE	Commercial	Lighting	46.48	238,974.59	42.45	193,185.14	0.91	0.81
PETSPSE4DE	Commercial	Lighting	25.75	135,413.22	23.64	111,854.88	0.92	0.83
PETSPSE4EE	Commercial	Lighting	34.07	174,336.08	31.24	142,367.41	0.92	0.82
PETSPSE4FE	Commercial	Lighting	31.62	167,681.08	29.12	139,633.82	0.92	0.83
PETSPVFDMSM	Commercial	HVAC	26.10	97,281.30	13.63	56,915.52	0.52	0.59
PETUC_BIOE	Commercial	Lighting	33.67	161,936.02	36.65	176,385.89	1.09	1.09
PETUC_H-CE	Commercial	Lighting	4.19	21,977.85	4.30	21,516.35	1.03	0.98
PETUC_H-DE	Commercial	Lighting	19.62	95,901.47	21.42	103,835.73	1.09	1.08
PETUC_H-EE	Commercial	Lighting	3.93	19,958.44	4.31	21,717.51	1.10	1.09
PETUCAREAE	Commercial	Lighting	22.37	130,514.05	24.41	140,848.21	1.09	1.08
PETUCCOOLE	Commercial	Lighting	4.79	32,699.47	5.19	34,070.99	1.08	1.04
PETUCE_ALE	Commercial	Lighting	8.27	41,060.95	9.15	45,341.44	1.11	1.10
PETUCHARDE	Commercial	Lighting	9.81	46,604.08	10.80	51,611.10	1.10	1.11
PETUCICESE	Commercial	Lighting	10.96	61,672.79	12.05	67,153.47	1.10	1.09
PETUCLANTE	Commercial	Lighting	13.65	64,943.94	14.74	71,307.49	1.08	1.10
PETUCMILLE	Commercial	Lighting	11.95	80,214.32	13.33	86,297.06	1.12	1.08
PETUCMSIDE	Commercial	Lighting	3.25	16,586.10	3.59	18,267.69	1.10	1.10
PETUCNE_BE	Commercial	Lighting	7.96	43,283.25	8.63	46,768.11	1.08	1.08
PETUCNE_DE	Commercial	Lighting	19.33	110,991.20	21.49	119,562.85	1.11	1.08
PETUCNE_EE	Commercial	Lighting	8.83	41,889.99	8.20	35,351.92	0.93	0.84
PETUCNE_JE	Commercial	Lighting	0.38	1,773.04	0.42	1,995.39	1.11	1.13
PETUCREETE	Commercial	Lighting	0.75	3,613.26	0.73	3,309.66	0.97	0.92
PETUCT_STE	Commercial	Lighting	0.61	2,911.18	0.64	3,003.98	1.05	1.03
PETUCTUREE	Commercial	Lighting	20.35	96,857.60	20.91	100,484.67	1.03	1.04
<b>ETI - 95PSP105</b>								
PETALROLSC	Commercial	Lighting	5.58	40,639.08	4.16	34,094.98	0.75	0.84
PETLE;EBYE	Commercial	Traffic Lighting	19.14	164,709.09	19.14	164,709.09	1.00	1.00
PETLEABLOE	Commercial	Traffic Lighting	18.52	160,058.00	18.52	160,058.00	1.00	1.00
PETLEAC2BE	Commercial	Traffic Lighting	5.24	45,230.51	5.24	45,230.51	1.00	1.00
PETLEAC2CE	Commercial	Traffic Lighting	0.39	3,456.80	0.39	3,456.80	1.00	1.00
PETLEBY2BE	Commercial	Traffic Lighting	13.80	119,919.38	13.80	119,919.38	1.00	1.00
PETLEBY2CE	Commercial	Traffic Lighting	6.74	57,499.18	6.74	57,499.18	1.00	1.00
PETLE-CCOE	Commercial	Traffic Lighting	73.20	630,272.38	73.20	630,272.38	1.00	1.00

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PETLECO2BE	Commercial	Traffic Lighting	12.47	107,329.32	12.47	107,329.32	1.00	1.00
PETLECO2CE	Commercial	Traffic Lighting	17.06	147,205.52	17.06	147,205.52	1.00	1.00
PETLE-D10E	Commercial	Traffic Lighting	9.54	83,152.35	9.54	83,152.35	1.00	1.00
PETLE-DIAE	Commercial	Traffic Lighting	10.10	86,824.69	10.10	86,824.69	1.00	1.00
PETLEEA2AE	Commercial	Traffic Lighting	13.11	112,798.57	13.11	112,798.57	1.00	1.00
PETLEEA2BE	Commercial	Traffic Lighting	8.85	76,812.65	8.85	76,812.65	1.00	1.00
PETLE-EBAE	Commercial	Traffic Lighting	6.35	53,671.65	6.35	53,671.65	1.00	1.00
PETLEEN2AE	Commercial	Traffic Lighting	15.66	134,553.80	15.66	134,553.80	1.00	1.00
PETLEEN2BE	Commercial	Traffic Lighting	9.69	83,289.50	9.69	83,289.50	1.00	1.00
PETLEEN2CE	Commercial	Traffic Lighting	20.20	174,452.51	20.20	174,452.51	1.00	1.00
PETLEIA2CE	Commercial	Traffic Lighting	7.05	61,098.70	7.05	61,098.70	1.00	1.00
PETLEIS2BE	Commercial	Traffic Lighting	19.59	169,676.67	19.59	169,676.67	1.00	1.00
PETLEIS2CE	Commercial	Traffic Lighting	11.65	100,650.80	11.65	100,650.80	1.00	1.00
PETLEISCOE	Commercial	Traffic Lighting	4.01	34,207.37	4.01	34,207.37	1.00	1.00
PETLEJOSEE	Commercial	Traffic Lighting	10.82	93,772.73	10.82	93,772.73	1.00	1.00
PETLELAZAE	Commercial	Lighting	17.85	156,147.59	17.85	156,254.71	1.00	1.00
PETLE-LOSE	Commercial	Traffic Lighting	54.33	468,983.79	54.33	468,983.79	1.00	1.00
PETLE-MISE	Commercial	Traffic Lighting	8.58	73,413.54	8.58	73,413.54	1.00	1.00
PETLE-NBYE	Commercial	Traffic Lighting	15.61	134,114.32	15.61	134,114.32	1.00	1.00
PETLE-NCOE	Commercial	Traffic Lighting	1.95	16,683.08	1.95	16,683.08	1.00	1.00
PETLE-SACE	Commercial	Traffic Lighting	6.73	58,004.16	6.73	58,004.16	1.00	1.00
PETLES-D1E	Commercial	Traffic Lighting	4.41	37,832.41	4.41	37,832.41	1.00	1.00
PETLES-D2E	Commercial	Traffic Lighting	9.78	84,661.53	9.78	84,661.53	1.00	1.00
PETLES-D6E	Commercial	Traffic Lighting	53.27	458,454.49	53.27	458,454.49	1.00	1.00
PETLE-SFOE	Commercial	Traffic Lighting	2.18	18,567.40	2.18	18,567.40	1.00	1.00
PETLE-SJOE	Commercial	Traffic Lighting	15.46	132,206.39	15.46	132,206.39	1.00	1.00
PETLE-SRAE	Commercial	Traffic Lighting	9.20	79,732.18	9.20	79,732.18	1.00	1.00
PETLETBAYE	Commercial	Traffic Lighting	21.75	188,711.94	21.75	188,711.94	1.00	1.00
PETSA_JOSM	Industrial	Motors	216.34	1,554,738.71	127.72	1,025,597.57	0.59	0.66
<b>Noresco - 95PSP155</b>								
PNOEATORSM	Commercial	HVAC	11.22	44,718.42	6.48	60,468.44	0.58	1.35
PNOLECITYE	Commercial	Traffic Lighting	69.77	610,354.82	69.77	610,354.82	1.00	1.00
PNOLECORDE	Commercial	Traffic Lighting	148.13	1,297,663.42	148.13	1,297,663.42	1.00	1.00
PNOLEETTEE	Commercial	Traffic Lighting	19.57	172,783.63	19.57	172,783.63	1.00	1.00
PNOLEJOSEE	Commercial	Traffic Lighting	399.84	3,560,547.14	399.61	3,558,408.65	1.00	1.00

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PNOLELTOSE	Commercial	Traffic Lighting	13.44	118,655.92	13.44	118,655.92	1.00	1.00
PNOLEMONTE	Commercial	Traffic Lighting	154.46	1,363,478.76	154.46	1,363,478.76	1.00	1.00
PNOLERACYE	Commercial	Traffic Lighting	64.73	577,125.05	64.30	573,257.25	0.99	0.99
PNOLEREEKE	Commercial	Traffic Lighting	75.59	667,270.22	75.59	667,270.22	1.00	1.00
PNOLETINOE	Commercial	Traffic Lighting	71.02	632,286.94	71.02	632,286.94	1.00	1.00
PNOS_ITALE	Commercial	Lighting	114.46	803,565.15	112.92	703,035.68	0.99	0.87
PNOTATAFTE	Commercial	Lighting	90.52	452,807.47	43.52	300,480.15	0.48	0.66
<b>Orion - 95PSP129</b>								
PORALALUME	Commercial	Lighting	126.10	883,681.69	121.30	729,495.37	0.96	0.83
PORCA1800E	Commercial	Lighting	45.52	254,434.86	62.69	444,077.38	1.38	1.75
PORCA1810E	Commercial	Lighting	38.19	273,288.47	45.78	374,962.96	1.20	1.37
PORCA1820E	Commercial	Lighting	45.89	269,595.32	61.62	444,136.61	1.34	1.65
PORCAN160E	Commercial	Lighting	30.82	229,458.96	35.86	299,450.74	1.16	1.31
PORCAN560E	Commercial	Lighting	17.66	129,152.13	20.85	173,177.03	1.18	1.34
PORCAN650E	Commercial	Lighting	40.03	296,401.68	47.29	394,747.79	1.18	1.33
PORCHBUSHE	Commercial	Lighting	30.76	180,736.28	31.17	200,966.04	1.01	1.11
PORCHETONE	Commercial	Lighting	20.06	119,809.88	22.48	147,151.65	1.12	1.23
PORCHHYDEE	Commercial	Lighting	55.12	324,843.93	58.22	349,655.33	1.06	1.08
PORCHNCISE	Commercial	Lighting	57.71	394,867.09	63.15	420,316.98	1.09	1.06
PORCHUOIAE	Commercial	Lighting	134.98	968,893.37	139.58	991,853.56	1.03	1.02
PORDEANZAE	Commercial	Lighting	180.46	626,861.11	215.83	1,530,281.44	1.20	2.44
PORFOHILLE	Commercial	Lighting	63.91	226,918.21	62.46	302,544.13	0.98	1.33
PORFRMONTE	Commercial	Lighting	105.50	656,696.90	96.30	481,248.94	0.91	0.73
PORGR#100E	Commercial	Lighting	2.65	18,945.26	2.67	17,468.56	1.01	0.92
PORGRA#14E	Commercial	Lighting	14.33	84,527.15	14.49	105,517.31	1.01	1.25
PORGRA#36E	Commercial	Lighting	13.98	94,455.59	14.08	95,430.77	1.01	1.01
PORGRA#70E	Commercial	Lighting	9.35	64,375.33	9.41	63,069.48	1.01	0.98
PORGRA#85E	Commercial	Lighting	7.35	58,676.10	7.37	44,576.70	1.00	0.76
PORGRD#43E	Commercial	Lighting	14.96	99,092.90	15.08	103,398.81	1.01	1.04
PORGRD#54E	Commercial	Lighting	16.10	91,918.78	16.29	120,470.44	1.01	1.31
PORGRD#73E	Commercial	Lighting	5.09	30,639.08	5.15	37,117.73	1.01	1.21
PORGRD#78E	Commercial	Lighting	13.39	77,875.49	13.54	99,256.49	1.01	1.27
PORGRE#27E	Commercial	Lighting	12.24	70,908.68	12.38	90,928.11	1.01	1.28
PORGRE#53E	Commercial	Lighting	15.49	100,409.68	15.62	108,358.61	1.01	1.08
PORGRE#71E	Commercial	Lighting	6.16	37,333.88	6.23	44,760.48	1.01	1.20

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PORGRE#79E	Commercial	Lighting	20.02	131,573.33	20.18	138,984.38	1.01	1.06
PORGRLE#6E	Commercial	Lighting	8.35	50,580.29	8.43	60,627.66	1.01	1.20
PORGRND#4E	Commercial	Lighting	15.95	98,608.69	16.11	114,636.58	1.01	1.16
PORGRO#13E	Commercial	Lighting	12.51	87,444.38	12.60	83,628.78	1.01	0.96
PORGRO#21E	Commercial	Lighting	7.22	44,326.34	7.29	52,076.58	1.01	1.17
PORGRO#35E	Commercial	Lighting	14.78	92,331.08	14.92	105,563.46	1.01	1.14
PORGRO#38E	Commercial	Lighting	15.57	92,813.89	15.74	114,020.36	1.01	1.23
PORGRO#62E	Commercial	Lighting	12.17	77,927.06	12.27	85,728.62	1.01	1.10
PORGRO#80E	Commercial	Lighting	6.96	46,643.34	7.01	47,733.51	1.01	1.02
PORGRO#82E	Commercial	Lighting	9.60	55,287.39	9.72	71,567.23	1.01	1.29
PORGRS#31E	Commercial	Lighting	12.20	75,846.88	12.32	87,369.65	1.01	1.15
PORGRY#44E	Commercial	Lighting	13.76	95,210.35	13.85	92,518.25	1.01	0.97
PORGRY#46E	Commercial	Lighting	8.78	52,175.63	8.87	64,370.11	1.01	1.23
PORGRY#58E	Commercial	Lighting	17.25	110,212.01	17.41	121,780.67	1.01	1.10
PORHOOMACE	Commercial	Lighting	32.97	238,109.34	31.14	181,433.91	0.94	0.76
PORKRONOSC	Commercial	Lighting	40.40	324,651.87	0.00	0.00	0.00	0.00
PORKRONOSE	Commercial	Lighting	196.87	1,196,634.10	194.65	1,372,856.60	0.99	1.15
PORNEANGE	Commercial	Lighting	14.52	127,221.48	14.19	122,356.28	0.98	0.96
PORNONBMCE	Commercial	Lighting	83.53	608,546.24	93.98	693,701.23	1.13	1.14
PORNVHICOE	Commercial	Lighting	39.87	227,710.93	37.79	277,805.00	0.95	1.22
PORROFICEC	Commercial	Lighting	0.64	3,782.43	0.30	2,181.68	0.47	0.58
PORROFICEE	Commercial	Lighting	5.66	22,695.35	4.13	18,464.56	0.73	0.81
PORROHIGHC	Commercial	Lighting	6.58	31,854.50	3.24	21,905.40	0.49	0.69
PORROHIGHE	Commercial	Lighting	44.77	165,986.09	39.83	172,578.59	0.89	1.04
PORROLOPEC	Commercial	Lighting	5.64	28,792.17	2.74	18,891.28	0.49	0.66
PORROLOPEE	Commercial	Lighting	18.90	70,660.54	16.45	71,450.09	0.87	1.01
PORROREENC	Commercial	Lighting	4.67	22,219.53	2.31	15,497.51	0.49	0.70
PORROREENE	Commercial	Lighting	20.74	76,836.21	18.59	80,306.33	0.90	1.05
PORROTARYC	Commercial	Lighting	4.08	19,166.67	2.02	13,528.69	0.50	0.71
PORROTARYE	Commercial	Lighting	18.01	65,575.98	16.90	72,595.47	0.94	1.11
PORROTONEC	Commercial	Lighting	4.33	20,685.50	2.14	14,395.74	0.49	0.70
PORROTONEE	Commercial	Lighting	17.76	65,203.88	16.26	70,155.81	0.92	1.08
PORSASRJCE	Commercial	Lighting	419.07	1,740,392.37	359.02	1,802,917.89	0.86	1.04
PORSYMONTE	Commercial	Lighting	48.96	295,285.23	49.45	323,742.29	1.01	1.10
PORVA1546E	Commercial	Lighting	11.94	64,502.10	12.24	66,526.99	1.02	1.03

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PORVA2915E	Commercial	Lighting	6.04	55,120.94	18.05	91,159.12	2.99	1.65
PORVA3225E	Commercial	Lighting	30.71	171,301.88	28.50	170,770.93	0.93	1.00
PORVA6817E	Commercial	Lighting	1.19	19,191.35	9.95	48,042.27	8.36	2.50
PORVA836E	Commercial	Lighting	34.92	175,926.51	34.52	184,127.35	0.99	1.05
PORVA8401E	Commercial	Lighting	105.41	506,962.60	95.87	513,749.61	0.91	1.01
PORVA8500E	Commercial	Lighting	85.78	447,318.36	79.65	452,765.24	0.93	1.01
PORVA852E	Commercial	Lighting	27.73	133,980.04	25.30	136,252.45	0.91	1.02
PORWIIGUAC	Industrial	Lighting	2.38	35,818.86	0.00	0.00	0.00	0.00
PORWIIGUAE	Industrial	Lighting	126.65	966,924.23	121.46	913,184.64	0.96	0.94
<b>Planergy - 95PSP145</b>								
PPLAEMGENM	Industrial	Process	393.07	3,567,160.30	336.09	3,154,416.70	0.86	0.88
PPLCH/B/CM	Industrial	Process	0.00	0.00	0.00	0.00	0.00	0.00
PPLCHFCCM	Industrial	Process	992.79	8,426,917.19	368.05	2,635,145.50	0.37	0.31
PPLEQ-126M	Industrial	Process	73.40	641,080.88	69.99	521,580.40	0.95	0.81
PPLEQNH3M	Industrial	Process	27.81	211,516.00	24.65	162,950.70	0.89	0.77
PPLTODRAM	Industrial	Process	45.45	622,566.00	66.48	3,277,692.00	1.46	5.26
<b>UC Davis - 92PSP073</b>								
PSTDAECOLE	Commercial	Lighting	13.19	60,601.12	13.84	58,540.82	1.05	0.97
PSTDAFREEE	Commercial	Lighting	28.20	131,917.83	26.22	131,633.16	0.93	1.00
PSTDAHORTE	Commercial	Lighting	17.47	81,340.61	16.32	74,492.74	0.93	0.92
PSTDAICALE	Commercial	Lighting	17.07	79,583.68	15.81	78,750.65	0.93	0.99
PSTDASLERE	Commercial	Lighting	14.48	84,013.47	18.68	110,955.37	1.29	1.32
PSTUC-AC1M	Commercial	HVAC	46.43	275,385.06	67.56	479,580.00	1.46	1.74
PSTUCCHWPM	Commercial	HVAC	36.82	315,169.66	42.80	340,305.00	1.16	1.08
PSTUCCKERM	Commercial	HVAC	83.28	183,491.84	87.01	495,033.00	1.04	2.70
PSTUCELDSM	Commercial	HVAC	18.10	61,130.68	13.77	68,472.00	0.76	1.12
PSTUCHALLM	Commercial	HVAC	29.83	209,589.81	28.66	104,416.00	0.96	0.50
PSTUCURGEM	Commercial	HVAC	15.91	102,715.47	18.53	134,439.00	1.16	1.31
<b>Total</b>			<b>9,307</b>	<b>65,688,728</b>	<b>8,315</b>	<b>62,150,730</b>	<b>0.89</b>	<b>0.95</b>

**Protocol Table 6 (items 1-4)**

**PG&E Realization Study of 1999 PowerSaving Partners II Program, Study I.D. 422a R-1 Commerical Lighting**

Table Item		Relative Precision		
Item Number	Description	Estimate	90% Confidence *	80% Confidence
1.A	Pre-installation usage, Base usage, and Base usage per designated unit of measurement.	N/A	N/A	N/A
1.B	Impact Year usage, Impact year usage per designated unit of measurement.	N/A	N/A	N/A
2.A	Claimed Peak kW (Demand) Impacts	4,646	100%	N/A
	Claimed kWh (Energy) Impacts	26,913,648	100%	N/A
	Claimed thm (Therm) Impacts	N/A	100%	N/A
	Measured Peak kW (Demand) Impacts	4,463	100%	N/A
	Measured kWh (Energy) Impacts	27,324,714	100%	N/A
	Measured thm (Therm) Impacts	N/A	100%	N/A
2.B	Per designated unit* Gross Demand Impacts	N/A	N/A	N/A
	Per designated unit* Gross Energy Impacts	N/A	N/A	N/A
	Per designated unit Gross Therm Impacts	N/A	N/A	N/A
	Per designated unit* Net Demand Impacts	N/A	N/A	N/A
	Per designated unit* Net Energy Impacts	N/A	N/A	N/A
	Per designated unit Net Therm Impacts	N/A	N/A	N/A
2.C	Percent change in usage (relative to base usage) of the participant group and comparison group.	N/A	N/A	N/A
2.D	Gross Demand Realization Rate	0.96	N/A	N/A
	Gross Energy Realization Rate	1.02	N/A	N/A
	Gross Therm Realization Rate	N/A	N/A	N/A
	Net Demand Realization Rate	0.96	N/A	N/A
	Net Energy Realization Rate	1.02	N/A	N/A
	Net Therm Realization Rate	N/A	N/A	N/A
3.A	Net-to-Gross ratio based on Avg. Load Impacts	0.90	N/A	N/A
3.B	Net-to-Gross ratio based on Avg. Load Impacts per designated unit* of measurement.	0.90	N/A	N/A
3.C	Net-to-Gross ratio based on Avg. Load Impacts as a percent change from base usage	N/A	N/A	N/A
4.A	Pre-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
	Pre-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A
	Pre-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Pre-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A
4.B	Post-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
	Post-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (comparisor group)	N/A	N/A	N/A

\* The measurement standards used in PSP meet or exceed NAESCO standards which uphold the 90/10 requirement mandated by CPUC Protocols. Hence, all load impact estimates are at or above the 90% precision, 10% confidence interval.

**Protocol Table 6 (items 1-4)**

**PG&E Realization Study of 1999 PowerSaving Partners II Program, Study I.D.422b R-1 Commerical Traffic Lighting**

Table Item		Relative Precision			
Item Number	Description	Estimate	90% Confidence *	80% Confidence	
1.A	Pre-installation usage, Base usage, and Base usage per designated unit of measurement.	N/A	N/A	N/A	
1.B	Impact Year usage, Impact year usage per designated unit of measurement.	N/A	N/A	N/A	
2.A	Gross Peak kW (Demand) Impacts	2,261	100%	N/A	
	Gross kWh (Energy) Impacts	19,474,459	100%	N/A	
	Gross thm (Therm) Impacts	N/A	100%	N/A	
	Net Peak kW (Demand) Impacts	2,260	100%	N/A	
	Net kWh (Energy) Impacts	19,468,453	100%	N/A	
	Net thm (Therm) Impacts	N/A	100%	N/A	
2.B	Per designated unit* Gross Demand Impacts	N/A	N/A	N/A	
	Per designated unit* Gross Energy Impacts	N/A	N/A	N/A	
	Per designated unit Gross Therm Impacts	N/A	N/A	N/A	
	Per designated unit* Net Demand Impacts	N/A	N/A	N/A	
	Per designated unit* Net Energy Impacts	N/A	N/A	N/A	
	Per designated unit Net Therm Impacts	N/A	N/A	N/A	
2.C	Percent change in usage (relative to base usage) of the participant group and comparison group.	N/A	N/A	N/A	
2.D	Claimed Demand Realization Rate	1.00	N/A	N/A	
	Claimed Energy Realization Rate	1.00	N/A	N/A	
	Claimed Therm Realization Rate	N/A	N/A	N/A	
	Measured Demand Realization Rate	1.00	N/A	N/A	
	Measured Energy Realization Rate	1.00	N/A	N/A	
	Measured Therm Realization Rate	N/A	N/A	N/A	
3.A	Net-to-Gross ratio based on Avg. Load Impacts	0.90	N/A	N/A	
3.B	Net-to-Gross ratio based on Avg. Load Impacts per designated unit* of measurement.	0.90	N/A	N/A	
3.C	Net-to-Gross ratio based on Avg. Load Impacts as a percent change from base usage	N/A	N/A	N/A	
4.A	Pre-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A	
	Pre-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A	
	Pre-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A	
	Pre-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A	
	4.B	Post-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
		Post-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A
Post-installation Avg. Hours of Operation (participant group)		N/A	N/A	N/A	
Post-installation Avg. Hours of Operation (comparisor group)		N/A	N/A	N/A	

\* The measurement standards used in PSP meet or exceed NAESCO standards which uphold the 90/10 requirement mandated by CPUC Protocols. Hence, all load impact estimates are at or above the 90% precision, 10% confidence interval.



**Protocol Table 6 (items 1-4)**

**PG&E Realization Study of 1999 PowerSaving Partners II Program, Study I.D. 422c R-1 - Commercial HVAC**

Table Item		Relative Precision		
Item Number	Description	Estimate	90% Confidence *	80% Confidence
1.A	Pre-installation usage, Base usage, and Base usage per designated unit of measurement.	N/A	N/A	N/A
1.B	Impact Year usage, Impact year usage per designated unit of measurement.	N/A	N/A	N/A
2.A	Claimed Peak kW (Demand) Impacts	98	100%	N/A
	Claimed kWh (Energy) Impacts	634,462	100%	N/A
	Claimed thm (Therm) Impacts	N/A	100%	N/A
	Measured Peak kW (Demand) Impacts	65	100%	N/A
	Measured kWh (Energy) Impacts	536,066	100%	N/A
2.B	Measured thm (Therm) Impacts	N/A	100%	N/A
	Per designated unit* Gross Demand Impacts	N/A	N/A	N/A
	Per designated unit* Gross Energy Impacts	N/A	N/A	N/A
	Per designated unit Gross Therm Impacts	N/A	N/A	N/A
	Per designated unit* Net Demand Impacts	N/A	N/A	N/A
	Per designated unit* Net Energy Impacts	N/A	N/A	N/A
2.C	Per designated unit Net Therm Impacts	N/A	N/A	N/A
	Percent change in usage (relative to base usage) of the participant group and comparison group.	N/A	N/A	N/A
2.D	Gross Demand Realization Rate	0.66	N/A	N/A
	Gross Energy Realization Rate	0.84	N/A	N/A
	Gross Therm Realization Rate	N/A	N/A	N/A
	Net Demand Realization Rate	0.66	N/A	N/A
	Net Energy Realization Rate	0.84	N/A	N/A
	Net Therm Realization Rate	N/A	N/A	N/A
3.A	Net-to-Gross ratio based on Avg. Load Impacts	0.95	N/A	N/A
3.B	Net-to-Gross ratio based on Avg. Load Impacts per designated unit* of measurement.	0.95	N/A	N/A
3.C	Net-to-Gross ratio based on Avg. Load Impacts as a percent change from base usage	N/A	N/A	N/A
4.A	Pre-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
	Pre-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A
	Pre-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Pre-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A
4.B	Post-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
	Post-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (comparisor group)	N/A	N/A	N/A

\* The measurement standards used in PSP meet or exceed NAESCO standards which uphold the 90/10 requirement mandated by CPUC Protocols. Hence, all load impact estimates are at or above the 90% precision, 10% confidence interval.

**Protocol Table 6 (items 1-4)**

**PG&E Realization Study of 1999 PowerSaving Partners I Program, Study I.D. 422d R-1 Commercial Lighting**

Table Item		Relative Precision		
Item Number	Description	Estimate	90% Confidence *	80% Confidence
1.A	Pre-installation usage, Base usage, and Base usage per designated unit of measurement.	N/A	N/A	N/A
1.B	Impact Year usage, Impact year usage per designated unit of measurement.	N/A	N/A	N/A
2.A	Claimed Peak kW (Demand) Impacts	90	100%	N/A
	Claimed kWh (Energy) Impacts	437,457	100%	N/A
	Claimed thm (Therm) Impacts	N/A	100%	N/A
	Measured Peak kW (Demand) Impacts	91	100%	N/A
	Measured kWh (Energy) Impacts	454,373	100%	N/A
2.B	Measured thm (Therm) Impacts	N/A	100%	N/A
	Per designated unit* Gross Demand Impacts	N/A	N/A	N/A
	Per designated unit* Gross Energy Impacts	N/A	N/A	N/A
	Per designated unit Gross Therm Impacts	N/A	N/A	N/A
	Per designated unit* Net Demand Impacts	N/A	N/A	N/A
	Per designated unit* Net Energy Impacts	N/A	N/A	N/A
2.C	Per designated unit Net Therm Impacts	N/A	N/A	N/A
	Percent change in usage (relative to base usage) of the participant group and comparison group.	N/A	N/A	N/A
2.D	Gross Demand Realization Rate	1.01	100%	N/A
	Gross Energy Realization Rate	1.04	100%	N/A
	Gross Therm Realization Rate	N/A	N/A	N/A
	Net Demand Realization Rate	1.01	100%	N/A
	Net Energy Realization Rate	1.04	100%	N/A
	Net Therm Realization Rate	N/A	N/A	N/A
3.A	Net-to-Gross ratio based on Avg. Load Impacts	1.00	100%	1%
3.B	Net-to-Gross ratio based on Avg. Load Impacts per designated unit* of measurement.	1.00	100%	1%
3.C	Net-to-Gross ratio based on Avg. Load Impacts as a percent change from base usage	N/A	N/A	N/A
4.A	Pre-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
	Pre-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A
	Pre-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Pre-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A
4.B	Post-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
	Post-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (comparisor group)	N/A	N/A	N/A

\* The measurement standards used in PSP meet or exceed NAESCO standards which uphold the 90/10 requirement mandated by CPUC Protocols. Hence, all load impact estimates are at or above the 90% precision, 10% confidence interval.

**Protocol Table 6 (items 1-4)**

**PG&E Realization Study of 1999 PowerSaving Partners I Program, Study I.D. 422e R-1 Commercial HVAC**

Table Item		Relative Precision			
Item Number	Description	Estimate	90% Confidence *	80% Confidence	
1.A	Pre-installation usage, Base usage, and Base usage per designated unit of measurement.	N/A	N/A	N/A	
1.B	Impact Year usage, Impact year usage per designated unit of measurement.	N/A	N/A	N/A	
2.A	Claimed Peak kW (Demand) Impacts	230	100%	N/A	
	Claimed kWh (Energy) Impacts	1,147,483	100%	N/A	
	Claimed thm (Therm) Impacts	N/A	100%	N/A	
	Measured Peak kW (Demand) Impacts	258	100%	N/A	
	Measured kWh (Energy) Impacts	1,622,245	100%	N/A	
2.B	Measured thm (Therm) Impacts	N/A	100%	N/A	
	Per designated unit* Gross Demand Impacts	N/A	N/A	N/A	
	Per designated unit* Gross Energy Impacts	N/A	N/A	N/A	
	Per designated unit Gross Therm Impacts	N/A	N/A	N/A	
	Per designated unit* Net Demand Impacts	N/A	N/A	N/A	
2.C	Per designated unit* Net Energy Impacts	N/A	N/A	N/A	
	Per designated unit Net Therm Impacts	N/A	N/A	N/A	
	Percent change in usage (relative to base usage) of the participant group and comparison group.	N/A	N/A	N/A	
	2.D	Gross Demand Realization Rate	1.12	N/A	N/A
		Gross Energy Realization Rate	1.41	N/A	N/A
Gross Therm Realization Rate		N/A	N/A	N/A	
Net Demand Realization Rate		1.12	N/A	N/A	
Net Energy Realization Rate		1.41	N/A	N/A	
3.A	Net Therm Realization Rate	N/A	N/A	N/A	
	Net-to-Gross ratio based on Avg. Load Impacts	1.00	N/A	N/A	
3.B	Net-to-Gross ratio based on Avg. Load Impacts per designated unit* of measurement.	1.00	N/A	N/A	
3.C	Net-to-Gross ratio based on Avg. Load Impacts as a percent change from base usage	N/A	N/A	N/A	
4.A	Pre-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A	
	Pre-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A	
	Pre-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A	
	Pre-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A	
	4.B	Post-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
Post-installation Avg. (mean) Sq. Foot (comparison group)		N/A	N/A	N/A	
Post-installation Avg. Hours of Operation (participant group)		N/A	N/A	N/A	
Post-installation Avg. Hours of Operation (comparisor group)		N/A	N/A	N/A	

\* The measurement standards used in PSP meet or exceed NAESCO standards which uphold the 90/10 requirement mandated by CPUC Protocols. Hence, all load impact estimates are at or above the 90% precision, 10% confidence interval.

**Protocol Table 6 (items 1-4)**

**PG&E Realization Study of 1999 PowerSaving Partners II Program, Study I.D. 423a R-1 - Industrial Process**

Table Item		Relative Precision		
Item Number	Description	Estimate	90% Confidence *	80% Confidence
1.A	Pre-installation usage, Base usage, and Base usage per designated unit of measurement.	N/A	N/A	N/A
1.B	Impact Year usage, Impact year usage per designated unit of measurement.	N/A	N/A	N/A
2.A	Claimed Peak kW (Demand) Impacts	1,533	100%	N/A
	Claimed kWh (Energy) Impacts	13,469,240	100%	N/A
	Claimed thm (Therm) Impacts	N/A	100%	N/A
	Measured Peak kW (Demand) Impacts	865	100%	N/A
	Measured kWh (Energy) Impacts	9,751,785	100%	N/A
	Measured thm (Therm) Impacts	N/A	100%	N/A
2.B	Per designated unit* Gross Demand Impacts	N/A	N/A	N/A
	Per designated unit* Gross Energy Impacts	N/A	N/A	N/A
	Per designated unit Gross Therm Impacts	N/A	N/A	N/A
	Per designated unit* Net Demand Impacts	N/A	N/A	N/A
	Per designated unit* Net Energy Impacts	N/A	N/A	N/A
	Per designated unit Net Therm Impacts	N/A	N/A	N/A
2.C	Percent change in usage (relative to base usage) of the participant group and comparison group.	N/A	N/A	N/A
2.D	Gross Demand Realization Rate	0.56	N/A	N/A
	Gross Energy Realization Rate	0.72	N/A	N/A
	Gross Therm Realization Rate	N/A	N/A	N/A
	Net Demand Realization Rate	0.56	N/A	N/A
	Net Energy Realization Rate	0.72	N/A	N/A
	Net Therm Realization Rate	N/A	N/A	N/A
3.A	Net-to-Gross ratio based on Avg. Load Impacts	0.95	N/A	N/A
3.B	Net-to-Gross ratio based on Avg. Load Impacts per designated unit* of measurement.	0.95	N/A	N/A
3.C	Net-to-Gross ratio based on Avg. Load Impacts as a percent change from base usage	N/A	N/A	N/A
4.A	Pre-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
	Pre-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A
	Pre-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Pre-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A
	Post-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
	Post-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A
4.B	Post-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A

\* The measurement standards used in PSP meet or exceed NAESCO standards which uphold the 90/10 requirement mandated by CPUC Protocols. Hence, all load impact estimates are at or above the 90% precision, 10% confidence interval.

**Protocol Table 6 (items 1-4)**

**PG&E Realization Study of 1999 PowerSaving Partners II Program, Study I.D. 423b R-1 Industrial Lighting**

Table Item		Relative Precision		
Item Number	Description	Estimate	90% Confidence *	80% Confidence
1.A	Pre-installation usage, Base usage, and Base usage per designated unit of measurement.	N/A	N/A	N/A
1.B	Impact Year usage, Impact year usage per designated unit of measurement.	N/A	N/A	N/A
2.A	Claimed Peak kW (Demand) Impacts	129	100%	N/A
	Claimed kWh (Energy) Impacts	1,002,743	100%	N/A
	Claimed thm (Therm) Impacts	N/A	100%	N/A
	Measured Peak kW (Demand) Impacts	121	100%	N/A
	Measured kWh (Energy) Impacts	913,185	100%	N/A
	Measured thm (Therm) Impacts	N/A	100%	N/A
2.B	Per designated unit* Gross Demand Impacts	N/A	N/A	N/A
	Per designated unit* Gross Energy Impacts	N/A	N/A	N/A
	Per designated unit Gross Therm Impacts	N/A	N/A	N/A
	Per designated unit* Net Demand Impacts	N/A	N/A	N/A
	Per designated unit* Net Energy Impacts	N/A	N/A	N/A
	Per designated unit Net Therm Impacts	N/A	N/A	N/A
2.C	Percent change in usage (relative to base usage) of the participant group and comparison group.	N/A	N/A	N/A
2.D	Gross Demand Realization Rate	0.94	N/A	N/A
	Gross Energy Realization Rate	0.91	N/A	N/A
	Gross Therm Realization Rate	N/A	N/A	N/A
	Net Demand Realization Rate	0.94	N/A	N/A
	Net Energy Realization Rate	0.91	N/A	N/A
	Net Therm Realization Rate	N/A	N/A	N/A
3.A	Net-to-Gross ratio based on Avg. Load Impacts	0.90	N/A	N/A
3.B	Net-to-Gross ratio based on Avg. Load Impacts per designated unit* of measurement.	0.90	N/A	N/A
3.C	Net-to-Gross ratio based on Avg. Load Impacts as a percent change from base usage	N/A	N/A	N/A
4.A	Pre-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
	Pre-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A
	Pre-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Pre-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A
	Post-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
	Post-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A
4.B	Post-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A

\* The measurement standards used in PSP meet or exceed NAESCO standards which uphold the 90/10 requirement mandated by CPUC Protocols. Hence, all load impact estimates are at or above the 90% precision, 10% confidence interval.

**Protocol Table 6 (items 1-4)**

**PG&E Realization Study of 1999 PowerSaving Partners II Program, Study I.D. 423c R-1 Industrial Motors**

Table Item		Relative Precision		
Item Number	Description	Estimate	90% Confidence *	80% Confidence
1.A	Pre-installation usage, Base usage, and Base usage per designated unit of measurement.	N/A	N/A	N/A
1.B	Impact Year usage, Impact year usage per designated unit of measurement.	N/A	N/A	N/A
2.A	Claimed Peak kW (Demand) Impacts	320	100%	N/A
	Claimed kWh (Energy) Impacts	2,609,237	100%	N/A
	Claimed thm (Therm) Impacts	N/A	100%	N/A
	Measured Peak kW (Demand) Impacts	191	100%	N/A
	Measured kWh (Energy) Impacts	2,079,909	100%	N/A
	Measured thm (Therm) Impacts	N/A	100%	N/A
2.B	Per designated unit* Gross Demand Impacts	N/A	N/A	N/A
	Per designated unit* Gross Energy Impacts	N/A	N/A	N/A
	Per designated unit Gross Therm Impacts	N/A	N/A	N/A
	Per designated unit* Net Demand Impacts	N/A	N/A	N/A
	Per designated unit* Net Energy Impacts	N/A	N/A	N/A
	Per designated unit Net Therm Impacts	N/A	N/A	N/A
2.C	Percent change in usage (relative to base usage) of the participant group and comparison group.	N/A	N/A	N/A
2.D	Gross Demand Realization Rate	0.60	N/A	N/A
	Gross Energy Realization Rate	0.80	N/A	N/A
	Gross Therm Realization Rate	N/A	N/A	N/A
	Net Demand Realization Rate	0.60	N/A	N/A
	Net Energy Realization Rate	0.80	N/A	N/A
	Net Therm Realization Rate	N/A	N/A	N/A
3.A	Net-to-Gross ratio based on Avg. Load Impacts	0.95	N/A	N/A
3.B	Net-to-Gross ratio based on Avg. Load Impacts per designated unit* of measurement.	0.95	N/A	N/A
3.C	Net-to-Gross ratio based on Avg. Load Impacts as a percent change from base usage	N/A	N/A	N/A
4.A	Pre-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
	Pre-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A
	Pre-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Pre-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A
	Post-installation Avg. (mean) Sq. Foot (participant group)	N/A	N/A	N/A
	Post-installation Avg. (mean) Sq. Foot (comparison group)	N/A	N/A	N/A
4.B	Post-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (participant group)	N/A	N/A	N/A
	Post-installation Avg. Hours of Operation (comparison group)	N/A	N/A	N/A

\* The measurement standards used in PSP meet or exceed NAESCO standards which uphold the 90/10 requirement mandated by CPUC Protocols. Hence, all load impact estimates are at or above the 90% precision, 10% confidence interval.