

## **ATTACHMENT 2**

### **Cost Effectiveness Results**

Tables 0-1 through 0-19 present the measure level cost effectiveness ratios. Shaded cells indicate a measure cost effectiveness ratio that is larger than the program level ratio. Blank cells indicate the climate zone or fuel type is not applicable for that utility area. Cells with an asterisk (\*) indicate that the zone is served by that utility, but savings were not available to test the measure.<sup>1</sup>

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<sup>1</sup> This occurs only for zones 6 and 14 in the PG&E area and for zone 16 in the SCE area.

**Table 0-1: Non-Weather Sensitive Measures**

**Non Weather Sensitive Measures**

Program B/C Ratio:	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
	Modified Participant Test				Utility Test			
Measure	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
CFL Porch Lights								
Multi-family	0.46	0.65			0.30	0.45		
Mobile Home	0.46	0.65			0.30	0.45		
Single Family		0.95				0.66		
CFLs								
Multi-family								
Mobile Home								
Single Family								
Faucet Aerators								
MF, Electric WH								
MF, Gas WH								
MH, Electric WH								
MH, Gas WH								
SF, Electric WH								
SF, Gas WH								
Low Flow Showerheads								
MF, Electric WH								
MF, Gas WH								
MH, Electric WH								
MH, Gas WH								
SF, Electric WH								
SF, Gas WH								
Outlet Gaskets								
MF, Electric SH		0.44				0.15		
MF, Gas SH	0.14		0.25	0.17	0.08		0.11	0.06
MH, Electric SH		0.75				0.26		
MH, Gas SH	0.15		0.54	0.27	0.09		0.23	0.10
SF, Electric SH		0.75			0.28	0.26		
SF, Gas SH	0.16		0.54	0.27	0.09		0.23	0.10
Refrigerators								
Multi-family								
Mobile Home								
Single Family								
Water Heater Blankets								
MF, Electric WH								
MF, Gas WH								
MH, Electric WH								
MH, Gas WH								
SF, Electric WH								
SF, Gas WH								
Water Heater Pipe Wrap								
MF, Electric WH								
MF, Gas WH								
MH, Electric WH								
MH, Gas WH								
SF, Electric WH								
SF, Gas WH								
Water Heater								
MF, Electric WH	0.16	0.41	0.20		0.10	0.28	0.11	
MF, Gas WH	0.07		0.11	0.10	0.06		0.08	0.09
MH, Electric WH	0.26	0.67	0.32		0.16	0.45	0.18	
MH, Gas WH	0.14		0.21	0.19	0.11		0.15	0.18
SF, Electric WH	0.26	0.67	0.32		0.16	0.45	0.18	
SF, Gas WH	0.14		0.21	0.19	0.11		0.15	0.18

**Table 0-2: Central Air Conditioning**

Central Air Conditioning, Multi-Family

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.03				0.02			
3	0.01				0.01			
4	0.03				0.02			
5	0.00				0.00			
6	0.02	0.02			0.01	0.01		
7			0.06				0.02	
8		0.02				0.02		
9		0.03				0.02		
10		0.12	0.13			0.08	0.06	
11	0.11				0.06			
12	0.07				0.04			
13	0.20	0.17			0.12	0.11		
14	0.12	0.12	0.19		0.07	0.08	0.08	
15		0.33	0.56			0.22	0.25	
16	0.09	0.09			0.05	0.06		

Central Air Conditioning, Mobile Home

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.05				0.03			
3	0.01				0.01			
4	0.02				0.01			
5	0.00				0.00			
6	0.02	0.06			0.01	0.04		
7			0.02				0.01	
8		0.09				0.06		
9		0.12				0.08		
10		0.15	0.15			0.10	0.07	
11	0.14				0.08			
12	0.13				0.07			
13	0.20	0.47			0.12	0.32		
14	0.18	0.16	0.18		0.11	0.11	0.08	
15		0.94	0.27			0.64	0.12	
16	0.11	0.24			0.06	0.16		

Central Air Conditioning, Single Family

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.05				0.03			
3	0.01				0.01			
4	0.02				0.01			
5	0.00				0.00			
6	0.02	0.02			0.01	0.01		
7			0.06				0.03	
8		0.06				0.04		
9		0.09				0.06		
10		0.12	0.19			0.08	0.08	
11	0.13				0.08			
12	0.12				0.07			
13	0.20	0.15			0.12	0.10		
14	0.18	0.16	0.34		0.10	0.11	0.15	
15		0.33	0.80			0.22	0.35	
16	0.11	0.13			0.06	0.09		

**Table 0-3: Room Air Conditioning**

**Room Air Conditioning, Multi-Family**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.10				0.06			
3	0.03				0.02			
4	0.08				0.05			
5	0.01				0.00			
6	0.05	0.04			0.03	0.02		
7			0.08				0.03	
8		0.05				0.03		
9		0.11				0.08		
10		0.18	0.38			0.12	0.17	
11	0.33				0.19			
12	0.27				0.16			
13	0.50	0.27			0.29	0.18		
14	0.35	0.39	0.54		0.21	0.26	0.24	
15	0.61	0.81			0.41	0.35		
16	0.28	0.00			0.16	0.00		

**Room Air Conditioning, Mobile Home**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.12				0.07			
3	0.03				0.02			
4	0.06				0.03			
5	0.01				0.00			
6	0.04	0.03			0.03	0.02		
7			0.07				0.03	
8		0.05				0.03		
9		0.12				0.08		
10		0.19	0.20			0.13	0.09	
11	0.35				0.20			
12	0.31				0.18			
13	0.56	0.41			0.33	0.28		
14	0.47	0.35	0.36		0.27	0.23	0.16	
15		0.83	0.86			0.56	0.38	
16	0.29	0.21			0.17	0.14		

**Room Air Conditioning, Single Family**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.12				0.07			
3	0.03				0.02			
4	0.06				0.03			
5	0.01				0.00			
6	0.04	0.03			0.03	0.02		
7			0.07				0.03	
8		0.05				0.03		
9		0.12				0.08		
10		0.19	0.20			0.13	0.09	
11	0.35				0.20			
12	0.31				0.18			
13	0.56	0.41			0.33	0.28		
14	0.47	0.35	0.36		0.27	0.23	0.16	
15		0.83	0.86			0.56	0.38	
16	0.29	0.21			0.17	0.14		

**Table 0-4: Caulking****Caulking, Multi-Family, Electric SH**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.33				0.16			
2	0.23				0.11			
3	0.29				0.14			
4	0.29				0.14			
5	0.25				0.12			
6	*	0.09				0.03		
7			0.21					0.07
8		0.09				0.03		
9		0.11				0.04		
10		0.11	0.25			0.04	0.09	
11	0.33				0.16			
12	0.29				0.14			
13	0.27	0.12			0.13	0.04		
14	*	0.18	0.26			0.06	0.09	
15		0.09	0.18			0.03	0.06	
16	0.48	*			0.23			

**Caulking, Multi-Family, Gas SH**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.17				0.10			
2	0.15				0.09			
3	0.18				0.11			
4	0.15			1.37	0.09			0.53
5	0.20			1.37	0.12			0.53
6	*			1.37				0.53
7			0.36	1.33			0.17	0.51
8				0.76				0.29
9				0.91				0.35
10			0.26	0.91			0.12	0.35
11	0.17				0.10			
12	0.16				0.09			
13	0.18			2.13	0.10			0.83
14	*		0.27	3.46			0.12	1.34
15			0.22	1.07			0.10	0.41
16	0.13			4.11	0.07			1.59

**Table 0-4 (cont'd.): Caulking****Caulking, Mobile Home, Electric SH**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.27				0.13			
2	0.19				0.09			
3	0.14				0.07			
4	0.16				0.08			
5	0.18				0.08			
6	*	0.13				0.05		
7			0.16				0.06	
8		0.12				0.04		
9		0.14				0.05		
10		0.16	0.19			0.06	0.07	
11	0.17				0.08			
12	0.23				0.11			
13	0.21	0.20			0.10	0.07		
14	*	0.24	0.16			0.09	0.06	
15		0.15	0.10			0.05	0.04	
16	0.20	*			0.10			

**Caulking, Mobile Home, Gas SH**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.16				0.09			
2	0.17				0.10			
3	0.14				0.08			
4	0.15			0.85	0.09			0.33
5	0.17			0.55	0.10			0.21
6	*			0.55				0.21
7			0.65	0.45		0.29		0.17
8				0.30				0.12
9				0.30				0.12
10			0.47	0.49			0.21	0.19
11	0.12				0.07			
12	0.17				0.10			
13	0.25			0.85	0.14			0.33
14	*		0.49	0.85			0.22	0.33
15			0.36	0.30			0.16	0.12
16	0.12			0.49	0.07			0.16

**Table 0-4 (cont'd.): Caulking**  
**Caulking, Single Family, Electric SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.37				0.18			
2	0.31				0.15			
3	0.31				0.15			
4	0.30				0.14			
5	0.33				0.16			
6	*	0.12				0.04		
7			0.25					0.09
8		0.10				0.04		
9		0.13				0.04		
10		0.14	0.30			0.05	0.11	
11	0.31				0.15			
12	0.34				0.16			
13	0.24	0.18			0.12	0.06		
14	*	0.22	0.25			0.08	0.09	
15		0.14	0.20			0.05	0.07	
16	0.39	*			0.19			

**Caulking, Single Family, Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.31				0.18			
2	0.23				0.14			
3	0.33				0.20			
4	0.34				1.46	0.20		0.57
5	0.36				1.10	0.21		0.42
6	*				2.74			1.06
7			0.58	1.38			0.26	0.53
8				1.16				0.45
9				1.40				0.54
10			0.68	1.28			0.31	0.50
11	0.36				0.21			
12	0.34				0.20			
13	0.34				1.71	0.20		0.66
14	*		0.93	1.71			0.42	0.66
15			0.42	0.67			0.18	0.26
16	0.25				1.05	0.15		0.75

**Table 0-5: Ceiling Insulation****Ceiling Insulation, Multi-Family, Electric SH**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	3.78				1.80			
2	2.76				1.32			
3	1.44				0.69			
4	1.29				0.61			
5	1.50				0.72			
6	*	4.12				1.46		
7			1.26				0.45	
8		3.94				1.40		
9		4.47				1.58		
10		4.70	1.86			1.67	0.67	
11	3.40				1.62			
12	2.93				1.40			
13	1.89	5.86			0.90	2.08		
14	*	7.83	3.03			2.78	1.09	
15		2.77	2.08			0.98	0.75	
16	3.35	*			1.60			

**Ceiling Insulation, Multi-Family, Gas SH**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	1.84				1.07			
2	1.40				0.81			
3	1.25				0.72			
4	0.97			2.20	0.56			0.83
5	0.70			1.57	0.41			0.60
6	*			1.58				0.60
7			0.88	1.54		0.38	0.58	
8				0.97				0.37
9				1.20				0.46
10			1.20	1.35			0.51	0.51
11	1.79				1.01			
12	1.15				0.64			
13	1.36			4.09	0.75			1.55
14	*		1.99	2.90			0.86	1.10
15			1.79	1.16			0.70	0.44
16	1.26			1.95	0.77			0.51

**Table 0-5 (cont'd.): Ceiling Insulation****Ceiling Insulation, Single Family, Electric SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	2.47				1.18			
2	1.30				0.62			
3	1.72				0.82			
4	0.93				0.45			
5	1.06				0.51			
6	*	4.26				1.51		
7			1.15				0.42	
8		3.89				1.38		
9		5.26				1.86		
10		6.48	1.18			2.30	0.43	
11	1.10				0.52			
12	1.66				0.79			
13	1.03	9.71			0.49	3.45		
14	*	10.40	1.13			3.69	0.41	
15		12.33	0.71			4.37	0.25	
16	1.68	*			0.80			

**Ceiling Insulation, Single Family, Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	1.44				0.84			
2	1.45				0.83			
3	1.00				0.57			
4	0.89			2.09	0.51			0.79
5	0.63			1.58	0.37			0.60
6	*			1.48				0.56
7			1.12	1.38			0.49	0.52
8				1.01				0.38
9				1.27				0.48
10			1.12	1.36			0.49	0.52
11	1.32				0.75			
12	1.07				0.61			
13	1.16			2.49	0.64			0.94
14	*		1.83	2.67			0.81	1.01
15			0.87	1.12			0.36	0.42
16	1.40			1.60	0.70			0.61

**Table 0-6: Duct Sealing****Duct Sealing & Testing, Multi-Family, Electric SH**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.00				0.00			
3	0.00				0.00			
4	0.00				0.00			
5	0.00				0.00			
6	*	0.02				0.01		
7			0.00				0.00	
8		0.08				0.03		
9		0.09				0.03		
10		0.10	0.00			0.03	0.00	
11	0.01				0.00			
12	0.02				0.01			
13	0.04	0.16			0.02	0.06		
14	*	0.12	0.01			0.04	0.00	
15		0.06	0.02			0.02	0.01	
16	0.04	*			0.02			

**Duct Sealing & Testing, Multi-Family, Gas SH**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.01				0.00			
2	0.01				0.01			
3	0.01				0.01			
4	0.01				0.01			
5	0.00			0.01	0.00			0.00
6	*			0.01				0.00
7			0.01	0.01			0.01	0.00
8				0.01				0.00
9				0.01				0.00
10			0.01	0.01			0.01	0.00
11	0.03				0.01			
12	0.04				0.02			
13	0.04			0.01	0.02			0.01
14	*		0.12	0.02			0.05	0.01
15			0.35	0.01			0.16	0.00
16	0.03			0.02	0.01			0.01

**Table 0-6 (cont'd): Duct Sealing****Duct Sealing & Testing, Mobile Home, Electric SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.00				0.00			
3	0.00				0.00			
4	0.00				0.00			
5	0.00				0.00			
6	*	0.02				0.01		
7			0.01					0.00
8		0.03				0.01		
9		0.06				0.02		
10		0.10	0.01			0.03	0.00	
11	0.01				0.00			
12	0.01				0.00			
13	0.01	0.20			0.01	0.07		
14	*	0.17	0.02			0.06	0.01	
15		0.39	0.02			0.14	0.01	
16	0.01	*			0.00			

**Duct Sealing & Testing, Mobile Home, Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.01				0.01			
2	0.01				0.01			
3	0.01				0.01			
4	0.01			0.41	0.01			0.16
5	0.01			0.30	0.00			0.11
6	*			0.29				0.11
7			0.11	0.27			0.05	0.10
8				0.22				0.08
9				0.25				0.09
10			0.08	0.28			0.04	0.10
11	0.02				0.01			
12	0.01				0.01			
13	0.02			0.41	0.01			0.16
14	*		0.09	0.68			0.04	0.26
15			0.08	0.22			0.03	0.08
16	0.01			0.38	0.01			0.14

**Table 0-6 (cont'd.): Duct Sealing****Duct Sealing & Testing, Single Family, Electric SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.07				0.04			
2	0.06				0.03			
3	0.05				0.02			
4	0.04				0.02			
5	0.05				0.02			
6	*	0.15				0.05		
7			0.04				0.01	
8		0.13				0.05		
9		0.16				0.06		
10		0.18	0.06			0.06	0.02	
11	0.05				0.03			
12	0.25				0.12			
13	0.20	0.23			0.10	0.08		
14	*	0.28	0.10			0.10	0.04	
15		0.21	0.10			0.07	0.04	
16	0.06	*			0.03			

**Duct Sealing & Testing, Single Family, Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.19				0.11			
2	0.18				0.11			
3	0.19				0.11			
4	0.20			0.41	0.12			0.16
5	0.09			0.30	0.05			0.11
6	*			0.29				0.11
7			0.10	0.27			0.05	0.10
8				0.22				0.08
9				0.25				0.09
10			0.12	0.28			0.05	0.10
11	0.19				0.11			
12	0.22				0.12			
13	0.20			0.41	0.11			0.16
14	*		0.28	0.68			0.12	0.26
15			0.16	0.22			0.06	0.08
16	0.11			0.38	0.06			0.14

**Table 0-7: Evaporative Cooler Covers****Evaporative Cooler Covers, Multi-Family, Electric SH**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.08				0.04			
2	0.06				0.03			
3	0.06				0.03			
4	0.06				0.03			
5	0.07				0.03			
6	*	0.08				0.03		
7			0.03				0.01	
8		0.08				0.03		
9		0.09				0.03		
10		0.09	0.04			0.03	0.02	
11	0.08				0.04			
12	0.04				0.02			
13	0.03	0.12			0.02	0.04		
14	*	0.15	0.07			0.06	0.03	
15		0.05	0.02			0.02	0.01	
16	0.05	*			0.02			

**Evaporative Cooler Covers, Multi-Family, Gas SH**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.12				0.07			
2	0.10				0.06			
3	0.07				0.04			
4	0.09			0.10	0.05			0.04
5	0.07			0.07	0.04			0.03
6	*			0.07				0.03
7			0.32	0.07			0.15	0.03
8				0.06				0.02
9				0.06				0.02
10			0.35	0.08			0.16	0.03
11	0.05				0.03			
12	0.06				0.04			
13	0.04			0.14	0.02			0.05
14	*		0.59	0.14			0.27	0.05
15			0.23	0.05			0.11	0.02
16	0.07			0.08	0.04			0.03

**Table 0-7 (cont'd.): Evaporative Cooler Covers****Evaporative Cooler Covers, Mobile Home, Electric SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.08				0.04			
2	0.06				0.03			
3	0.05				0.02			
4	0.04				0.02			
5	0.05				0.02			
6	*	0.12				0.05		
7			0.08				0.03	
8		0.10				0.04		
9		0.12				0.04		
10		0.13	0.10			0.05	0.04	
11	0.07				0.04			
12	0.10				0.05			
13	0.03	0.15			0.01	0.06		
14	*	0.20	0.09			0.07	0.03	
15		0.07	0.03			0.03	0.01	
16	0.06	*			0.03			

**Evaporative Cooler Covers, Mobile Home, Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.04				0.02			
2	0.07				0.04			
3	0.10				0.06			
4	0.08			0.19	0.05			0.07
5	0.07			0.13	0.04			0.05
6	*			0.06				0.02
7			1.09	0.12			0.50	0.05
8				0.08				0.03
9				0.04				0.02
10			0.68	0.05			0.31	0.02
11	0.05				0.03			
12	0.05				0.03			
13	0.03			0.09	0.02			0.03
14	*		0.73	0.09			0.34	0.03
15			0.47	0.40			0.22	0.16
16	0.06			0.13	0.04			0.05

**Table 0-7 (cont'd.): Evaporative Cooler Covers****Evaporative Cooler Covers, Single Family, Electric SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.12				0.06			
2	0.09				0.04			
3	0.07				0.03			
4	0.06				0.03			
5	0.07				0.04			
6	*	0.12				0.04		
7			0.04				0.02	
8		0.10				0.04		
9		0.12				0.04		
10		0.13	0.05			0.05	0.02	
11	0.04				0.02			
12	0.10				0.05			
13	0.04	0.15			0.02	0.05		
14	*	0.19	0.09			0.07	0.03	
15		0.07	0.03			0.03	0.01	
16	0.03	*			0.02			

**Evaporative Cooler Covers, Single Family, Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.28				0.17			
2	0.08				0.05			
3	0.17				0.10			
4	0.32			0.14	0.19			0.05
5	0.22			0.10	0.13			0.04
6	*			0.10				0.04
7			0.47	0.09			0.22	0.03
8				0.05				0.02
9				0.08				0.03
10			0.58	0.10			0.27	0.04
11	0.16				0.09			
12	0.22				0.13			
13	0.08			0.27	0.05			0.11
14	*		1.46	0.31			0.67	0.12
15			0.47	0.05			0.22	0.02
16	0.10			0.09	0.06			0.03

**Table 0-8: Evaporative Cooler Maintenance**

**Evaporative Cooler Maintenance, Multi-Family**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.04				0.02			
3	0.01				0.01			
4	0.03				0.02			
5	0.00				0.00			
6	0.02				0.01			
7			0.07				0.03	
8								
9		0.19				0.13		
10		0.25	0.16			0.18	0.07	
11	0.12				0.08			
12	0.10				0.06			
13	0.19	0.32			0.11	0.22		
14	0.13	0.34	0.22		0.08	0.24	0.10	
15		0.72	0.66			0.51	0.30	
16	0.11	0.26			0.06	0.18		

**Evaporative Cooler Maintenance, Mobile Home**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.05				0.03			
3	0.01				0.01			
4	0.02				0.01			
5	0.00				0.00			
6	0.02				0.01			
7			0.06				0.03	
8								
9		0.19				0.13		
10		0.24	0.18			0.16	0.08	
11	0.15				0.09			
12	0.13				0.08			
13	0.23	0.56			0.14	0.39		
14	0.20	0.33	0.33		0.12	0.23	0.15	
15		0.72	0.78			0.50	0.35	
16	0.12	0.29			0.07	0.20		

**Evaporative Cooler Maintenance, Single Family**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.05				0.03			
3	0.01				0.01			
4	0.02				0.01			
5	0.00				0.00			
6	0.02				0.01			
7			0.06				0.03	
8								
9		0.20				0.14		
10		0.25	0.17			0.18	0.08	
11	0.15				0.09			
12	0.13				0.08			
13	0.23	0.32			0.14	0.22		
14	0.20	0.33	0.31		0.12	0.23	0.14	
15		0.72	0.75			0.50	0.34	
16	0.12	0.00			0.07	0.00		

**Table 0-9: Evaporative Coolers**

**Evaporative Coolers, Multi-Family**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.03				0.02			
3	0.03				0.02			
4	0.05				0.03			
5	0.00				0.00			
6	*							
7			0.11					0.05
8								
9		0.10					0.07	
10		0.13	0.27				0.09	0.12
11	0.21				0.12			
12	0.18				0.11			
13	0.30	0.17			0.17	0.11		
14	*	0.21	0.39			0.14	0.17	
15		0.38	1.15			0.26	0.50	
16	0.19	*			0.11			

**Evaporative Coolers, Mobile Home**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.13				0.07			
3	0.08				0.05			
4	0.30				0.18			
5	0.02				0.01			
6	*							
7			0.10				0.04	
8								
9		0.11					0.07	
10		0.43	0.30				0.29	0.13
11	0.71				0.41			
12	0.65				0.38			
13	0.98	0.57			0.58	0.38		
14	*	0.59	0.54			0.39	0.24	
15		1.30	1.29			0.87	0.56	
16	0.70	*			0.41			

**Evaporative Coolers, Single Family**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.16				0.09			
3	0.17				0.10			
4	0.38				0.22			
5	0.02				0.01			
6	*							
7			0.22				0.10	
8								
9		0.34					0.23	
10		0.45	0.53				0.30	0.23
11	0.67				0.39			
12	0.65				0.38			
13	1.00	0.57			0.59	0.38		
14	*	0.58	0.54			0.39	0.24	
15		1.29	1.29			0.87	0.56	
16		*						

**Table 0-10: Furnace Filters with Other Measures**

**Furnace Filters if installed with furnace repair or replacement or if not requiring licensed HVAC contractor, Multi-Family, Electric SH**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.78				0.40			
2	0.57				0.29			
3	0.68				0.35			
4	0.98				0.50			
5	1.13				0.58			
6	*	0.87				0.60		
7			0.76					0.25
8		0.83				0.57		
9		0.94				0.65		
10		0.98	1.00			0.68	0.32	
11	0.73				0.38			
12	0.58				0.30			
13	0.60	1.23			0.31	0.85		
14	*	1.65	1.68			1.14	0.54	
15		0.58	0.59			0.40	0.19	
16	0.41	*			0.21			

**Furnace Filters if installed with furnace repair or replacement or if not requiring licensed HVAC contractor, Multi-Family, Gas SH**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.29				0.19			
2	0.34				0.22			
3	0.48				0.31			
4	0.58			0.25	0.37			0.10
5	0.48			0.19	0.31			0.08
6	*			0.19				0.08
7			0.61	0.17			0.25	0.07
8				0.14				0.06
9				0.15				0.06
10			0.68	0.19			0.28	0.08
11	0.42				0.27			
12	0.41				0.26			
13	0.41			0.24	0.26			0.10
14	*		1.15	0.33			0.47	0.13
15			0.47	0.13			0.19	0.05
16	0.41			0.36	0.26			0.15

**Table 0-10 (cont'd.): Furnace Filters with Other Measures**

**Furnace Filters if installed with furnace repair or replacement or if not requiring licensed HVAC contractor, Mobile Home, Elec SH**

Climate	Modified Participant Test				Utility Test			
	Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E
1	0.78				0.40			
2	0.58				0.30			
3	0.42				0.22			
4	0.41				0.21			
5	0.47				0.24			
6	*	0.97				0.67		
7			0.75				0.24	
8		0.82				0.56		
9		0.94				0.65		
10		1.03	1.06			0.71	0.34	
11	0.67				0.35			
12	0.63				0.33			
13	0.28	1.18			0.15	0.81		
14	*	1.55	1.58			1.07	0.51	
15		0.59	0.60			0.41	0.19	
16	0.79	*			0.41			

**Furnace Filters if installed with furnace repair or replacement or if not requiring licensed HVAC contractor, Mobile Home, Gas SH**

Climate	Modified Participant Test				Utility Test			
	Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E
1	0.20				0.13			
2	0.60				0.38			
3	0.43				0.27			
4	0.55			0.32	0.35			0.13
5	0.56			0.24	0.36			0.10
6	*			0.23				0.09
7			0.76	0.21		0.31	0.09	
8				0.17				0.07
9				0.19				0.08
10			0.76	0.21		0.31	0.09	
11	0.42				0.27			
12	0.48				0.31			
13	0.74			0.32	0.47			0.13
14	*		1.86	0.53		0.76	0.22	
15			0.60	0.17		0.25	0.07	
16	0.42			0.29	0.27			0.12

**Table 0-10 (cont'd.): Furnace Filters with Other Measures**

**Furnace Filters if installed with furnace repair or replacement or if not requiring licensed HVAC contractor, Single Family, Elec SH**

Climate	Modified Participant Test				Utility Test				
	Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.82					0.42			
2	0.88					0.45			
3	1.54					0.79			
4	1.43					0.74			
5	1.67					0.86			
6	*	1.45					1.00		
7			1.13					0.36	
8		1.22					0.84		
9		1.40					0.97		
10		1.55	1.58				1.07	0.51	
11	0.85					0.44			
12	0.91					0.47			
13	0.78	1.76				0.40	1.21		
14	*	2.32	2.36				1.60	0.76	
15		0.88	0.90				0.61	0.29	
16	0.77	*				0.39			

**Furnace Filters if installed with furnace repair or replacement or if not requiring licensed HVAC contractor, Single Family, Gas SH**

Climate	Modified Participant Test				Utility Test				
	Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.50					0.32			
2	0.68					0.44			
3	1.28					0.82			
4	1.30			0.60	0.83				0.25
5	1.19			0.44	0.76				0.18
6	*			0.43					0.17
7			1.42	0.40			0.58		0.16
8				0.32					0.13
9				0.36					0.15
10			1.42	0.40			0.58		0.16
11	1.02				0.65				
12	1.04				0.66				
13	1.14			0.60	0.73				0.25
14	*		3.49	0.99			1.42		0.40
15			1.13	0.32			0.46		0.13
16	0.77			0.55	0.49				0.22

**Table 0-11: Furnace Filters with Licensed Contractor**

**Furnace Filters if installed alone and requiring licensed HVAC contractor, Multi-Family, Electric SH**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.15				0.08			
2	0.11				0.06			
3	0.10				0.05			
4	0.09				0.05			
5	0.11				0.06			
6	*	0.06				0.04		
7			0.07				0.02	
8		0.06				0.04		
9		0.07				0.05		
10		0.07	0.09			0.05	0.03	
11	0.11				0.05			
12	0.09				0.05			
13	0.09	0.09			0.04	0.06		
14	*	0.12	0.16			0.08	0.05	
15		0.04	0.06			0.03	0.02	
16	0.08	*			0.04			

**Furnace Filters if installed alone and requiring licensed HVAC contractor, Multi-Family, Gas SH**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.09				0.06			
2	0.07				0.04			
3	0.07				0.04			
4	0.06			0.13	0.04			0.05
5	0.05			0.10	0.03			0.04
6	*		0.10					0.04
7			0.06	0.09			0.02	0.04
8				0.07				0.03
9				0.08				0.03
10			0.06	0.10			0.03	0.04
11	0.07				0.04			
12	0.07				0.05			
13	0.06			0.13	0.04			0.05
14	*		0.11	0.17			0.04	0.07
15			0.04	0.07			0.02	0.03
16	0.08			0.18	0.05			0.07

**Table 0-11 (cont'd.): Furnace Filters with Licensed Contractor**

**Furnace Filters if installed alone and requiring licensed HVAC contractor, Mobile Home,  
Elec SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.15				0.08			
2	0.12				0.06			
3	0.09				0.04			
4	0.08				0.04			
5	0.10				0.05			
6	*	0.07				0.05		
7			0.07				0.02	
8		0.06				0.04		
9		0.07				0.05		
10		0.07	0.10			0.05	0.03	
11	0.10				0.05			
12	0.10				0.05			
13	0.07	0.08			0.04	0.06		
14	*	0.11	0.15			0.08	0.05	
15		0.04	0.06			0.03	0.02	
16	0.12	*			0.06			

**Furnace Filters if installed alone and requiring licensed HVAC contractor, Mobile Home,  
Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.08				0.05			
2	0.13				0.08			
3	0.06				0.04			
4	0.06			0.17	0.04			0.07
5	0.06			0.12	0.04			0.05
6	*			0.12				0.05
7			0.07	0.11			0.03	0.04
8				0.09				0.04
9				0.10				0.04
10			0.07	0.11			0.03	0.04
11	0.07				0.04			
12	0.10				0.06			
13	0.10			0.17	0.07			0.07
14	*		0.17	0.27			0.07	0.11
15			0.06	0.09			0.02	0.04
16	0.07			0.15	0.04			0.06

**Table 0-11 (cont'd.): Furnace Filters with Licensed Contractor****Furnace Filters if installed alone and requiring licensed HVAC contractor, Single Family,****Elec SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.21				0.11			
2	0.17				0.09			
3	0.15				0.08			
4	0.14				0.07			
5	0.16				0.08			
6	*	0.10				0.07		
7			0.11				0.03	
8		0.09				0.06		
9		0.10				0.07		
10		0.11	0.15			0.08	0.05	
11	0.15				0.08			
12	0.16				0.08			
13	0.12	0.13			0.06	0.09		
14	*	0.17	0.22			0.11	0.07	
15		0.06	0.08			0.04	0.03	
16	0.15	*			0.08			

**Furnace Filters if installed alone and requiring licensed HVAC contractor, Single Family,****Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.17				0.11			
2	0.14				0.09			
3	0.17				0.11			
4	0.13			0.31	0.09			0.13
5	0.12			0.23	0.08			0.09
6	*			0.22				0.09
7			0.13	0.21			0.05	0.08
8				0.17				0.07
9				0.19				0.08
10			0.13	0.21			0.05	0.08
11	0.16				0.10			
12	0.20				0.13			
13	0.17			0.31	0.11			0.13
14	*		0.32	0.51			0.13	0.21
15			0.11	0.17			0.04	0.07
16	0.13			0.28	0.09			0.12

**Table 0-12: Furnace Repair**

**Gas Furnace Repair, Multi-Family**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.57				0.63			
2	0.42				0.46			
3	0.37				0.41			
4	0.34				0.38			
5	0.26				0.29			
6	*							
7			0.97				0.63	
8								
9								
10			1.19				0.77	
11	0.40				0.44			
12	0.36				0.40			
13	0.33				0.36			
14	*		1.19				0.77	
15			0.42				0.27	
16	0.48				0.53			

**Gas Furnace Repair, Mobile Home**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.58				0.64			
2	0.46				0.51			
3	0.37				0.41			
4	0.35			0.00	0.39			0.00
5	0.26			0.36	0.28			0.24
6	*			0.32				0.21
7			0.98	0.31			0.63	0.21
8				0.22				0.15
9				0.27				0.18
10			1.15	0.31			0.74	0.21
11	0.40				0.44			
12	0.36				0.40			
13	0.33			0.57	0.36			0.38
14	*		1.15	0.57			0.74	0.38
15			0.40	0.20			0.26	0.14
16	0.32			0.27	0.35			0.18

**Gas Furnace Repair, Single Family**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.58				0.64			
2	0.46				0.51			
3	0.37				0.41			
4	0.35			0.48	0.39			0.24
5	0.26			0.36	0.28			0.21
6	*			0.32				0.21
7			0.97	0.32			0.63	0.21
8				0.22				0.15
9				0.27				0.18
10			1.09	0.31			0.71	0.21
11	0.40				0.44			
12	0.36				0.40			
13	0.33			0.57	0.36			0.38
14	*		1.37	0.57			0.89	0.38
15			0.32	0.20			0.21	0.14
16	0.32			0.31	0.35			0.21

**Table 0-13: Furnace Replacement**

**Gas Furnace Replacement, Multi-Family**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.74				0.80			
2	0.56				0.61			
3	0.47				0.51			
4	0.45				0.48			
5	0.34				0.37			
6	*							
7			0.05				0.03	
8								
9								
10			0.06				0.04	
11	0.52				0.57			
12	0.47				0.51			
13	0.42				0.45			
14	*		0.09				0.06	
15			0.04				0.02	
16	0.62				0.68			

**Gas Furnace Replacement, Mobile Home**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	1.53				1.66			
2	0.56				0.61			
3	0.53				0.58			
4	0.44				0.49	0.48		0.32
5	0.68				0.18	0.74		0.12
6	*				0.17			0.11
7			0.15	0.46			0.10	0.30
8				0.13				0.09
9				0.13				0.09
10			0.18	0.20			0.12	0.13
11	0.51				0.55			
12	0.47				0.51			
13	0.42				1.27	0.45		0.84
14	*		0.18	0.29			0.12	0.19
15			0.07	0.13			0.05	0.09
16	0.85				0.33	0.92		0.22

**Gas Furnace Replacement, Single Family**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	1.26				1.37			
2	0.56				0.61			
3	0.53				0.58			
4	0.44				0.29	0.48		0.20
5	0.56				0.23	0.81		0.15
6	*				0.21			0.14
7			0.15	0.38			0.10	0.25
8				0.15				0.10
9				0.17				0.12
10			0.18	0.19			0.12	0.13
11	0.51				0.55			
12	0.47				0.51			
13	0.42				0.36	0.45		0.24
14	*		0.20	0.36			0.13	0.24
15			0.06	0.14			0.04	0.09
16	0.34				0.34	0.70		0.22

**Table 0-14: Minor Repairs****Minor Home Repairs, Multi-Family, Electric SH**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	10.37				1.72			
2	10.20				1.69			
3	4.12				0.68			
4	1.80				0.30			
5	2.70				0.45			
6	*	0.71				0.06		
7			1.09				0.16	
8		0.78				0.07		
9		1.24				0.10		
10		1.78	1.33			0.15	0.19	
11	3.89				0.64			
12	5.43				0.90			
13	1.52	2.10			0.25	0.18		
14	*	2.74	1.34			0.23	0.19	
15		4.74	1.28			0.40	0.18	
16	27.38	*			4.54			

**Minor Home Repairs, Multi-Family, Gas SH**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	2.55				0.53			
2	2.38				0.49			
3	2.03				0.42			
4	1.56			1.51	0.32			0.12
5	2.50			0.97	0.52			0.08
6	*			0.97				0.08
7			1.12	0.88			0.20	0.07
8				0.67				0.05
9				0.71				0.06
10			1.63	0.84			0.29	0.07
11	1.60				0.32			
12	2.41				0.49			
13	1.56			1.56	0.31			0.13
14	*		1.35	1.56			0.24	0.13
15			1.35	0.63			0.22	0.05
16	0.99			0.92	0.45			0.07

**Table 0-14 (cont'd.): Minor Repair****Minor Home Repairs, Mobile Home, Electric SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	2.66				0.44			
2	3.16				0.52			
3	2.35				0.39			
4	2.24				0.37			
5	2.43				0.40			
6	*	3.79				0.32		
7			1.07				0.15	
8		3.34				0.28		
9		4.36				0.37		
10		4.96	1.34			0.42	0.19	
11	0.95				0.16			
12	2.36				0.39			
13	0.99	6.72			0.16	0.56		
14	*	7.75	1.12			0.65	0.16	
15		6.79	1.10			0.57	0.16	
16	0.67	*			0.11			

**Minor Home Repairs, Mobile Home, Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.93				0.19			
2	3.16				0.65			
3	1.41				0.29			
4	2.25				1.23	0.46		0.10
5	2.44				0.79	0.51		0.06
6	*				0.55			0.04
7			1.31	0.99			0.24	0.08
8				0.51				0.04
9				0.65				0.05
10			2.06	0.68			0.37	0.05
11	1.00				0.20			
12	2.14				0.44			
13	2.19				1.26	0.44		0.10
14	*		1.64	1.26			0.30	0.10
15			1.52	0.72			0.25	0.06
16	0.45				3.28	0.09		0.26

**Table 0-14 (cont'd.): Minor Repairs****Minor Home Repairs, Single Family, Electric SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	3.32				0.55			
2	4.11				0.68			
3	8.78				1.45			
4	1.30				0.22			
5	1.14				0.19			
6	*	3.68				0.31		
7			1.56				0.22	
8		3.63				0.30		
9		3.61				0.30		
10		4.11	1.89			0.34	0.27	
11	1.31				0.22			
12	1.98				0.33			
13	0.98	5.20			0.16	0.44		
14	*	6.28	1.88			0.53	0.27	
15		3.74	1.74			0.31	0.25	
16	0.70	*			0.12			

**Minor Home Repairs, Single Family, Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	1.87				0.39			
2	2.06				0.43			
3	1.82				0.38			
4	1.86			2.46	0.39			0.20
5	1.97			1.61	0.41			0.13
6	*			2.29				0.18
7			2.28	1.65		0.41		0.13
8				1.47				0.12
9				1.54				0.12
10			2.68	1.57		0.48		0.13
11	2.06				0.42			
12	2.45				0.50			
13	1.06			2.80	0.22			0.23
14	*		3.30	3.24		0.60		0.26
15			2.03	1.06		0.33		0.09
16	0.70			2.46	0.67			0.20

**Table 0-15: Setback Thermostats with Other Measures**

**Setback Thermostats if installed with furnace repair or replacement or if not requiring licensed HVAC contractor, Multi-Family, Electric SH**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.02				0.01			
2	0.02				0.01			
3	0.01				0.01			
4	0.02				0.01			
5	0.01				0.01			
6	0.01	0.13			0.01	0.09		
7			0.03				0.02	
8		0.14				0.09		
9		0.18				0.12		
10		0.22	0.07			0.14	0.03	
11	0.04				0.03			
12	0.04				0.02			
13	0.06	0.33			0.03	0.22		
14	0.05	0.34	0.10		0.03	0.23	0.04	
15		0.43	0.23			0.28	0.10	
16	0.04	0.26			0.02	0.18		

**Setback Thermostats if installed with furnace repair or replacement or if not requiring licensed HVAC contractor, Multi-Family, Gas SH**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.19				0.13			
2	0.14				0.10			
3	0.11				0.08			
4	0.11			0.25	0.08			0.12
5	0.08			0.19	0.06			0.09
6	0.08			0.19	0.06			0.09
7			0.16	0.19			0.08	0.09
8				0.16				0.07
9				0.16				0.07
10			0.20	0.19			0.11	0.09
11	0.15				0.11			
12	0.12				0.09			
13	0.15			0.25	0.10			0.12
14	0.17		0.33	0.34	0.12		0.17	0.16
15			0.32	0.12			0.15	0.06
16	0.17			0.34	0.12			0.16

**Table 0-15 (cont'd.): Setback Thermostats with Other Measures****Setback Thermostats if installed with furnace repair or replacement or if not requiring****licensed HVAC contractor, Mobile Home, Elec SH**

Climate	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.38				0.22			
2	0.28				0.16			
3	0.23				0.13			
4	0.20				0.12			
5	0.23				0.13			
6	0.16	0.20			0.09	0.13		
7			0.25					0.11
8		0.18				0.12		
9		0.24				0.16		
10		0.29	0.37			0.19	0.16	
11	0.27				0.15			
12	0.00				0.00			
13	0.24	0.43			0.14	0.29		
14	0.00	0.47	0.57		0.00	0.31	0.25	
15		0.52	0.40			0.35	0.17	
16	0.31				0.18			

**Setback Thermostats if installed with furnace repair or replacement or if not requiring****licensed HVAC contractor, Mobile Home, Gas SH**

Climate	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.30				0.21			
2	0.13				0.09			
3	0.10				0.07			
4	0.13			0.29	0.09			0.14
5	0.09			0.23	0.07			0.11
6	0.09			0.21	0.06			0.10
7			0.16	0.19			0.09	0.09
8				0.16				0.07
9				0.17				0.08
10			0.18	0.21			0.09	0.10
11	0.13				0.09			
12	0.15				0.10			
13	0.15			0.29	0.10			0.14
14	0.24		0.26	0.49	0.17		0.13	0.23
15			0.27	0.16			0.12	0.07
16	0.19			0.28	0.14			0.13

**Table 0-15 (cont'd.): Setback Thermostats with Other Measures**

**Setback Thermostats if installed with furnace repair or replacement or if not requiring licensed HVAC contractor, Single Family, Elec SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.37				0.21			
2	0.28				0.17			
3	0.23				0.13			
4	0.20				0.12			
5	0.22				0.12			
6	0.16	0.20			0.09	0.13		
7			0.26					0.11
8		0.18				0.12		
9		0.24				0.16		
10		0.29	0.43			0.19	0.19	
11	0.30				0.17			
12	0.18				0.10			
13	0.25	0.43			0.15	0.29		
14	0.34	0.47	0.68		0.20	0.31	0.30	
15		0.52	0.72			0.35	0.31	
16	0.33	0.43			0.19	0.29		

**Setback Thermostats if installed with furnace repair or replacement or if not requiring licensed HVAC contractor, Single Family, Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.23				0.17			
2	0.24				0.17			
3	0.21				0.15			
4	0.19			0.42	0.14			0.20
5	0.13			0.32	0.09			0.15
6	0.13			0.30	0.09			0.14
7			0.26	0.27			0.14	0.13
8				0.22				0.11
9				0.25				0.12
10			0.34	0.30			0.17	0.14
11	0.24				0.17			
12	0.23				0.16			
13	0.23			0.42	0.16			0.20
14	0.38		0.75	0.69	0.26		0.39	0.33
15			0.71	0.22			0.33	0.11
16	0.22			0.40	0.15			0.19

**Table 0-16: Setback Thermostats with Licensed Contractor**

**Setback Thermostats if installed alone and requiring licensed HVAC contractor, Multi-**

**Family, Electric SH**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.01				0.01			
2	0.02				0.01			
3	0.01				0.01			
4	0.01				0.01			
5	0.01				0.01			
6	0.01	0.04			0.00	0.03		
7			0.01				0.01	
8		0.04				0.03		
9		0.05				0.04		
10		0.06	0.03			0.04	0.01	
11								
12								
13		0.10				0.07		
14		0.10	0.04			0.07	0.02	
15		0.13	0.09			0.09	0.04	
16	0.03	0.08			0.01	0.05		

**Setback Thermostats if installed alone and requiring licensed HVAC contractor, Multi-**

**Family, Gas SH**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.13				0.09			
2	0.09				0.07			
3	0.08				0.06			
4	0.08			0.11	0.06			0.05
5	0.06			0.08	0.04			0.04
6	0.06			0.08	0.04			0.04
7			0.06	0.08			0.03	0.04
8				0.07				0.03
9				0.07				0.03
10			0.08	0.08			0.04	0.04
11								
12								
13				0.11				0.05
14			0.13	0.15			0.07	0.07
15			0.13	0.05			0.06	0.03
16	0.12			0.15	0.08			0.07

**Table 0-16 (cont'd.): Setback Thermostats with Licensed Contractor**

**Setback Thermostats if installed alone and requiring licensed HVAC contractor, Mobile Home, Elec SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.27				0.15			
2	0.20				0.11			
3	0.16				0.09			
4	0.14				0.08			
5	0.16				0.09			
6	0.11	0.06			0.06	0.04		
7			0.10				0.04	
8		0.05				0.04		
9		0.07				0.05		
10		0.09	0.15			0.06	0.07	
11								
12								
13		0.13				0.09		
14		0.14	0.23			0.09	0.10	
15		0.16	0.16			0.11	0.07	
16	0.21				0.12			

**Setback Thermostats if installed alone and requiring licensed HVAC contractor, Mobile Home, Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.21				0.15			
2	0.09				0.06			
3	0.07				0.05			
4	0.09			0.13	0.06			0.06
5	0.06			0.10	0.05			0.05
6	0.06			0.09	0.04			0.04
7			0.07	0.08			0.04	0.04
8				0.07				0.03
9				0.07				0.04
10			0.07	0.09			0.04	0.04
11								
12								
13				0.13				0.06
14			0.10	0.21			0.05	0.10
15			0.11	0.07			0.05	0.03
16	0.13			0.12	0.10			0.06

**Table 0-16 (cont'd.): Setback Thermostats with Licensed Contractor****Setback Thermostats if installed alone and requiring licensed HVAC contractor, Single Family, Elec SH**

Climate	Modified Participant Test				Utility Test			
	Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E
1	0.26				0.15			
2	0.20				0.11			
3	0.16				0.11			
4	0.14				0.09			
5	0.15				0.08			
6	0.11				0.09			
7		0.06			0.06	0.04		
8			0.11				0.05	
9		0.05				0.04		
10		0.07				0.05		
11		0.09	0.17			0.06	0.08	
12								
13								
14		0.13				0.09		
15		0.14	0.28			0.09	0.12	
16	0.23	0.16	0.29			0.11	0.13	

**Setback Thermostats if installed alone and requiring licensed HVAC contractor, Single Family, Gas SH**

Climate	Modified Participant Test				Utility Test			
	Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E
1	0.23	0.13			0.13	0.09		
2	0.16				0.11			
3	0.16				0.12			
4	0.15				0.11			
5	0.13			0.18	0.09			0.09
6	0.09			0.14	0.06			0.07
7	0.09			0.13	0.06			0.06
8			0.10	0.12			0.06	0.06
9				0.10				0.05
10				0.11				0.05
11			0.14	0.13			0.07	0.06
12								
13								
14				0.18				0.09
15			0.31	0.30			0.16	0.14
16			0.29	0.10			0.13	0.05

**Table 0-17: Weatherstripping, Attic****Weatherstripping Attic, Multi-Family, Electric SH**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.22				0.11			
2	0.14				0.07			
3	0.13				0.06			
4	0.12				0.06			
5	0.15				0.07			
6	*	0.06				0.02		
7								
8		0.06				0.02		
9		0.07				0.03		
10		0.08				0.03		
11	0.16				0.08			
12	0.16				0.08			
13	0.12	0.08			0.06	0.03		
14	*	0.12				0.04		
15		0.05				0.02		
16	0.13	*			0.06			

**Weatherstripping Attic, Multi-Family, Gas SH**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.25				0.15			
2	0.22				0.13			
3	0.23				0.14			
4	0.23				0.14			
5	0.17				0.10			
6	*							
7								
8								
9								
10								
11	0.20				0.12			
12	0.22				0.13			
13	0.23				0.13			
14	*							
15								
16	0.20				0.12			

**Table 0-17 (cont'd.): Weatherstripping, Attic****Weatherstripping Attic, Single Family, Electric SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.37				0.18			
2	0.32				0.15			
3	0.31				0.15			
4	0.28				0.14			
5	0.27				0.13			
6	*	0.24				0.08		
7								
8		0.22				0.08		
9		0.25				0.09		
10		0.27				0.10		
11	0.25				0.12			
12	0.28				0.13			
13	0.24	0.34			0.11	0.12		
14	*	0.42				0.15		
15		0.26				0.09		
16	0.20	*			0.10			

**Weatherstripping Attic, Single Family, Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.28				0.17			
2	0.26				0.16			
3	0.32				0.19			
4	0.31				0.18			
5	0.35				0.21			
6	*							
7								
8								
9								
10								
11	0.33				0.20			
12	0.39				0.23			
13	0.35				0.20			
14	*							
15								
16	0.23				0.13			

**Table 0-18: Weatherstripping, Door****Weatherstripping Door, Multi-Family, Electric SH**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.35				0.17			
2	0.32				0.15			
3	0.22				0.10			
4	0.29				0.14			
5	0.30				0.14			
6	*	0.10				0.03		
7			0.35				0.13	
8		0.09				0.03		
9		0.11				0.04		
10		0.11	0.42			0.04	0.15	
11	0.29				0.14			
12	0.24				0.11			
13	0.17	0.13			0.08	0.04		
14	*	0.19	0.42			0.07	0.15	
15		0.08	0.27			0.03	0.10	
16	0.35	*			0.17			

**Weatherstripping Door, Multi-Family, Gas SH**

Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.15				0.09			
2	0.15				0.09			
3	0.12				0.07			
4	0.12			0.23	0.07			0.09
5	0.13			0.16	0.08			0.06
6	*			0.15				0.06
7			0.52	0.13			0.23	0.05
8				0.11				0.04
9				0.11				0.04
10			0.47	0.13			0.21	0.05
11	0.12				0.07			
12	0.12				0.07			
13	0.14			0.24	0.08			0.09
14	*		0.43	0.24			0.19	0.09
15			0.32	0.10			0.14	0.04
16	0.14			0.15	0.08			0.06

**Table 0-18 (cont'd.): Weatherstripping, Door****Weatherstripping Door, Mobile Home, Electric SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.39				0.19			
2	0.20				0.09			
3	0.15				0.07			
4	0.10				0.05			
5	0.11				0.05			
6	*	0.12				0.04		
7			0.20				0.07	
8		0.10				0.04		
9		0.13				0.05		
10		0.13	0.24			0.05	0.09	
11	0.18				0.09			
12	0.13				0.06			
13	0.14	0.16			0.07	0.06		
14	*	0.20	0.20			0.07	0.07	
15		0.11	0.11			0.04	0.04	
16	0.21	*			0.10			

**Weatherstripping Door, Mobile Home, Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.12				0.07			
2	0.13				0.08			
3	0.10				0.06			
4	0.10			0.15	0.06			0.06
5	0.11			0.10	0.06			0.04
6	*			0.07				0.03
7			0.55	0.08			0.25	0.03
8				0.06				0.02
9				0.08				0.03
10			0.50	0.09			0.23	0.03
11	0.12				0.07			
12	0.13				0.07			
13	0.14			0.15	0.08			0.06
14	*		0.46	0.15			0.21	0.06
15			0.31	0.08			0.14	0.03
16	0.15			0.09	0.09			0.03

**Table 0-18 (cont'd.): Weatherstripping, Door****Weatherstripping Door, Single Family, Electric SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.16				0.08			
2	0.16				0.08			
3	0.14				0.07			
4	0.11				0.05			
5	0.18				0.09			
6	*	0.13				0.05		
7			0.20				0.07	
8		0.12				0.04		
9		0.14				0.05		
10		0.15	0.24			0.05	0.09	
11	0.14				0.06			
12	0.12				0.06			
13	0.10	0.19			0.05	0.07		
14	*	0.23	0.24			0.08	0.09	
15		0.14	0.19			0.05	0.07	
16	0.23	*			0.11			

**Weatherstripping Door, Single Family, Gas SH**

Climate Zone	Modified Participant Test				Utility Test			
	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.10				0.06			
2	0.12				0.07			
3	0.12				0.07			
4	0.12			0.17	0.07			0.07
5	0.10			0.14	0.06			0.05
6	*			0.28				0.11
7			0.48	0.16			0.22	0.06
8				0.17				0.07
9				0.16				0.06
10			0.56	0.14			0.25	0.05
11	0.14				0.08			
12	0.13				0.08			
13	0.14			0.24	0.08			0.09
14	*		0.77	0.31			0.35	0.12
15			0.33	0.09			0.14	0.03
16	0.12			0.24	0.07			0.09

**Table 0-19: Whole House Fans****Whole House Fans, Single Family**

Program B/C	0.56	1.17	0.71	0.61	0.32	0.78	0.35	0.18
Climate	Modified Participant Test				Utility Test			
Zone	PG&E	SCE	SDG&E	SoCal	PG&E	SCE	SDG&E	SoCal
1	0.00				0.00			
2	0.06				0.04			
3	0.01				0.01			
4	0.03				0.02			
5	0.00				0.00			
6	0.02	0.04			0.01	0.03		
7			0.12				0.05	
8		0.16				0.11		
9		0.08				0.05		
10		0.52	0.95			0.35	0.42	
11	0.07				0.04			
12	0.11				0.06			
13	0.17	0.24			0.10	0.17		
14	0.40	0.72	0.33		0.24	0.49	0.15	
15		0.38	0.18			0.26	0.08	
16	0.18	0.32			0.11	0.22		

## ATTACHMENT 3

### Current Minimum Standard for Gas Appliance Testing

Olfactory Test	Smell for natural gas leaks.
Visual Examinations	<p>Flue and Vent System—Check for:</p> <ul style="list-style-type: none"> <li>▪ Draft hood defects: Multiple, missing or improperly installed</li> <li>▪ Holes in pipe or other hazardous conditions.</li> <li>▪ Connection with a solid fuel appliance chimney.</li> <li>▪ Flue/vent cap missing or damaged.</li> <li>▪ Inadequate distance from an evaporative cooler inlet.</li> </ul> <p>Appliance Components—Check for:</p> <ul style="list-style-type: none"> <li>▪ Furnace combustion chamber door(s) <u>not</u> present.</li> <li>▪ Water Heater combustion chamber cover (rollout shield <u>or</u> access door) <u>not</u> present.</li> <li>▪ Excessive amounts of carbon or rust in/around heat exchanger, draft hood or flue/vent pipe.</li> </ul>
Combustion Air Evaluation	Combustion Air Vents—Check for: <ul style="list-style-type: none"> <li>▪ Vents are absent or inadequate (size and location)</li> <li>▪ Source of combustion air is inadequate and/or obstructed.</li> </ul>
Indoor Ambient CO Tests	<ul style="list-style-type: none"> <li>▪ CO tester zeroed outdoors.</li> <li>▪ [A] Equipment-<i>Off</i> Indoor Ambient CO sample: Taken in an open location away from duct registers and appliances. All combustion appliances are turned off.</li> <li>▪ [B] Equipment-<i>On</i> Indoor Ambient CO sample: Taken after all space-heating systems have <u>been</u> operating at least five minutes. Measured in the same location as [A].</li> <li>▪ [C] Equipment-<i>On</i> Appliance Ambient CO sample: <i>Forced-air units</i>: inside the register nearest the supply plenum. <i>Non-ducted units</i>: in the atmosphere just above the heat exchanger. Investigative action, and correction if needed, is required when: <ul style="list-style-type: none"> <li>[A] or [B] CO level exceeds 10 ppm.</li> <li>[C] CO level exceeds [B] CO level.</li> </ul> </li> <li>▪ Gas heating system(s) shall be repaired/replaced when required.</li> </ul>
Draft Tests	<ul style="list-style-type: none"> <li>▪ Visual (non-instrument) test (smoke test)</li> <li>▪ Tactile test</li> </ul>

## ATTACHMENT 4

### SYNOPSIS OF NGAT MINIMUM STANDARD AND TEAM RECOMMENDATIONS

#### Minimum Standard for Gas Appliance Testing [Post-Weatherization Testing Required; Pre-Weatherization Testing Optional]

Appliance	Olfactory Check for Gas Odor	Visual Check of Appliance and Flue/Vent	Combustion Air Evaluation (Equipment Off)	Indoor Ambient CO Tests			Smoke or Tactile Draft Checks
				Indoor Ambient CO (Equipment Off)	Indoor Ambient CO (Equipment On)	Ambient CO	
Furnace/Space Heater (ND)	X	X	X	X	X	X	X
Furnace/Space Heater (ID)	X	X	X	X	X	X	X
Furnace/Space Heater (CC)	X	X	n/a	X	X	X	n/a
Water Heater (ND)	X	X	X	—	—	—	X
Water Heater (CC)	X	X	n/a	—	—	—	n/a
Cook Top	X	—	n/a	—	—	n/a	n/a
Oven/Broiler	X	—	n/a	—	—	n/a	n/a
Gas Log	X	—	n/a	—	—	—	—
Clothes Dryer	X	X	n/a	n/a	n/a	—	n/a

#### Recommended NGAT Tests and Options [Post-Weatherization Testing, Only]

Appliance	Olfactory Check for Gas Odor	Visual Check of Appliance and Flue/Vent	Combustion Air Evaluation (Equipment Off)	Indoor Ambient CO Tests			Smoke or Tactile Draft Checks
				Indoor Ambient CO (Equipment Off)	[A] Indoor Ambient CO (Equip. On)	Ambient CO	
Furnace/Space Heater (ND)	X	X	X	X [A or B]	—	X [A or B]	Smoke only
Furnace/Space Heater (ID)	X	X	X	X [A or B]	—	X [A or B]	Smoke only
Furnace/Space Heater (CC)	X	X	n/a	X [A or B]	—	X [A or B]	n/a
Water Heater (ND)	X	X	X	X [A or B]	—	X [A or B]	Smoke only
Water Heater (CC)	X	X	n/a	—	X [A or B]	—	n/a
Cook Top	X	X	n/a	—	X*	n/a	n/a
Oven/Broiler	X	X	n/a	—	X*	—	n/a
Gas Log	X	X <sup>**</sup>	n/a	—	—	—	Exhaust/Flue Smoke only
Clothes Dryer	X	X	n/a	n/a	n/a	—	n/a

**Key:**

**CC** = Closed Combustion

**ID** = Induced Draft

**ND** = Natural Draft

**X** = Test is performed.

**—** = Test is possible but not required.

**n/a** = Test is not applicable or not possible.

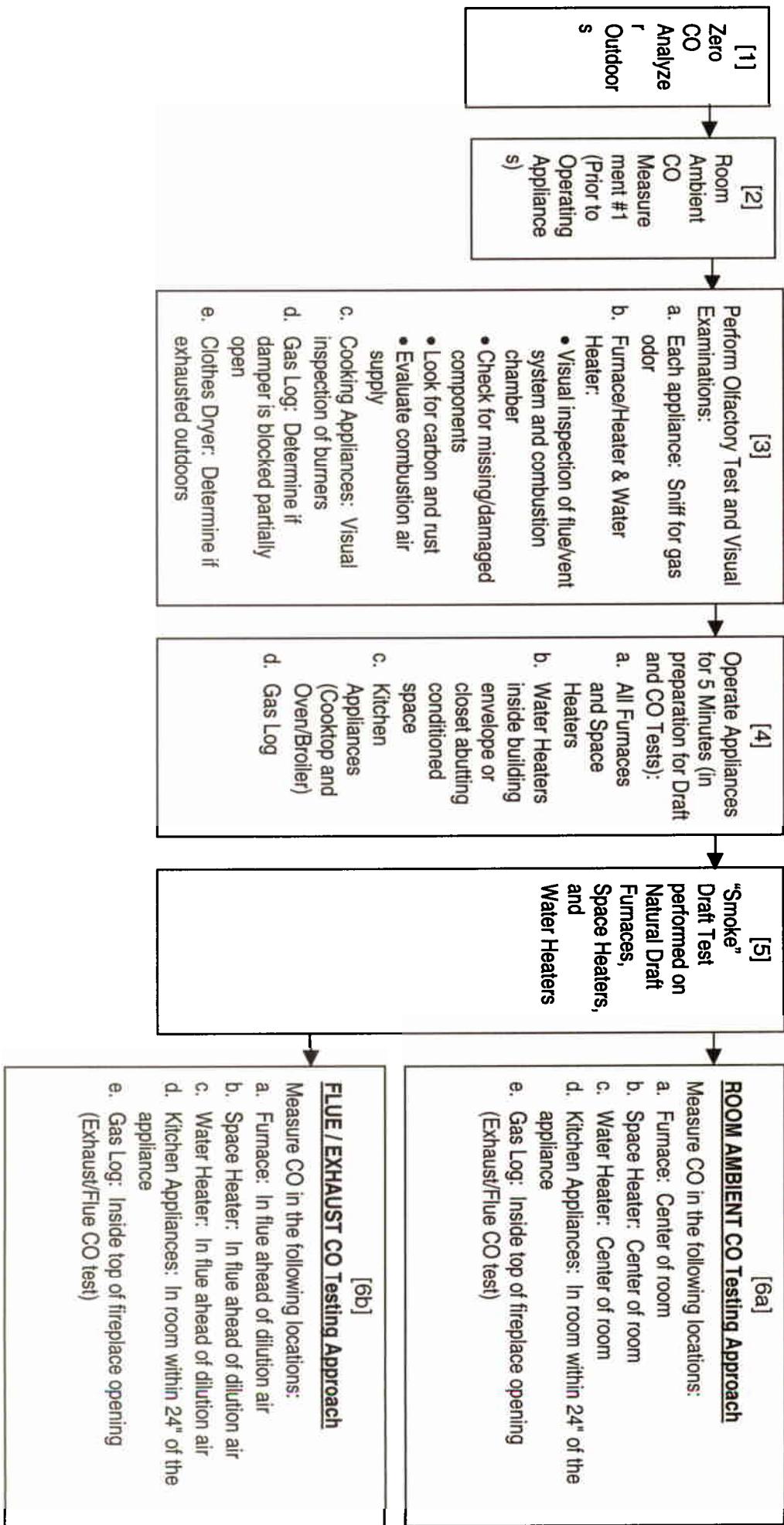
\* = Probe shall be located within 24" of appliance (rather than middle of the room).

\*\* = Check is to determine if damper is blocked partially open.

■ = Recommendation differs from the Minimum Standard.

## **ATTACHMENT 4**

### **ON-SITE NGAT SEQUENCE PER TEAM RECOMMENDATION**



**Notes:**

**Step 3:** Item c. reflects the intent of the NGAT Committee, although Visual Inspection of Cooking Appliances was not clearly articulated in the Final Report. Items d. and e. were added to the NGAT Minimum Standard “Visual Examination” protocol as a result of the NGAT Study.

**Step 6:** Item e., the CO measurement for Gas Logs is referred to as an “Exhaust/Flue CO” test, because is made inside the top edge of the fireplace opening.

## **ATTACHMENT 5**

### **PY2001 LIEE Impact Evaluation**

In compliance with D.01-05-033 and D.01-06-082, PG&E filed a PY2001 LIEE Impact Evaluation Plan, on behalf of the RRM Working Group, on July 3, 2001<sup>1</sup>. The RRM Working Group hired Xenergy to conduct the study to assess the impacts of the new rapid deployment measures implemented as part of the statewide LIEE program.

By ruling dated August 24, 2001, the Assigned Commissioner directed the RRM Working Group to hold a public workshop to discuss the plan and obtain input from the public. The September 18, 2001 workshop was attended by utility staff, consultants, the Office of Ratepayer Advocates (ORA) and interested members of the public. The following are just some of the issues raised and discussed at the workshop:

- ✓ How do you allow for the interaction of measures in the billing analysis? Is it assumed that the prior engineering estimates are close and then allocated across homes?
- ✓ Clarify the time frame of Rapid Deployment measures being studied. Will the analysis break out pre-Rapid Deployment and post-Rapid Deployment measures? Then you will need to do up-front study of the program to assess what measures are what?
- ✓ How does a billing analysis handle families who move during or right after the program year?
- ✓ How large are your samples?
- ✓ Are measures for which you're unsure of the savings potential not included in the model? Suggestion: Conduct on-site surveys to obtain more accurate priors, for instance, blower door testing.
- ✓ Are we talking about household or measure savings? Please clarify what type of savings the evaluation will produce- measure-level or household-level.

On September 24, 2001, the RRM Working Group filed a revised LIEE Impact Evaluation Plan based on input from the workshop, which was later approved by Assigned Commissioner ruling, dated November 20, 2001.

As work was about to start, SCE (the lead utility sponsoring the study) held a meeting in San Francisco on May 13, 2002 between the four utilities, Energy Division, and ORA. They went over the plan since it included not only an evaluation of RD impacts (as ordered by the D.01-05-033 and approved in the 11/20/01 ACR), but also included an evaluation of the whole LIEE program (as ordered in D.01-06-082).

Another public input workshop was held in San Francisco on August 14, 2002 to go over the preliminary ex-ante impacts and how unit savings were estimated and what assumptions were used for UEC (unit energy consumption). Non-utility/Commission attendees included: William Parker and Oscar Ortega from Community Action Agency of San Mateo, Bob Burt (Insulation Contractors Association), Fred Sebold (Regional Economic Research), Art Brice, George

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<sup>1</sup> The filing on July 2, 2001 was erroneously filed "on behalf of the Standardization Project Team" but was corrected in the July 3, 2001 filing.

Sanchez, and Joe Williams (Richard Health and Associates), John Hargrove (Sierra Pacific), and Arlene Novotney and Jim Hodges (So Cal Forum). Following are some of the issues raised and discussed:

- ✓ Note that RD included expanding refrigerator eligibility requirement to renters
- ✓ Need to clarify what definition of multi-family is being used
- ✓ How to deal with movers, i.e., will they be excluded from the billing analysis because they do not have adequate billing records?
- ✓ Concern about using PY2000 impacts in determining PY2001 ex-ante savings. Multi-family impacts for PY2000 are less than single-family impacts, but there tend to be more families per dwelling in multi-family dwellings now

The third and final public-input workshop was held in San Francisco on March 26, 2003 to go over the draft final PY2001 LIEE Impact Evaluation. By this time the preliminary finding and the basic study approach were already discussed in detail at the previous workshop. Other than representatives from the utilities, Xenergy and the Commission, the only other attendee was Bob Burt from the Insulation Contractors Association. His comments (both at the workshop and in written form) were mainly on the process evaluation portion of the filings and not the impact evaluation. The final PY2001 Impact Evaluation study was submitted in April, 2003.

In conclusion, the PY2001 Impact Evaluation study was developed after a series of opportunities for public input dating back to 2001.

### Sources

- July 2, 2001 Proposed LIEE Impact Evaluation Plan, corrected on July 3, 2001
- September 18, 2001 Public Input Workshop Report and Workshop Slides
- September 24, 2001 Revised PY2001 LIEE Impact Evaluation Plan
- May 13, 2002 LIEE Program Evaluation Planning Meeting Agenda
- August 14, 2002 PY2001 LIEE Program Evaluation (Interim Findings), Public Input Workshop Report and Workshop Presentations
- March 26, 2003 PY2001 LIEE Program Evaluation (Final Report Presentation), Public Input Workshop Report
- March 31, 2003 written workshop comments by the Insulation Contractors Association.

## ATTACHMENT 6

### SUPPLEMENTAL INFORMATION ON TEAM NGAT RECOMMENDATIONS

**TABLE 6A**  
**Comparisons of Policies under Existing and Proposed Programs,**  
**for Various Scenarios<sup>1</sup>**

#### San Diego Gas & Electric

End Use	Scenario (IOU Provides Fuel for End Use)				
	No	Yes, gas	Yes, electric	Yes, gas	Yes, electric
Space Heating	No	Yes, gas	Yes, electric	Yes, gas	Yes, electric
Air Conditioning	Yes or No	Yes or No	Yes or No	Yes or No	Yes or No
Other	Yes or No	Yes	Yes	No*	No*
Program Case	Action Taken under Scenario				
Existing Program (not Min Std.)	Do not Install Inf Red Meas	Install Inf Red Meas	Install Inf Red Meas	Install Inf Red Meas	Install Inf Red Meas
Recommended Program	Do not Install Inf Red Meas	Install Inf Red Meas	Install Inf Red Meas	Do not Install IR Meas	Do not Install IR Meas

\* In this context, a No means that a non-IOU combustion fuel (say, propane) is used for some other end use.

#### Southern California Gas

End Use	Scenario (IOU Provides Fuel for End Use)				
	No	Yes, gas	Yes, electric	Yes, gas	Yes, electric
Space Heating	No	Yes, gas	Yes, electric	Yes, gas	Yes, electric
Air Conditioning	Yes or No	Yes or No	Yes or No	Yes or No	Yes or No
Other	Yes or No	Yes	Yes	No*	No*
Program Case	Action Taken under Scenario				
Existing Program (not Min Std.)	Do not Install Inf Red Meas	Install Inf Red Meas	Not Appl**	Install Inf. Red Meas	Not Appl**
Recommended Program	Do not Install Inf Red Meas	Install Inf Red Meas	Not Appl**	Do not install IR Meas	Not Appl**

\* In this context, a No means that a non-IOU combustion fuel (say, propane) is used for some other end use. If non-IOU electricity (say, from LADWP) is used for these other end uses, infiltration reduction measures would still be installed under both program scenarios.

\*\* If electric IOU space heat, home is referred to the electric utility

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<sup>1</sup> Source: Supplemental Information from Standardization Team, submitted to Judge Gottstein electronically at her request on September 24, 2003.

### Southern California Edison

End Use	Scenario (IOU Provides Fuel for End Use)				
	No	Yes, gas	Yes, electric	Yes, gas	Yes, electric
Space Heating	No	Yes, gas	Yes, electric	Yes, gas	Yes, electric
Air Conditioning	Yes or No	Yes or No	Yes or No	Yes or No	Yes or No
Other	Yes or No	Yes	Yes	No*	No*
Program Case	Action Taken under Scenario				
Existing Program (not Min Std.)	Do not Install Inf Red Meas	Not Appl**	Install Inf Red Meas	Not Appl**	Do not Install IR Meas
Recommended Program	Do not Install Inf Red Meas	Not Appl**	Install Inf Red Meas	Not Appl**	Do not Install IR Meas

\* In this context, a No means that a non-IOU combustion fuel (say, propane) is used for some other end use.

\*\*If IOU gas space heating, the home is referred by assessor to the gas utility (almost always SoCalGas)

### Pacific Gas & Electric Company

End Use	Scenario (IOU Provides Fuel for End Use)				
	No	Yes, gas	Yes, electric	Yes, gas	Yes, electric
Space Heating	No	Yes, gas	Yes, electric	Yes, gas	Yes, electric
Air Conditioning	Yes or No	Yes or No	Yes or No	Yes or No	Yes or No
Other **	Yes or No	Yes	Yes	No*	No*
Program Case	Action Taken under Scenario				
Existing Program (not Min Std.)	Do not Install Inf Red Meas	Install Inf Red Meas	Install Inf Red Meas	Install Inf Red Meas	Install Inf Red Meas
Recommended Program	Do not Install Inf Red Meas	Install Inf Red Meas	Install Inf Red Meas	Do Not Install Inf Red	Do Not Install Inf Red

\* In this context, a No means that a non-IOU combustion fuel (say, propane) is used for some other end use. If non-IOU electricity (say, from SMUD) is used for these other end uses, infiltration reduction measures would still be installed under both program scenarios.

\*\* Water heating, cooking, etc.

**NOTE:** This set of tables provides comparisons of actions taken under the current and Team recommended NGAT protocols. There is a table for each utility. The top section of each table defines several scenarios in terms of three factors: fuels used by prospective participants for space heating, the presence of air conditioning, and the fuels used for other end uses. Please note that the presence of air conditioning was used in the table only because it was requested to be included. In fact, it does not matter for the decision on whether or not to install infiltration-reduction measures, but only for the installation of other shell measures such as ceiling insulation.

For each scenario, the table indicates what the action would be under the utility's current procedures (the Minimum Standard for SDG&E, SoCalGas and SCE, and compliance appliance safety testing procedures for PG&E), as well as the action that would be taken under the proposed policy. Please note:

- If the IOU does not provide the heating fuel, infiltration reduction measures would not be installed by any of the utilities under either set of policies. It does not matter what fuels are used for other end uses.
- The tables for SCE and SoCalGas account for the fact that homes are assessed first, then assigned to one of these utilities.
- Differences in installation of infiltration reduction occur between the two policies only in the last two scenarios. These scenarios involve cases where the IOU provides space heating fuel, but some non-IOU combustion fuel (in practice, propane) for at least one other end use.

**Table 6B**  
**Supplemental Information on Non-IOU Fuel Use and Related Issues**

**Estimates of Percentages of Homes with Non-IOU Fuels<sup>1,2</sup>**

End Use	Utility			
	SCE	SDG&E	PG&E	SoCal Gas <sup>4</sup>
Space Heat	2%	1.5%	4%	-
Water Heat	2%	2.2%	8%	-
Cooking	2%	1.1%	-	-
Pool Heater	-	0.3%	-	-
Spa Heater	-	0.4%	-	-
Estimate of percent of homes that use an IOU space heating fuel but use a non-IOU fuel for another end use.	0.5% <sup>3</sup>	1.2%	5 – 7% <sup>5</sup>	0.0%

Notes:

1. Estimates based on shares of homes with propane, the dominant non-IOU fuel
2. Figures based on entire population rather than low-income population
3. Judgmental estimate of percent of homes that use an IOU space heating fuel but use a non-IOU fuel for another end use based on comparisons of percentages with propane for space heating and non-space heating end uses. Similar percentages across end uses suggest strongly that most homes with non-space heating applications of propane have propane space heat.
4. It is highly improbable that customers with IOU natural gas service will also have a non-natural gas combustion fuel for the end uses listed. The SoCal Gas residential appliance saturation survey does not even list propane as an option for these end uses.
5. This 5-7% represents an estimate of *all* PG&E customers. The percentage in rural ZIP codes is probably higher. For example, based on LIEE program data for PY2002, 16.3% of LIEE participating customers in rural ZIP codes without PG&E gas accounts had propane appliances.

**Source:** *Supplemental Information in Support of the Final Phase 4 Report on the Low Income Weatherization Program Natural Gas Appliance Testing (NGAT) Study Results*, September 24, 2003 submittal by Joint Utilities.

## ATTACHMENT 7

# SYNOPSIS OF ADOPTED NATURAL GAS APPLIANCE TESTING PROCEDURES<sup>1</sup>

### Adopted NGAT Tests [Post-Weatherization Testing, Only]

Appliance	Olfactory Check for Gas Odor	Visual Check of Appliance and Flue/Vent		Combustion Air Evaluation (Equipment Off)	Indoor Ambient CO Tests			Smoke or Tactile Draft Checks
		Indoor Ambient CO (Equipment Off)	Indoor Ambient CO (Equip. On)		Ambient CO	Exhaust/Flue		
Furnace/Space Heater (ND)	X	X	X	X	X	—	—	Smoke only
Furnace/Space Heater (ID)	X	X	X	X	X	—	—	n/a
Furnace/Space Heater (CC)	X	X	n/a	X	X	—	—	Smoke only
Water Heater (ND)	X	X	X	—	X	—	—	n/a
Water Heater (CC)	X	X	n/a	—	X	—	—	n/a
Cook Top	X	X	n/a	—	X*	n/a	—	n/a
Oven/Broiler	X	X	n/a	—	X*	—	—	n/a
Gas Log	X	X**	n/a	—	—	—	Exhaust/Flue	Smoke only
Clothes Dryer	X	X	n/a	n/a	n/a	—	—	n/a

Key:

CC = Closed Combustion

ID = Induced Draft

ND = Natural Draft

X = Test is performed.

— Test is possible, but is not to be performed  
[Flue testing may be used as one diagnostic test (but is not required) if home fails indoor ambient CO test]

n/a = Test is not applicable or not possible.

\* = Probe shall be located within 24" of appliance (rather than middle of the room).

\*\* = Check is to determine if damper is blocked partially open.

■ = Adopted Procedure differs from the Minimum Standard.

<sup>1</sup> These procedures apply to all LIEE-eligible homes that take service from PG&E, SCE, SoCalGas or SDG&E (i.e., an Investor-Owned Utility, or "IOU") for space heating and utilize only IOU fuels for other combustion appliances in the home. Until we adopt a final policy on the treatment of the homes that utilize non-IOU fuels for combustion appliances, the utilities are authorized to continue their current CO testing procedures to qualify these homes for infiltration-reduction measures, as discussed in this decision. For SoCalGas and SDG&E, this means that the utility would continue to conduct ambient CO tests for these homes based on the current Minimum Standard, but in all other respects incorporate the new NGAT procedures outlined above. PG&E is authorized to continue to conduct both pre- and post-weatherization testing of these homes using its current combustion appliance testing procedures, in order to qualify them for infiltration-reduction measures, until further notice.