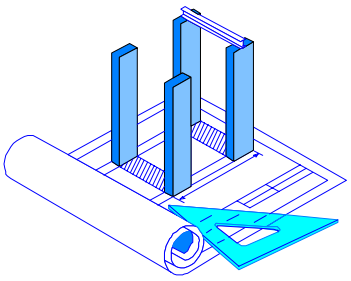
San Diego Gas & Electric
Marketing Programs & Planning
8335 Century Park Court
San Diego, California 92123

1996 & 1997 Nonresidential New Construction Program

Ninth Year Retention Evaluation

March 2006



Study ID No. 1006

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1996 & 1997 NONRESIDENTIAL NEW CONSTRUCTION PROGRAM

NINTH YEAR RETENTION EVALUATION

STUDY ID NO. 1006

Program Description

SDG&E's PY96 and PY97 Nonresidential New Construction (NRNC) Program was called "Savings Through Design." The Savings Through Design Program offered 2 options, Performance and Prescriptive.

The Performance Option was designed to encourage the installation of new construction projects that exceeded California's Title 24 Building Energy Efficiency Standards. SDG&E offered free energy efficiency design review services for commercial projects during the planning or design phase. Cash incentives were available to those willing to revise their building plans to exceed Title 24 standards and achieve energy savings of 10% or greater in cooling, heating, lighting, fans/motors, pumps, and/or hot water.

The Savings Through Design Prescriptive Option encouraged the incorporation of energy efficient technologies into the design of commercial buildings which exceeded building energy efficiency standards, including California's Title 24 Standards. This was accomplished by providing assistance with the review of building plans, by offering cash incentives for standard and custom measures, and by educating target audiences through a variety of communication tactics.

A customer who participated in SDG&E's NRNC Program received a rebate upon building completion. Information regarding customer name, address, phone number, installed measures, measure costs, energy savings and participation date were kept in SDG&E's project tracking system. The retention sample for this study was drawn from this database.

Sampling and Data Collection

The M&E Protocols require that retention studies evaluate the top 10 measures or 50% of the estimated resource value, whichever number of measures is less, excluding miscellaneous measures. For PY96, ten measures account for 39.3% of resource value. For PY97, eight measures constitute 50.9% of resource value. These 18 measures were evaluated for retention.

The M&E Protocols require that PY96 and PY97 program years be combined for retention studies to increase sample sizes for retention measures. Unfortunately, due to the unique measures associated with new construction customers, there is no overlap between PY96 and PY97 measures to be studied.

Two hundred and one customers installed the 10 retention measures to be studied in PY96. SDG&E's sample design was to conduct an on-site census for 9 of the 10 measures. The 10th measure, Electronic Ballasts, was based on the quantity installed. The 30 customers who installed 400 or more of these Ballasts were also targeted for on-site audits.

Two hundred and forty-one customers installed the 8 retention measures to be study in PY97. The PY97 sample was an on-site census for 7 of the 8 study measures. The 8th measure, Lighting Power Density (LPD) accounted for over 30% of the Resource Benefit, Net in the NRNC PY97 program. All 44 customers who's LPD savings were greater than 100,000 kWh plus an additional 10 randomly selected from those jobs whose savings were less than 100,000 kWh accounted for the LPD sample.

SDG&E contracted with KEMA-Xenergy, Inc. to conduct the on-site audits of industrial and military sites in the PY96 and PY97 NRNC program. SDG&E contracted with Volt VIEWtech, Inc. to conduct the on-site audits of commercial customers in the program. The objective of the on-site visits was to verify the number of measures that were still in place and operable – the definition of effective useful life (EUL) per the M&E Protocols. Copies of the on-site data collection forms are provided at the end of this study.

Measures/"Like" Measures

In order to apply any changes in EUL to measures that were not studied, M&E Protocols require that the utility identify any "like" measures within the program (those measures that were not studied but have similar characteristics to measures that were evaluated in this retention study). For SDG&E's PY96 and PY97 NRNC Program, there are no "like" measures.

Econometric Framework

Retention model for estimating median lifetime

The model for lifetime estimation involves the key concepts of the survivor function, the hazard function, and median lifetime. Once these concepts are established, they will be applied to the

data and a maximum-likelihood framework (which brings the concepts and the data together) to produce estimated median lifetime.

The survivor function

For the lifetime of the equipment in question, the survivor function is,

$$S(j) = \text{prob}(\text{lifetime} \geq j)$$

It is the estimated survivor function that allows the formation of an expected median lifetime. Of course, the survivor function must be specified. This is done through a related function: the hazard function.

The hazard function

The hazard function $h(j)$ is the probability of equipment failure (removal, retirement, etc.) in the next unit of time, conditioned on having reached age j. It bears the following relationship to the survivor function.

$$h(j) = -\frac{dS(j)/dj}{S(j)}$$

The hazard function is generally the "intuitive starting point" of any lifetime analysis, since it is structured to reflect the general pattern of equipment failures. The quadratic hazard function allows for U-shaped and linear hazard curves ($b_2 = 0$, below), as well as an exponential survivor function ($b_1 = b_2 = 0$, below) as special cases:[1]

Equation 1 (The quadratic hazard function)

$$-\frac{dS(j)/dj}{S(j)} = h(j) = b_0 + b_1 j + b_2 j^2$$

Note that the hazard function is actually a differential equation in the survivor curve.

Getting the survivor function from the hazard function

The exact structure of the survivor function can be obtained by solving the hazard function (a differential equation in the survivor function) for $S(j)$, imposing the constraint $S(0) = 1$:

[1] Lawless, J.F. (1982). *Statistical Models and Methods for Lifetime Data.* New York: Wiley. 252-253.

Equation 2 (The survivor function)

$$S(j) = e^{-\left(\beta_1 j + \beta_2 j^2 + \beta_3 j^3\right)} \quad \left(\beta_1 = b_0, \quad \beta_2 = \frac{b_1}{2}, \quad \beta_3 = \frac{b_2}{3}\right)$$

The median lifetime

The median age at failure m is then given by the implicit expression,

Equation 3 (Definition of the median m)

$$S(m) = e^{-\left(\beta_1 m + \beta_2 m^2 + \beta_3 m^3\right)} = \frac{1}{2}$$

We now show the steps necessary to estimate the median lifetime from actual data, by defining the "discrete failure function" and the likelihood function.

The discrete failure function

For uniform periods of time (months), the likelihood of failure at age j (before age j+1) is,

Equation 4 (The discrete failure function)

$$F(j) = S(j) - S(j+1)$$

The data, the likelihood function, and estimation

Consider an equipment sample of size n. Let n_j^F be the number of known failures at age j, and let n^Q be the number of known failures whose age at failure is unknown; then the number of survivors by observation at age J is $n - n^Q - \sum_{j=0}^{J} n_j^F$. Furthermore, let ω be the likelihood that the age at failure is unknown, given failure. The log-likelihood function (the log of the likelihood of observing the data) is then,

$$L(\beta, \omega) = \sum_{j=0}^{J} n_j^F \log\left[(1-\omega)F(j)\right] + n^Q \log\left\{\omega\left[1 - S(J+1)\right]\right\} + \left(n - n^Q - \sum_{j=0}^{J} n_j^F\right) \log S(J+1).$$

The log-likelihood function can be maximized with respect to its arguments just as a sum-of-squares function can be minimized in a standard regression problem. Standard numerical and grid-search methods can be used to maximize the log-likelihood function. Once estimates are obtained for the vector of coefficients β, the median lifetime can be estimated using Equation 3.

The estimated variance of β, on which the standard errors of its elements are based, is a fairly complex calculation and one which will not be expressly derived here, although the calculation is based on the expectation of the second-derivative matrix for the log-likelihood function:

$$\mathrm{VAR}(\beta) = \left(- \mathrm{E} \frac{\partial^2 \mathrm{L}}{\partial \beta \partial \beta'} \right)^{-1}$$

The estimated median is a nonlinear function of β; as such, its standard error can be estimated dependably for large samples, based on $\mathrm{VAR}(\beta)$.

Solving data problems--developing independent and dependent failures

Lifetime estimation using maximum likelihood requires the statistical independence of failures. Sometimes equipment failures are indeed independent, as when failures occur due to age or manufacturing weaknesses. However, in many cases failures are not independent--that is, they are "dependent"--as when, for example, a "cluster" or "bank" of lighting measures are jointly removed during a remodeling.

Independent failures can easily be handled using the maximum likelihood framework described above. Fortunately, dependent failures can also be handled in a similar fashion. A cluster of dependent failures can be viewed as an independent failure in its own right, one of numerous observed clusters, each of which is subject to the possibility of independent failure. The maximum likelihood framework can simply be applied to the clustered data.

Modeling and estimating with independent and dependent failures

When any one piece of equipment is subject to both independent and dependent failure, the hazard function can be modified accordingly (ignoring the event of both types of failures occurring jointly):

$$\mathrm{h}(\mathrm{j}) = \mathrm{h}_{\mathrm{ind}}(\mathrm{j}) + \mathrm{h}_{\mathrm{dep}}(\mathrm{j})$$

Independent failures are bound to be age-dependent, so that,

$$\mathrm{h}_{\mathrm{ind}}(\mathrm{j}) = \mathrm{b}_0^{\mathrm{ind}} + \mathrm{b}_1 \mathrm{j} + \mathrm{b}_2 \mathrm{j}^2$$

Dependent failures are mostly likely age-independent (with respect to the building-remodeling effect, we expect the age of the equipment to be irrelevant), so that,

$$h_{dep}(j) = b_0^{dep}$$

This yields a new survivor function (and, implicitly, a new median life that can be estimated based on the joint use of independent and dependent failure data):

$$S(j) = e^{-\left[\left(\beta_1^{ind} + \beta_1^{dep}\right)j + \beta_2 j^2 + \beta_3 j^3\right]}$$

The variance matrix for the joint estimation problem can be constructed, as can the standard error for the jointly estimated median lifetime, represented by the expression,

$$S(m) = e^{-\left[\left(\beta_1^{ind} + \beta_1^{dep}\right)j + \beta_2 m^2 + \beta_3 m^3\right]} = \frac{1}{2}$$

M&E PROTOCOLS TABLE 6

RESULTS USED TO SUPPORT

PY96 & PY97 FOURTH EARNINGS CLAIM

FOR

NONRESIDENTIAL NEW CONSTRUCTION PROGRAM

NINTH YEAR RETENTION EVALUATION

MARCH 2006

STUDY ID NO. 1006

TABLE 6 for RETENTION STUDIES
PROGRAM: NRNC
YEAR(S): PY96 & PY97

	1. Enduse	1. Measure	*2. ex-ante* EUL	*2. ex-ante* EUL Source	*3. ex-post* EUL from Study	*4. ex-post* EUL for 3rd & 4th claim	5. Standard Error	6. Upper & lower bounds @ 80% Conf Int		7. P Value	8. Realization Rate	9. "Like" Measures to be Adjusted
PY96	WHOLE	(2) 800 HP Aeration Blower	15	****	NA	15.0	NA	NA	NA	NA	1.00	1
PY96	WHOLE	VAV w/occupancy sensors	15	**	NA	15.0	NA	NA	NA	NA	1.00	2
PY96	WHOLE	ASD's AHU's	15	**	NA	15.0	NA	NA	NA	NA	1.00	3
PY96	WHOLE	241 Ton Cooling Tower	15	****	NA	15.0	NA	NA	NA	NA	1.00	4
PY96	WHOLE	T-8 El Bal (4ft/2la)	16	**	27.8	27.8	8.9	16.4	39.2	18.4%	1.74	5
PY96	WHOLE	ASD's (2)-600HP Influent & Pump	15	**	NA	15.0	NA	NA	NA	NA	1.00	6
PY96	WHOLE	York Chiller YKRCQCH2-CVC	20	****	NA	20.0	NA	NA	NA	NA	1.00	7
PY96	WHOLE	ASD/VSD on 6 VAV Systems	15	**	NA	15.0	NA	NA	NA	NA	1.00	8
PY96	WHOLE	Chiller 1W/VFD, 2W/O VFD	20	****	NA	20.0	NA	NA	NA	NA	1.00	9
PY96	WHOLE	Chillers York 6D8F1-CTH	20	****	NA	20.0	NA	NA	NA	NA	1.00	10
PY97	WHOLE	LPD	18	***	21.6	18.0	3.1	17.6	25.62	24.4%	1.00	11
PY97	WHOLE	200 HP ASD secondary chilled wtr pump	20	****	NA	20.0	NA	NA	NA	NA	1.00	12
PY97	WHOLE	ASD's on 7 SA and 7 RA Fans	15	***	NA	15.0	NA	NA	NA	NA	1.00	13
PY97	WHOLE	VAV Fume Hoods	15	***	NA	15.0	NA	NA	NA	NA	1.00	14
PY97	WHOLE	ASD's on (4) hp Sewer Pumps	15	***	NA	15.0	NA	NA	NA	NA	1.00	15
PY97	WHOLE	600 tn Cent Chillers 1 w & 1 w/o ASD	20	****	NA	20.0	NA	NA	NA	NA	1.00	16
PY97	WHOLE	Water Cooled DX VAV units	15	***	NA	15.0	NA	NA	NA	NA	1.00	17
PY97	WHOLE	New 200 HP Air Compressor w/Demand Expdr	20	****	NA	20.0	NA	NA	NA	NA	1.00	18

# above	9. "Like" Measures to be Adjusted	
	NONE	

*M&E Protocols Appendix "F"

**Advice Letter filing 957-E-A/986-G-A: Feb 1, 1996

***Advice Letter filing 1001-E/1030-G: Oct 1, 1996

**** Custom Job: Engineering Judgement

Note: NA indicates that no failures were observed

Note: The LPD ex post EUL from Study is a weighted average of the commercial and military/industrial EULs, 153.2 and 8.7 years, respectively (weights equalling 66% and 34%, respectively, based on the distribution of watts-savings). The standard error calculation is structured accordingly.

M&E PROTOCOLS TABLE 7

DATA QUALITY AND PROCESSING

DOCUMENTATION

FOR

NONRESIDENTIAL NEW CONSTRUCTION PROGRAM

NINTH YEAR RETENTION EVALUATION

MARCH 2006

STUDY ID NO. 1006

M&E PROTOCOLS TABLE 7

DATA QUALITY AND PROCESSING DOCUMENTATION

For Nonresidential New Construction Program

Ninth Year Retention Evaluation

March 2006

Study ID No. 1006

B. Retention Studies

1. OVERVIEW INFORMATION

a. Study Title and Study ID:

1996 & 1997 Nonresidential New Construction Program – Ninth Year Retention Evaluation, March 2006, Study ID No. 1006.

b. Program, Program Year(s), and Program Description (Design):

Nonresidential New Construction Program for the 1996 and 1997 program years. The Program was designed to encourage the design and installation of new construction projects that exceeded California's Title 24 Building Energy Efficiency Standards.

c. End Uses and Measures Covered:

Whole Building end use. The measures are identified in section "1.e. Analysis sample size " below and in Table 6.

d. Methods and Models Used:

See the section of the report entitled Econometric Framework for a complete overview of the final model specifications.

e. Analysis sample size:

Program Year	Measure	# of Customers in Program	# of Installations in Program	# of Measures Installed in Program	# of Measures in Sample Frame	Date of Retention Studies
PY96	(2) 800 HP Aeration Blower	1	2	2	2 2 2 2	Sep 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY96	VAV w/occupancy sensors	1	140	140	140 140 140 140	Oct 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY96	ASD's AHU's	1	1	1	1 1 1 1	Nov 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY96	241 Ton Cooling Tower	1	1	1	1 1 1 1	Oct 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY96	T-8 El Bal (4ft/2la)	196	52,473	52,473	32,106 33,141 33,565 33,565	Aug-Dec 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY96	ASD's (2)-600HP Influent & Pump	1	2	2	2 2 2 2	Sep 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY96	York Chiller YKRCQCH2-CVC	1	1	1	1 1 1 1	Sep 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY96	ASD/VSD on 6 VAV Systems	1	12	12	12 12 12 12	Sep 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY96	Chiller 1W/VFD, 2W/O VFD	1	3	3	3 3 3 3	Nov 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY96	Chillers York 6D8F1-CTH	1	2	2	2 2 2 2	Sep 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005

Program Year	Measure	# of Customers in Program	# of Installations in Program	# of Measures Installed in Program	# of Measures in Sample Frame	Date of Retention Studies
PY97	Lighting Power Density (LPD)	233	277	277	63 66 66 66	Aug 1999-Jan 2000 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY97	200 HP ASD secondary chilled wtr pump	1	8	8	8 8 8 8	Sep 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY97	ASD's on 7 SA and 7 RA Fans	1	14	14	14 14 14 14	Nov 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY97	VAV Fume Hoods	2	83	83	83 83 83 83	Oct 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY97	ASD's on (4) hp Sewer Pumps	1	4	4	4 4 4 4	Dec 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY97	600 tn Cent Chillers 1 w & 1 w/o ASD	1	2	2	2 2 2 2	Oct 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY97	Water Cooled DX VAV units	1	23	23	23 23 23 23	Jan 2000 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005
PY97	New 200 HP Air Compressor w/Demand Expdr	1	1	1	1 1 1 1	Aug 1999 Jun – Nov 2001 May – Oct 2003 Aug – Oct 2005

2. DATABASE MANAGEMENT

a. Data sources:

The data came from the following sources:

- Customer name, address, phone number, installed measures, and participation date from the program tracking database
- Measures were determined to be in place and operable by the on-site data collection described in the section of the report entitled Sampling and Data Collection.

The data were merged together to form the dataset for the econometric analysis leading to the estimated Effective Useful Life

b. Data Attrition:

There was minimal data attrition as a result of uncompleted on-site audits. On-site audits were completed on 94% to 100% of the targeted sample as shown in section "3.b. Survey information" below. Table "1.e Analysis sample size" above shows the number of measures in the sample and the participant population.

c. Data Quality Checks:

The data sets for the analysis were merged in SAS by the appropriate key variables. Counts of the data sets before and after the merges were verified to ensure accurate merging.

d. Unused collected data:

None.

3. SAMPLING

a. Sampling procedures and protocols:

The sample for PY96 was a census for 9 of the 10 measures. The 10^{th} measure, Electronic Ballasts, was based on the quantity installed. The 30 customers who installed 400 or more of these Ballasts were also in the sample design. The PY97 sample was a census for 7 of the 8 measures. The 8^{th} measure, Lighting Power Density (LPD) accounted for over 30% of the Resource Benefit, Net in the NRNC PY97 program. All 44 customers who's LPD savings were greater than 100,000 kWh plus an additional 10 randomly selected from those jobs whose savings were less than 100,000 kWh accounted for the LPD sample. Section "1.e Analysis sample size" above shows how the sample covered the participant population.

b. Survey information:

Copies of the surveys are attached at the end of the report.

Data Collection Results: The survey completed response rate ranged from 94% to 100% as indicated in the table:

On-Site Audit Response Rate

Year of Data Collection	NRNC 1996			NRNC 1997		
	Target	Completed	Percent	Target	Completed	Percent
1999	35	34	97%	58	55	95%
2001	37	36	97%	59	59	100%
2003	37	36	97%	57	57	100%
2005	35	33	94%	57	56	98%

c. Statistical Descriptions:

Measure	Independent or dependent failure analysis (see report)	Variable Designation (see report)	Sample Size (observations or failures)	Age of failure (months)
LPD	Dependent*[2]	n	341	Not applicable
		n^Q	85	103
T-8 El Bal (4ft/2la)	Dependent*[3]	n	129	Not applicable
		n^Q	6	115
		n_j^F	3	90
		n_j^F	1	91
		n_j^F	1	110
		n_j^F	4	115
		n_j^F	2	114
		n_j^F	4	109
		n_j^F	2	113
		n_j^F	1	112
		n_j^F	3	111
		n_j^F	1	112
		n_j^F	1	113
		n_j^F	1	109
The industrial and military portion of the study was not updated, because of inadequate data. *A group of measures is said to have undergone "dependent failure" if the number of failures is more than 20% of the group. A typical set of dependent failures is 100% of the group. For dependent failures, n is the number of groups, not the number of measures in the group.				

4. DATA SCREENING AND ANALYSIS

a. Outliers and Missing Data Points:

No outliers and no missing data.

b. Background Variables:

Age is the only variable in the life analysis.

c. Screened Data:

[2] Approximate 0.6% of observations failed as independent failures. Given this small number of failures, the independent failure analysis that might have accompanied the dependent analysis was suppressed.

[3] Approximate 0.6% of observations failed as independent failures. Given this small number of failures, the independent failure analysis that might have accompanied the dependent analysis was suppressed.

As in the 2001 report, a negligible percentage of failures occurred as independent failures. Given this small number of failures, the independent failure analysis that might have accompanied the dependent analysis was suppressed.

In addition, there were no substantial failure data for the military industrial and military sector beyond the data of the 2001 report. Thus, results from the 2001 report are maintained here for the military and industrial sections (the larger commercial sector, of course, was subject to study, as reported above).

d. Model statistics:

See M&E Protocol Table 6.

e. Specification:

Measure	Specification for dependent failures	Specification for independent failures	Mixed estimation
LPD	Exponential	NA	None
T-8 El Bal (4ft/2la)	Exponential	NA	None

1) Heterogeneity: See section of the report entitled "Econometric Framework."

2) Omitted Factors: None omitted.

f. Error in Measuring Variables:

NA.

g. Influential Data Points:

None.

h. Missing Data:

None.

i. Precision:

The calculation for the standard error is based on the expectation of the second-derivative matrix for the log-likelihood function.

MEASURE RETENTION SURVEYS

FOR

NONRESIDENTIAL NEW CONSTRUCTION PROGRAM

NINTH YEAR RETENTION EVALUATION

MARCH 2006

STUDY ID NO. 1006

PY96 and PY97 SDG&E Retention Study

Nonresidential New Construction – Commercial Sector

Aug 1999-Jan 2000
Jun – Nov 2001
May – Oct 2003
Aug – Oct 2005

Site Name=>

Prem ID =>

Program=>

Site Address=>

1. Measure	New Qty	No. Verified	Plus %	No. Operable	No. Removed	Date Removed
(2) 800 HP Aeration Blower						
VAV w/occupancy sensors						
ASD's AHU's						
241 Ton Cooling Tower						
T-8 El Bal (4ft/2la)						
ASD's (2)-600HP Influent & Pump						
York Chiller YKRCQCH2-CVC						
ASD/VSD on 6 VAV Systems						
Chiller 1W/VFD, 2W/O VFD						
Chillers York 6D8F1-CTH						
LPD						
200 HP ASD secondary chilled wtr pump						
ASD's on 7 SA and 7 RA Fans						
VAV Fume Hoods						
ASD's on (4) hp Sewer Pumps						
600 tn Cent Chillers 1 w & 1 w/o ASD						
Water Cooled DX VAV units						
New 200 HP Air Compressor w/Demand Expdr						

VIEWtech

SDG&E NRNC – Military and Industrial Survey for PY96 & PY97

Aug 1999-Jan 2000
Jun – Nov 2001
May – Oct 2003
Aug – Oct 2005

SDG&E PY96 & PY97 NRNC Program - Military and Industrial Sector
Measure Retention Survey

Site_nbr: **Site_sec:** **PART:**

Site_nm:

Rank: **Address:**

Site_Cty:

Bldg_sz: **Bldg_lgt:**

ENDUSE:

Site Contact (DB): _____
Contact Ph: _____

Alternate contact name: _____
Alternate contact phone: _____

Surveyor: _____
Suvey Date: _____

Contract	MSR #	NEW DESC	kWh Sav.	kW Red.	Th. Sav.	MSR LOC	Ins. Qty	Run Hrs	Ver. Schedule (incl.date of change in schedule)

SDG&E PY96 & PY97 NRNC Program - Military and Industrial Sector
Measure Retention Survey

Site_nbr: **Site_sec:** **PART:**

Site_nm:

Rank: **Address:**

Site_Cty:

Bldg_sz: **Bldg_lgt:**

ENDUSE:

Site Contact (DB): _____
Contact Ph: _____

Alternate contact name: _____
Alternate contact phone: _____

Surveyor: _____
Suvey Date: _____

SURVEY DISPOSITION

Audit Completed?: [ ]Yes [ ]No (check one)

Reason for not completed: [ ]
1 = Unable to reach/contact.
2 = Changed mind about participation in study.
3 = Premise closed/not operating.
4 = Site/contact info incorrect and could not find alternate contact.
5 = Requested to call back, could not complete call.
6 = Rescheduled upon arrival at site.
7 = Other: Describe:

DISCREPANCIES

Reason for discrepance in counts (check one and describe if necessary)
[ ]=Removed, not replaced (include date of rernoval:,
[ ]=Never installed
[ ]=Exceeds tracking system counts (describe reasons for additional eqmt, eg, retrofits part of SDG&E Program in 1997).
[ ]=Removed, replace with more efficient equipment
[ ]=other, describe situation fully

Description/Comments:

SDG&E PY96 & PY97 NRNC Program - Military and Industrial Sector
Measure Retention Survey

Site_nbr: **Site_sec:** **PART:**
Site_nm:
Rank: **Address:**
Site_Cty:
Bldg_sz: **Bldg_lgt:**

Site Contact (DB): _____
Contact Ph: _____

Alternate contact name: _____
Alternate contact phone: _____

Surveyor: _____
Suvey Date: _____

Facility Tenancy/Ownership:

Have Tenant and Owner remained the same? [ ] Yes [ ] No (check one)
If NO, what best describes the situation [ ] (select one, describe below)

1. New tenant-same owner.
2. Same tenant-New owner
3. New tenant-New owner
4. Premise closed.

Description/Comments:

Building/Facility Configuration:

Check one box that represents the facility layout (check all that apply, describe below):
[ ] Same as time of installation.
[ ] Same tenant, had tenant improvements
[ ] Same tenant, increased floorspace
[ ] Same tenant, decreased floorspace
[ ] New tenant, no tenant improvements
[ ] New tenant, and had tenant improvements
[ ] New tenant, increased floorspace
[ ] New tenant, decreased floorspace, ie, there is empty floorspace.

Description/Comments: