Table 1: Annual Respondent Burden and Cost - NESHAP for Industrial, Commercial, ar

Number of Respondents per Year (Average)	Number of Units (Average)	Number of Responses Per Year (Average)
121	1,040	242
3	26	12
5	41	3
1	2	3
66	570	132
0	0	0
45	385	23
0	0	0
669	5,733	1,530
33	261	99
1,027	8,811	514
41	326	103
2,012	17,196	2,661
1,891		2,501
121		160
	Respondents per Year (Average)  121 3 5 1 66 0 45 0 669 33 1,027 41 2,012	Respondents per Year (Average)       Number of Units (Average)         121       1,040         3       26         5       41         1       2         66       570         0       0         45       385         0       0         669       5,733         33       261         1,027       8,811         41       326         2,012       17,196         1,891       1,891

<sup>1</sup> Totals have been rounded to 3 significant figures. Figures may not add exactly due to rounding.

#### 1d Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal)

TOTAL LABOR BURDEN AND COSTS Total Annual O&M Reporting Recordkeeping **Total Labor Hours Total Labor Cost** and Annualized Capital Costs per year 135,217 \$21,531,254.93 \$74,866,304 61,410 196,627 3,857 1,603 5,460 \$597,908.52 \$3,223,948.00 347 503 \$98,032.00 156 \$55,093.72 74 48 122 \$13,348.42 \$4,456.00 77,487 33,638 111,125 \$12,168,470.96 \$17,695,826 0 0 \$0 \$0 3,045 1,220 4,265 \$467,037.32 \$857,780 0 0 0 \$0.00 \$0 142,506 165,160 \$18,085,504.87 \$18,867,183 22,654 6,258 9,804 \$1,073,571.94 \$750,375 3,546 69,654 27,358 97,012 \$10,623,107.89 \$13,921,380.00 2,027 6,752 \$739,326.22 \$726,328.00 4,725 443,169 153,660 596,829 65,354,625 \$131,011,612 \$131,000,000 597,000 \$65,400,000 Rounded by Sector<sup>1</sup> 416,579 144,441 561,000 \$61,400,000 \$123,000,000

35,800

\$3,920,000

\$7,860,000

9,220

26,590

Total Costs
\$96,397,558.93
\$3,821,856.52
\$153,125.72
\$17,804.42
\$29,864,296.96
\$0.00
\$1,324,817.32
\$0.00
\$36,952,687.87
\$1,823,946.94
\$24,544,487.89
\$1,465,654.22
\$196,366,237
\$196,000,000
\$185,000,000

\$11,800,000

No. Response per Respondent	Total Annual Response
1.99	242
4.00	12
0.56	3
3.00	3
2.00	132
0.00	0
0.51	23
0.00	0
2.29	1530
2.97	99
0.50	514
2.50	103
1.32	2661
224	hours per respons

Table 2: Average Annual EPA Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal)

	EPA hours				Manamt			SS
	per	Number of	EPA hours per	Technical	hours per	Clerical hours		Footnotes
Dundan Hans	occurrence	occurrences	occurrence per	hours per	year	per year	400 . 44	ltoc
Burden Item	(A)	per year (B)	year (C=AxB)	year (D=C)	(E=Dx0.05)	(F=Dx0.1)	(H) Costs, \$ k	
1. Familiarization with rule requirements	10	0	0	0	0	0	\$0.00	а
Enter and update information into agency recordkeeping								
system	2	156	312	312	15.6	31.2	\$16,823.66	b
3. Required activities								
A. Review and approve monitoring plan	20	3	60	60	3	6	\$3,235.32	n
B. Review and approve fuel monitoring plan	20	418	8,360	8,360	418	836	\$450,787.92	0
C. Observe initial stack/performance test	40	21	840	840	42	84	\$45,294.48	С
D. Observe repeat performance test	40	117	4,680	4,680	234	468	\$252,354.96	d
E. Review operating parameters	2	104	208	208	10.4	20.8	\$11,215.78	е
F. Review continuous parameter monitoring	2	1,714	3,428	3,428	171.4	342.8	\$184,844.62	f
4 Excess Emissions Enforcement Activities and Inspections	24	10	0	0	0	0	\$0	g
5 Notification requirements								
A. Review initial notification that sources are subject to the								
standard	2	78	156	156	7.8	15.6	\$8,411.83	b
B. Review notification of initial performance tests and review								
test plan	20	104	2,080	2,080	104	208	\$112,157.76	е
C. Review notification of compliance status	2	78	156	156	7.8	15.6	\$8,411.83	b
6. Reporting requirements			0	0	0	0	\$0.00	
A. Review semiannual compliance report	4	398	1,592	1,592	79.6	159.2	\$85,843.82	h
B. Review annual compliance report	2	660	1,320	1,320	66.0	132.0	\$71,177.04	i
C. Review biennial compliance report	1	560	560	560	28	56	\$30,169.36	j
B. Review initial report on results of energy audit	2	0	0	0	0	0	\$0	L
			als/incidentals) + (	\$600 round				
	trip) = \$1482 p	er trip					\$204,516	m
TOTAL BURDEN AND COST (rounded)					27,300		\$1,490,000	р

a Number of hours for agency staff to refamiliarize themselves with the rule requirements.

- b Number of occurences is based on the total number of affected facilities that are required to submit initial notifications (all new boilers in the large and small solid, liquid, and gaseous subcategories).
- c Number of occurences is based on the assumption that EPA personnel will observe 20% of the initial performance tests that occur.
- d Number of occurences is based on the assumption that of the units that test, 10% will have to retest and EPA personnel will observe all these retests. In addition solid fuel units are expected to re-test to obtain worst-case conditions for both Hg and HCI emissions.
- e Number of occurences is based on the number of units that will test and set/submit operating limits.
- f Number of occurences is based on the number of units maintaining records of control device parameters.
- g Number of occurences is based on the assumption that of the units that test, 10% of them will have exceedances and need enforcement.
- h Number of occurences is the number of units that will submit these semi-annual compliance reports, 2 reports per year per respondent.
- i. Number of occurences is the number of units that will submit these annual compliance reports.
- j. Number of occurences is the number units that will submit these biennial compliance reports.
- k These rates are from the Office of Personnel Management (OPM), 2010 General Schedule, which excludes locality rates of pay. The rates have been increased by 60 percent to account for the benefit packages available to government employees. These rates can be obtained from the OPM web site, http://www.opm.gov/oca/payrates/index/htm.
- L Energy audits only occur at existing facilities.
- m Total cost is based on the number of trips taken by EPA to observe performance tests in year 1 (4.A. & 4.B.) multiplied by \$1482 per trip. The source for hotel and meals/incidental costs is based on FY18 per diem rates, averaged across all locations in the United States. Airfares are estimated based on experience from other rulemakings. See: https://www.perdiem101.com/conus/2018

Table 3: Respondents and Units by Subcategory - NESHAP for Industrial, Commercial, and In

Table 3. Respondents	C		<u>,                                    </u>	·		•
					Year	1
Boiler Type	Respondents per Year (Current)	Units per Year (Current)	New Respondents per Year	New Units Per Year	Total Respondents	Total Units
Large Solid Units	118	1,014	3	26	121	1,040
Small and Limited Use Solid Units <sup>a</sup>	5	40	1	2	5	42
Large Liquid Units	66	570	0	0	66	570
Small and Limited Use Liquid Units	45	385	0	0	45	385
Large Gaseous Units	636	5,472	33	261	669	5,733
Small and Limited Use Gaseous Units	986	8,485	41	326	1,027	8,811
Subtotals	1,856	15,966	78	615	1,934	16,581

a For new small solid-fuel units, only one new respondent is anticipated for the duration of the three year period.

## stitutional Boilers and Process Heaters

Year 2	)	Year 3	
Total Respondents	Total Units	Total Respondents	Total Units
125	1,066	128	1,092
6	44	6	46
66	570	66	570
45	385	45	385
703	5,995	736	6,256
1,068	9,137	1,109	9,463
2,012	17,197	2,090	17,812

Number of Respondents	New	Existing	Total
Year 1	78	1856	1934
Year 2	78	1934	2012
Year 3	78	2011	2090
Total	234	5801	6036
Average	78	1934	2012

		REPORTING		RECORD	KEEPING
ICRAS SUMMARY	Annual Burden Hours	Number of Respondents (Facilities)	Number of Responses	Annualized Capital/Start-up and O&M	Annual Burden Hours
Annual Burden	443,169	2,012	2,661	\$ 131,011,612	153,660
Cost per Response				\$ 73,808	
Burden Hours per Response				224	

INDUSTRY	3- year period	Average per year	Public Sector	Private Sector
Reporting Hours		443,169	26,590	416,579
Recordkeeping Hours		153,660	9,220	144,441
Total HOURS	596,829	198,943	11,937	187,007
TOTAL COSTS (non-labor)	\$ 131,011,612	\$ 43,670,537	\$ 2,620,232	\$ 41,050,305
Total LABOR COSTS	\$ 65,354,625	\$ 21,784,875	\$ 1,307,092	\$ 20,477,782
TOTAL LABOR AND NON-Labor COSTS	\$ 196,366,237	\$ 65,455,412	\$ 3,927,325	\$ 61,528,088
Total Responses		2,661	160	2,501
Small Entity Respondents per year	•		11	170
Total Respondents per year			121	1,891

AGENCY	Average per year	Average per	year (rounded)
Hours	27,300		27,300
Costs (labor + travel)	\$ 1,490,000	\$	1,490,000

	АВ	С	D	E	F	G
1						
2	<u>Labor Rates</u>					
3						
4	Category	Rate	Note			
5	Technical	\$112.98	June 2017 Labor Rates			
6	Clerical	\$54.81	June 2017 Labor Rates			
7	Managerial	\$149.35	June 2017 Labor Rates			
8	General Contractor	\$80.00				
9	Certfied Energy Audit Contractor	\$56.78				
10		•	•	•		
11	Existing Boiler Data					
12						
13			<b>ADJUSTED UNIT COU</b>	NTS IN COLUMN D TO ACCOUN	NT FOR SUBCATEGORY CH	IANGES
14	Sum of Unit Count				Sum of Facility Count	
15	Mact Floor Fuel Category	Size Category	Total		Mact Floor Fuel Category	Size Category
16		Limited Use	4			Limited Use
17		<10	21			<10
18	Biomass	>=10 to 100	277		Biomass	>=10 to 100
19		100 to 250	115			100 to 250
20		>250	171			>250
21		Limited Use	15			Limited Use
22		<10	0			<10
23	Coal	>=10 to 100	104		Coal	>=10 to 100
24		100 to 250	196			100 to 250
25		>250	151			>250
26		Limited Use	333			Limited Use
27		<10	8101			<10
28	Gas 1 (NG Only)	>=10 to 100	3732		Gas 1 (NG Only)	>=10 to 100
29		100 to 250	1119			100 to 250
30		>250	543			>250
31		Limited Use				Limited Use
32		<10				<10
33	Gas 1 (Other Gases)	>=10 to 100			Gas 1 (Other Gases)	>=10 to 100
34		100 to 250				100 to 250
35		>250				>250
36		Limited Use	4			Limited Use
37		<10	47			<10
38	Gas 2	>=10 to 100	28		Gas 2	>=10 to 100
39		100 to 250	22			100 to 250

	Α	В	С	D	E	F	G
40	Ť		>250	28		·	>250
41	1		Limited Use	125			Limited Use
42	1		<10	260			<10
43	1	Liquid	>=10 to 100	359		Liquid	>=10 to 100
44	1	'	100 to 250	147		· ·	100 to 250
45	1		>250	64			>250
46	1	Grand Total		15966		Grand Total	
47			•	•	•		•
48	1	Mercury Fuel Spec Analysis	(før other Gas 1 uni	its)		Number which will repeat sta	ack test due to swite
49		Number estimated to test	387			1014	(applicable to sol
50			·				
51		Notification of Alternative fue	l use (15.8% report	ed the use of liquid, large	gas 1 units)		
52		85	2				
53							
54		Notes:					
55	_	PM CEMS required for all un					
56		Tune-ups required for all unit	s <10 and all gas 1	units, regardless of size			
57							
58		New Boiler Data			<b>ASSUMPTIONS: Assume consta</b>	ant growth same as prior prop	osal (no coal, no lic
						3 1 1 1	(110 0000, 110 11
59							
59 60		Sum of 2013- Estimated num	ber of new boilers		1	Sum of 2013- Estimated num	
-		Sum of 2013- Estimated num	ber of new boilers				
-		Sum of 2013- Estimated num  Standard Fuel Category	nber of new boilers				
60			iber of new boilers			Sum of 2013- Estimated num	
61			SizeCategory	Total New/3-Year Pd		Sum of 2013- Estimated num	nber of Facilities  SizeCategory
61			SizeCategory	4		Sum of 2013- Estimated num	SizeCategory
60 61 62 63		Standard Fuel Category	SizeCategory <10 >=10 to 100	47		Sum of 2013- Estimated num Standard Fuel Category	SizeCategory <10 >=10 to 100
60 61 62 63 64			SizeCategory <10 >=10 to 100 >100 to 250	47 18		Sum of 2013- Estimated num	SizeCategory <10 >=10 to 100 >100 to 250
60 61 62 63 64 65		Standard Fuel Category	SizeCategory <10 >=10 to 100 >100 to 250 >250	47 47 18 13		Sum of 2013- Estimated num Standard Fuel Category	SizeCategory <10 >=10 to 100 >100 to 250 >250
60 61 62 63 64 65 66		Standard Fuel Category	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10	4 47 18 13 0		Sum of 2013- Estimated num Standard Fuel Category	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10
60 61 62 63 64 65 66 67		Standard Fuel Category  Biomass	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100	4 47 18 13 0 0		Sum of 2013- Estimated num  Standard Fuel Category  Biomass	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100
60 61 62 63 64 65 66 67 68		Standard Fuel Category	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250	4 47 18 13 0		Sum of 2013- Estimated num Standard Fuel Category	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250
60 61 62 63 64 65 66 67 68 69		Standard Fuel Category  Biomass	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250	447 18 13 0 0 0 0 0		Sum of 2013- Estimated num  Standard Fuel Category  Biomass	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 250 >250 >250
60 61 62 63 64 65 66 67 68 69 70		Standard Fuel Category  Biomass	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >100 to 250 >250 <10	4 47 18 13 0 0 0 0 0 0 978		Sum of 2013- Estimated num  Standard Fuel Category  Biomass	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10
60 61 62 63 64 65 66 67 68 69 70 71		Standard Fuel Category  Biomass  Coal	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100	4 47 18 13 0 0 0 0 0 0 978 553		Sum of 2013- Estimated num  Standard Fuel Category  Biomass  Coal	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >=10 to 100 >=10 to 100
60 61 62 63 64 65 66 67 68 69 70 71 72		Standard Fuel Category  Biomass	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250	4 47 18 13 0 0 0 0 0 978 553 165		Sum of 2013- Estimated num  Standard Fuel Category  Biomass	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 250 >250 <10 >=10 to 100 >100 to 250
60 61 62 63 64 65 66 67 68 69 70 71 72 73		Standard Fuel Category  Biomass  Coal	SizeCategory <10 >=10 to 100 >100 to 250 >250	4 47 18 13 0 0 0 0 0 978 553 165		Sum of 2013- Estimated num  Standard Fuel Category  Biomass  Coal	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >250 >250 <10 >=10 to 100 >100 to 250 >250
60 61 62 63 64 65 66 67 68 69 70 71 72		Standard Fuel Category  Biomass  Coal	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250	4 47 18 13 0 0 0 0 0 978 553 165		Sum of 2013- Estimated num  Standard Fuel Category  Biomass  Coal	SizeCategory <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 100 >100 to 250 >250 <10 >=10 to 250 >250 <10 >=10 to 100 >100 to 250

100 to 250   250		Α	В	С	D	Е	F	G
10			Gas 2		0		Gas 2	>100 to 250
Part					0			
Company   Comp					0			
Section   Sect			Liquid		0		Liquid	
Grand Total   1844   Mercury Fuel Spec Analysis (for other Gas 1 units)   Number estimated to test   Number which will repeat stack test due to swite (applicable to swite (			1		0		4	
Mercury Fuel Spec Analysis (for other Gas 1 units)   Number which will repeat stack test due to swite (applicable to sold sold stack test due to swite (applicable to sold sold sold sold sold sold sold sol		-	Crond Total	>250			Crand Tatal	>250
Mercury Fuel Spec Analysis (thr other Gas 1 units)   Number which will repeat stack test due to swit (applicable to swit (ap			Grand Total		1044		Grand Total	
Number estimated to test			Mercury Fuel Spec Analysis (fo	or other Gas 1 unit	s)	]	Number which will repeat stac	k test due to swite
Section   Sect		- 1			,			
Sample   S		1 '						` ' '
Sample	87							
Not-for-Profit	88	١.						
Not-for-Profit   True	89		5_AffectedSector	8_Small Entity	Count	% of Total		
Not-for-Profit	90		Not-for-Profit	False	22			.
Private Enterprise   False   1276	91		Not-for-Profit	True	6	0.94	Private %	
Private Enterprise   True   131	92		Not-for-Profit	Unknown	3	0.06	Public %	
Private Enterprise   Unknown   80	93		Private Enterprise	False	1276			
96   Public Sector	94		Private Enterprise	True	131			
97         Public Sector         True         14         Private Sector         0.1           98         Public Sector         Unknown         6         Public Sector         0.15           99         Did not use these unknowns:         Unknown         Value	95		Private Enterprise	Unknown	80			
98         Public Sector         Unknown         6 Public Sector         0.15           99         Did not use these unknowns:         Unknown         Unknown         78           101         Unknown         Unknown         78           102         5_AffectedSector         8_Small Entity         Count           Not-for-Profit         False         22           Not-for-Profit         True         6           106         Private Enterprise         False           108         Private Enterprise         True           109         Public Sector         False           100         Public Sector         False	96		Public Sector	False	82		% Small Entity	
Did not use these unknowns:	97		Public Sector	True	14	Private Sector	0.1	
100	98		Public Sector	Unknown	6	Public Sector	0.15	
100	00						•	•
101       Unknown       Unknown       78         102       5_AffectedSector       8_Small Entity       Count         104       Not-for-Profit       False       22         Not-for-Profit       True       6         106       Private Enterprise       False       1276         Private Enterprise       True       131         109       Public Sector       False       82	99		Did not use these unknowns:					
101       Unknown       Unknown       78         102       5_AffectedSector       8_Small Entity       Count         104       Not-for-Profit       False       22         Not-for-Profit       True       6         106       Private Enterprise       False       1276         Private Enterprise       True       131         109       Public Sector       False       82	100		Unknown	False	3			
102         103       5_AffectedSector       8_Small Entity       Count         104       Not-for-Profit       False       22         105       Not-for-Profit       True       6         106       Private Enterprise       False       1276         108       Private Enterprise       True       131         109       Public Sector       False       82	101	1 1	Unknown	Unknown	78			
104       Not-for-Profit       False       22         105       Not-for-Profit       True       6         106       Private Enterprise       False       1276         108       Private Enterprise       True       131         109       Public Sector       False       82		1 1				ı		
105       Not-for-Profit       True       6         106       Private Enterprise       False       1276         108       Private Enterprise       True       131         109       Public Sector       False       82	103		5_AffectedSector	8_Small Entity	Count			
106       Private Enterprise       False       1276         108       Private Enterprise       True       131         109       Public Sector       False       82	104		Not-for-Profit	False	22			
106       Private Enterprise       False       1276         108       Private Enterprise       True       131         109       Public Sector       False       82	105	1 1	Not-for-Profit	True				
108       Private Enterprise       True       131         109       Image: Control of the private Enterprise of the Enterpris	106							
109         Public Sector         False         82	107		Private Enterprise	False	1276			
109         Public Sector         False         82	108		Private Enterprise	True	131			
	109							
111 Public Sector True 14	110		Public Sector	False	82			
	111		Public Sector	True	14			

	Α	В	С	D	E	F	G
112							
113		Did not use these unknowns:					
114		Unknown	False	3			
115		Unknown	Unknown	78			
116		Not-for-Profit	Unknown	3			
117		Private Enterprise	Unknown	80			
118		Public Sector	Unknown	6			
119	•						
120							
121		Fuel Monitoring Plan					
122		For facilities which have emiss	ion limits or for Ga	as facilities which perforn	n the Hg gas spec		
123		830					
124							

	Н	I	J	K	L	М	N	0	Р	Q	R
1											
2							ASSUMPTIONS:				
3										3 years of growth from p	
4								•		oilers have been converte	• •
5 6										ers have been shutdown, y using revised unit count	
7										y using revised unit count <sub>I</sub> 's to familiarization with r	
8										gency to 2017 values.	ule requirements
						Opaan	d labor rates for	maasti	y ana a	generate 2017 values.	
9						Additio	nal assumptions	update	d in foll	owing spreadsheets (see	comments)
10										3 - 1 - 1 - 1 - 1 - 1 - 1	,
11											
12											
13											
14		_									
	Total						of Limited Use U		ī	Sum of Unit Count	
16	1					Mact F	Size Category	Total		Mact Floor Fuel Catego	
17	2						<10	0			<10
18	32					Biomas	>=10 to 100	1		Biomass	>=10 to 100
19	13					7.0111.00	100 to 250	3	t	Biomass	100 to 250
20	20						>250	0			>250
21	2						-10	1 0	1		110
22	12						<10 >=10 to 100	0			<10 >=10 to 100
24	23					Coal	100 to 250	7		Coal	100 to 250
25	18						>250	1			>250
26	39	-					7230		l		7230
27	942						<10	7	l		<10
28	434						>=10 to 100	215			>=10 to 100
29	130					1 (NG	100 to 250	89	4	Gas 1 (NG Only)	100 to 250
30	63						>250	22			>250
31											
32							<10				<10
33						Other	>=10 to 100			Cos 1 (Other Coses)	>=10 to 100
34						Other	100 to 250			Gas 1 (Other Gases)	100 to 250
35							>250				>250
36	0	4									
37	5						<10	0			<10
38	3					Gas 2	>=10 to 100	0		Gas 2	>=10 to 100
39	3					Jus 2	100 to 250	4		Jus 2	100 to 250

	Н	I	J	K	L	М	N	0	Р	Q	R
40	3						>250	0			>250
41	15				1						
42	30						<10	13			<10
43	42					Liquid	>=10 to 100	57		Liquid	>=10 to 100
44	17						100 to 250	40			100 to 250
45	7				0	1 = -	>250	15		One and Take I	>250
46	1856				Gr	and To	tai	481		Grand Total	
47	hing fuels					ı	-10	1 20	.,		<10
	ching fuels					-	<10	20			<10
49 50	id units)					-	>=10 to 100	280 143			>=10 to 100 100 to 250
51						ŀ	100 to 250 >250	38			>250
52						I	>250	] 30	Х		>250
53											
54											
55											
56											
57											
	quid, no gas 2)					l					
59	quia, iie gale =/										
60											
61											
	Total New/3-Year P	d					New Responder	nts/Yea		7	espondents/Year
62	1						Small Biomass		1		Large Solid
63	6						Large Biomass		3		Large Liquid
64	2						Small Coal		0		Large Gas
65	2						Large Coal		0		Small Solid
66	0						Small Gas 1		41		Small Liquid
67	0						Large Gas 1		33 0	1	Small Gas
68 69	0						Small Gas 2		0		Total Existing
70	123						Large Gas 2 Small Liquid		0	1	
71	70						Large Liquid		0		
72	21						Total New		78		
73	9						TOTALINGV	<u> </u>	10	ני	
74	0										
75	0										
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	Н	I	J	K	L	М	N	0	Р	Q	R
76	0		average # of boi	ers per facility							
77	0		8								
78	0		-		_						
79	0										
80	0										
81 82	0 231										
83	231										
	hing fuels										
85	id units)										
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3	D62-D82, added		· · ·						
		crease # of coal-fired boilers by 22% and increase gas-fired by 22%) (Cells W22-W25_							
	gory (cells V22-V	•							
			on three year growth (cel						
7	(10 nrs) for ig exis	ting sources (5	hrs) for sm existing cate	gories (left at 40 nrs fo	or new)				
8									
9									
10									
11				1					
12									
13									
14									
	UPDATED COLU	IMN TO ADJU	ST UNIT CATEGORY TO	TALS TO ADD 3-YE	AR GROWTH TO EXISTING VALU				
16	Total + 3-year gr			l					
17	21								
18	278	231							
19	118	100							
20	171	158		ADJUSTMENTS TO	NEW COAT AND NG UNIT COUNT				
21				<b>#Units Shutdown</b>	# Units Converted to NG				
22	0	4	0	0	0				
23	147				32				
24	271	_			60				
25	203	_	0.326892109500805		45				
26	621			18	137				
27	8108	4							
28	3915	4							
29	1148	4							
30	520	454							
31									
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35 36									
36	47	47							
38	28								
39	26	26							
39		1 20							

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42	273	273			
43	416	416			
44	187				
45	79				
46	15984	14140			
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48	8449				
49	4784				
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66	45	45			
67	986				
68	1856				
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20	<b>IS BASED ON SUBCATEGORY CHANGES:</b>	
21	Total Number of Units Removed	
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# **Agency Labor Rates**

Managerial	\$64.80	Updated Labor rates to 2017 General Schedule
Clerical	\$26.02	
Technical	\$48.08	

# Per Diem Info

Hotel	\$201	average 2018 rates, https://www.perdiem101.com/conus/2018
Meals	\$93	average 2018 rates, https://www.perdiem101.com/conus/2018
Airfare	\$600	
Trip Length	3	

## Other Data

Percent of Stack Tests Observed	20%
Estimated Percent Retesting	10%
Estimated Percent Emission Exceedences	10%

Table 1.B.: Annual Respondent Burden and Cost - NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal)

				Existi	ng Large Soli	d Fuel Units								
Burden Item	(A) Respondent Hours per Occurrence (Technical hours)	(B) Certified Energy Audit Cost per Occurrence	(C) Stack Testing and Fuel Analysis Cost Per Occurrence	(D) Other Non-Labor Costs Per Occurrence	(E) Number of Occurrences Per Respondent Per Year	(F) Technical Hours per Respondent Per Year (A X E)	(G) Number of Respondents Per Year	(H) Technical Hours per Year @ \$99.16 (F X G)	(I) Clerical Hours per Year @ \$50.88 (H X 0.1)	(J) Management Hours per Year @ \$127.43 (H X .05)	(K) Total Labor Costs Per Year	(L) Total Non- Labor Capital Costs Per Year [(B+C+D)xExG]	(M) Total Number of Responses per Year (E X G)	Footnotes
1. Applications	na													
Surveys and Studies	na													
Reporting Requirements														
A. Familiarization with Rule Requirements	10	\$0	\$0	\$0	1	10	121	1,210	121	61	\$152,373	\$0	121	a
B. Required Activities														
Conduct Energy Audit														
a) Commerical	20	\$854	\$0	\$0	1	20	0	0	0	0	\$0	\$0	0	b, c, d
b) Industrial	20	\$18,292	\$0	\$0	1	20	0	0	0	0	\$0	\$0	0	b, c, d
Initial Stack Test and Report (for PM)	12	\$0	\$5,000	\$0	1	12	0	0	0.0	0.0	\$0	\$0	0	c,h
Initial Stack Test and Report (for Hg)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	С
Initial Stack Test and Report (for HCl)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	С
Initial Stack Test and Report (for CO)	12	\$0	\$7,000	\$0	1	12	0	0	0	0	\$0	\$0	0	С
Annual Stack Test and Report (for PM)	12	\$0	\$5,000	\$0	1	12	1,040	12,480	1,248.0	624.0	\$1,571,588	\$5,200,000	0	c,h,i
Annual Stack Test and Report (for Hg)	12	\$0	\$8,000	\$0	1	12	1,040	12,480	1,248.0	624.0	\$1,571,588	\$8,320,000	0	c, i
Annual Stack Test and Report (for HCl)	12	\$0	\$8,000	\$0	1	12	1,040	12,480	1,248.0	624.0	\$1,571,588	\$8,320,000	0	c, i
Annual Stack Test and Report (for CO)	12	\$0	\$7,000	\$0	1	12	1,040	12,480	1,248.0	624.0	\$1,571,588	\$7,280,000	0	c, i
<ol> <li>Repeat Stack Test and Report if Switch Fuels (for Hg and HCl)</li> </ol>	24	\$0	\$16,000	\$0	1	24	1,040	24,960	2,496	1,248	\$3,143,175	\$16,640,000	0	c,j
<ol> <li>Initial Fuel Analysis for Mercury and HCL Content</li> </ol>	5	\$0	\$400	\$0	1	5	0	0	0	0	\$0	\$0	0	c,g
<ol><li>Monthly Fuel Analysis for Mercury and HCL Content</li></ol>	5	\$0	\$400	\$0	12	60	0	0	0	0	\$0	\$0	0	c,g
13. Annual Tune-up	12	\$0	\$2,875	\$0	1	12	1,040	12,480	1,248.0	624.0	\$1,571,588	\$2,990,000	0	c,k
14. Continuous Parameter Monitoring														m
Establish Site-specific monitoring plan (all)	40	\$0		\$0	1	40	0	0	0	0	\$0	\$0	0	С
Opacity														
a) initial	10	\$0	\$0	\$43,100	1	10	0	0	0.0	0.0	\$0	\$0	0	c,m
b) annual	10	\$0	\$0	\$14,700	1	10	528	5,280	528.0	264.0	\$664,902	\$7,761,600	0	c,m
PM (only sources greater than 250 mmBtu/hr)														
a) initial	10	\$0	\$0	\$158,000	1	10	0	0	0.0	0.0	\$0	\$0	0	c,L,m
b) annual	10	\$0	\$0	\$56,100	1	10	207	2,070	207.0	103.5	\$260,672	\$11,612,700	0	c,L,m
02														
a) initial	10	\$0	\$0	\$8,523	1	10	0	0	0	0	\$0	\$0	0	c,m
b) annual	10	\$0	\$0	\$1,436	1	10	1,114	11,140	1,114	557	\$1,402,843	\$1,599,704	0	c,m
Scrubber System Monitoring and Operation														
(for units with wet scrubbers)														
a) initial	10	\$0	\$0	\$24,300	1	10	0	0	0	0	\$0	\$0	0	c,m
b) annual	10	\$0	\$0	\$5,600	1	10	401	4,010	401	201	\$504,973	\$2,245,600	0	c,m
Bag Leak Detection System Operation (sources that have fabric filters)														
a) initial	10	\$0	\$0	\$25,500	1	10	0	0	0	0.0	\$0	\$0	0	c,m
b) annual	10	\$0	\$0	\$9,700	1	10	61	610	61	30.5	\$76,816	\$591,700	0	c,m
DIFF Monitor														
a) initial	10	\$0	\$0	\$43,500	1	10	0	0	0	0.0	\$0	\$0	0	c,m
b) annual	10	\$0	\$0	\$26,500	1	10	76	760	76	38.0	\$95,706	\$2,014,000	0	c,m
Carbon Injection Monitoring System (all sources that use ACI to control Hg)														
a) initial	10	\$0	\$0	\$115,000	1	10	0	0	0	0.0	\$0	\$0	0	c,m
b) annual	10	\$0	\$0	\$9,700	1	10	30	300	30	15.0	\$37,779	\$291,000	0	c,m
C. Create Information	na													
D. Gather Information	na													
E. Report Preparation														
Initial Notification that Source is Subject	2	\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0	а
Notification of Compliance Status	8	\$0	\$0	\$0	1	8	0	0	0.0	0.0	\$0	\$0	0	С
Initial Report on results of Energy Audit	5	\$0	\$0	\$0	1	5	0	0	0.0	0.0	\$0	\$0	0	С
Semi-annual Compliance Report	20	\$0	\$0	\$0	2	40	121	4,840	484	242	\$609,494	\$0	242	a
Reporting Subtotal									135,217		\$14,806,673	\$74,866,304	242	
Recordkeeping Requirements														$\perp$
A. Familiarization with Rule Requirements	Included in 3a													$\vdash$
B. Implement Activities	na					-								$\vdash$
C. Develop Record System	na					-								е
D. Record Information		L									******			$\vdash$
Records of Operating Parameter Values	20	\$0	\$0	\$0	1	20	1,040	20,800	2,080	1,040	\$2,619,313	\$0	0	С
Records of Startup, Shutdown, Malfunction	15	\$0	\$0	\$0	1	15	1,040	15,600	1,560.0	780.0	\$1,964,485	\$0	0	c,n
Records of Stack Tests	2	\$0	\$0	\$0	1	2	1,040	2,080	208.0	104.0	\$261,931	\$0	0	С
Records of Monitoring Device Calibrations	2	\$0	\$0	\$0	1	2	1,040	2,080	208.0	104.0	\$261,931	\$0	0	С
5) Records of All Compliance Reports Submitted	2	\$0	\$0	\$0	2	4	1,040	4,160	416.0	208.0	\$523,863	\$0	0	С
Records of Monthly Fuel Use	0.5	\$0	\$0	\$0	12	6	1,040	6,240	624.0	312.0	\$785,794	\$0	0	С
E. Personnel Training	40	\$0	\$0	\$0	1	40	61	2,440	244	122	\$307,266	\$0	0	f
F. Time for Audits	na													$\sqcup$
Recordkeeping Subtotal							l		61,410		\$6,724,582	\$0	0	$\sqcup$
Totals	1								196,627		\$21,531,255	\$74,866,304	242	
	•										•		-	-

a The burden on existing sources to refamiliarize themselves with the rule requirements is assumed at 10 hours.

- c It is assumed that the affected existing units have conducted an audit, developed an initial site-specific testing and monitoring plan, and submitted initial notifications following the compliance date of January 31, 2016. It is assumed that all existing units are submitting semi-annual reports and conducting the required recordkeeping.
- d Cost per occurrence for energy audit professionals including an phone screening to discuss the facility prior to a visit, a 2 to 4 hour site visit, and an additional 2-4 hours to prepare a follow-up report on recommendations and findings. These site visits are assumed to be conducted by certified energy professionals
- energy professionals.

  f For on-going training activities to keep personnel updated in order to implement compliance activities. Assumes half of respondents will conduct training each year.
- e Assumes facility must already maintain records on boiler insurance and/or maintenance schedule. No new record system would be required. g Existing large solid units are expected to determine compliance through stack testing and not fuel analysis
- h Units not equipped with PM CPMS wil perform stack testing for PM.
- i Annual testing is based on the average number of existing units.
  j Only applies to large solid fuel boilers, because solid fuel boilers may fire a mix of non-homogeneous fuels. Assumed all solid fuel units would perform a repeat stack test.
- k Tune-ups are required as work practice standards in lieu of dioxin/furan testing. While the rule provides flexibility to conduct less frequent tune-ups for large units that have a continuous oxygen trim system that maintains an optimum air to fuel ratio, the number of units with this configuration is unknown and the ICR conservatively assumes all large units will conduct tune-ups annually.
- L PM CPMS is only required for coal boilers, biomass boilers which are not 100% biomass, and residual oil boilers which are >= 250 mmBtu/hr that were construction prior to June 4, 2010. This affects approximately 207 units.
- m Estimated number of units expected to require each type of parameter monitoring are consistent with the estimated number of units expected to install controls, as outlined in the memorandum: "Revised (November 2011) Methodology for Estimating Cost and Emissions Impacts for Industrial, Commercial, Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants Major Source." Small edits to the MACT floor dataset were made after the impacts analysis and ICR burden estimates were prepared. These edits are not reflected in the ICR or impacts analysis, but the changes are incorporated into the burden estimates for the final rule.
- n Includes enhanced recordkeeping provisions for demonstration of compliance with the alternative definition of "startup," (paragraph (2) of the definition) that document when useful thermal energy is provided, what fuels are used during startup, parametric monitoring data to verify relevant controls are engaged, and the time when PM controls are engaged. It is assumed that no one is using the compliance alternatives at this time.

Table 2.A. Annual Respondent Burden and Cost of Recordkeeping and Reporting Requirements for the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers - Year 0, Existing Large Liquid Fuel Units

			(		, 00	, arra motita	tional Bolicis			arge Liquiu i				
	(A) Respondent Hours per Occurrence (Technical	(B) Certified Energy Audit Cost per	(C) Stack Testing and Fuel Analysis Cost Per	(D) Other Non-Labor Costs Per	(E) Number of Occurrences Per Respondent	(F) Technical Hours per Respondent Per Year	(G) Number of Respondents	(H) Technical Hours per Year @ \$98.20 (F	(I) Clerical Hours per Year @ \$48.53 (H	(J) Management Hours per Year @ \$114.49 (H	(K) Total Labor	(L) Total Non- Labor Capital Costs Per Year	(M) Total Number of Responses per	Footnotes
Burden Item	hours)	Occurrence	Occurrence	Occurrence	Per Year	(A X E)	Per Year	X G) `	X 0.1)	X .05)	Costs Per Year	[(B+C+D)xExG]	Year (E X G)	Ř
1. Applications	na													
Surveys and Studies	na													
Reporting Requirements														
Read and Understand Rule Requirements	40	\$0	\$0	\$0	1	40	66	2,640	264	132	\$332,451	\$0	66	a
B. Required Activities														
Conduct Energy Audit														
a) Commerical	20	\$854	\$0	\$0	1	20	0	0	0	0	\$0	\$0	0	b, c, d
b) Industrial	20	\$18,292	\$0	\$0	1	20	0	0	0	0	\$0	\$0	0	b, c, d
Initial Stack Test and Report (for PM)	12	\$0	\$5,000	\$0	1	12	0	0	0	0	\$0	\$0	0	c,h
Initial Stack Test and Report (for Hg)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	С
Initial Stack Test and Report (for HCI)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	С
Initial Stack Test and Report (for CO)	12	\$0	\$7,000	\$0	1	12	0	0	0	0	\$0	\$0	0	С
Annual Stack Test and Report (for PM)	12	\$0	\$5,000	\$0	1	12	0	0	0	0	\$0	\$0	0	c,h,i
Annual Stack Test and Report (for Hg)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	C,i
Annual Stack Test and Report (for HCI)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	C,i
Annual Stack Test and Report (for CO)	12	\$0	\$7,000	\$0	1	12	0	0	0	0	\$0	\$0	0	C,İ
Repeat Stack Test and Report if Switch Fuels (for Hg and HCI)	24	\$0	\$16,000	\$0	1	24	0	0	0	0	\$0	\$0	0	c,f
11. Initial Fuel Analysis for Mercury and HCL Content	5	\$0	\$400	\$0	1	5	0	0	0	0	\$0	\$0	0	c,g
12. Monthly Fuel Analysis for Mercury and HCL Content	5	\$0	\$400	\$0	12	60	0	0	0	0	\$0	\$0	0	c,g
13. Annual Tune-up	12	\$0	\$2,875	\$0	1	12	0	0	0	0	\$0	\$0	0	c,L
14. Continuous Parameter Monitoring														n
Establish Site-specific monitoring plan (all)	40	\$0		\$0	1	40	0	0	0	0	\$0	\$0	0	С
Opacity														
a) initial	10	\$0	\$0	\$43,100	1	10	0	0	0	0	\$0	\$0	0	С
b) annual	10	\$0	\$0	\$14,700	1	10	0	0	0	0	\$0	\$0	0	С
PM (only sources greater than 250 mmBtu/hr)														
a) initial	10	\$0	\$0	\$158,000	1	10	0	0	0	0	\$0	\$0	0	c,m
b) annual	10	\$0	\$0	\$56,100	1	10	0	0	0	0	\$0	\$0	0	c,m
02														
a) initial	10	\$0	\$0	\$8,523	1	10	0	0	0	0	\$0	\$0	0	С
b) annual	10	\$0	\$0	\$1,436	1	10	0	0	0	0	\$0	\$0	0	С
Scrubber System Monitoring and Operation (for units with wet scrubbers)														
a) initial	10	\$0	\$0	\$24,300	1	10	0	0	0	0	\$0	\$0	0	С
b) annual	10	\$0	\$0	\$5,600	1	10	0	0	0	0	\$0	\$0	0	С
Bag Leak Detection System Operation (sources that have fabric filters)														
a) initial	10	\$0	\$0	\$25,500	1	10	0	0	0	0	\$0	\$0	0	С
b) annual	10	\$0	\$0	\$9,700	1	10	0	0	0	0	\$0	\$0	0	С
DIFF Monitor														
a) initial	10	\$0	\$0	\$43,500	1	10	0	0	0	0	\$0	\$0	0	С
b) annual	10	\$0	\$0	\$9,700	1	10	0	0	0	0	\$0	\$0	0	С
Carbon Injection Monitoring System (all sources that use ACI to control Hg)							_							
a) initial	10	\$0	\$0	\$115,000	1	10	0	0	0	0	\$0	\$0	0	С
b) annual	10	\$0	\$0	\$9,700	1	10	0	0	0	0	\$0	\$0	0	С
C. Create Information	na					1								+
D. Gather Information E. Report Preparation	na	l				1								+
Report Preparation     Initial Notification that Source is Subject	-	40	\$0	40	1	2	66	132	13	7	\$16,623	\$0	66	+_
	8	\$0 \$0	\$0 \$0	\$0 \$0	1	8	0		0	0		\$0 \$0	66	a
Notification of Compliance Status     Initial Report on results of Energy Audit	5	\$0	\$0	\$0	1	5	0	0	0	0	\$0 \$0	\$0	0	C
Semi-annual Compliance Report	20	\$0	\$0	\$0	2	40	0	0	0	0	\$0	\$0	0	a
5) Affirmative Defense	30	\$0	\$0	\$0	1	30	0	0	0	0	\$0	\$0	0	k
Reporting Subtotal	1 30	***	<del></del>	40	<u> </u>	30		2,772	277	139	\$349,074	\$0	66	+^
Recordkeeping Requirements						1		,			22.3,014			+
A. Read Instructions	Included in 3a										1			
B. Implement Activities	na													
C. Develop Record System	na													е
D. Record Information														
Records of Operating Parameter Values	20	\$0	\$0	\$0	1	20	0	0	0	0	\$0	\$0	0	С
Records of Startup, Shutdown, Malfunction	15	\$0	\$0	\$0	1	15	0	0	0	0	\$0	\$0	0	С
Records of Stack Tests	2	\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0	С
Records of Monitoring Device Calibrations	2	\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0	C
5) Records of All Compliance Reports Submitted	2	\$0	\$0	\$0	2	4	0	0	0	0	\$0	\$0	0	С
6) Records of Monthly Fuel Use	0.5	\$0	\$0	\$0	12	6	0	0	0	0	\$0	\$0	0	С
E. Personnel Training	40	\$0	\$0	\$0	1	40	0	0	0	0	\$0	\$0	0	j
F. Time for Audits	na													
Recordkeeping Subtotal								0	0	0	\$0	\$0	0	
Totals								2,772	277	139	\$349,074	\$0	66	
····								<del> </del>				<del></del>		

a Number of respondents based on number of existing large liquid fuel boilers which includes units greater than 10 mmBtu/hr.

b Cost includes taking an inventory of facility equipment including age, operating schedules, square feet of the facility and other details necessary for preparing for the audit pre-screening, attending the energy audit, and reviewing audit report from the audit professional. Based on the distribution of facilities with affected boilers or process heaters, 88% of facilities are in the industrial sector while the remaining 12% of facilities are in the commercial sector.

c Since existing units have three years after the publication date of the final rule to submit initial notification of compliance status, conduct compliance activities, or meet recordkeeping or reporting requirements, no burden is assumed in year 1.

e Assumes facility must already maintain records on boiler insurance and/or maintenance schedule. No new record system would be required.

f Only applies to large solid fuel boilers, because solid fuel boilers may fire a mix of non-homogeneous fuels. Assumed zero respondents for liquid and gas units. g Existing large liquid units are expected to determine compliance for Hg and HCI through fuel analysis not stack testing. h Units not equipped with PM CPMS wil perform stack testing for PM.

i No annual test and reporting burden is shown in year 1 as this is the same year as the initial test and report.

j For on-going training activities to keep personnel updated in order to implement compliance activities

m PM CPMS is required for coal boilers, biomass boilers which are not 100% biomass, and residual oil boilers which are >= 250 mmBtu/hr

n Estimated number of units expected to require each type of parameter monitoring are consistent with the estimated number of units expected to install controls, as outlined in the memorandum: "Revised (November 2011) Methodology for Estimating Cost and Emissions Impacts for Industrial, Commercial, Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants - Major Source." Small edits to the MACT floor dataset were made after the impacts analysis and ICR burden estimates are prepared. These edits are not reflected in the ICR or impacts analysis for this proposal, but the changes will be incorporated into the burden estimates for the final rule.

d Cost per occurrence for energy audit professionals including an phone screening to discuss the facility prior to a visit, a 2 to 4 hour site visit, and an additional 2-4 hours to prepare a follow-up report on recommendations and findings. These site visits are assumed to be conducted by certified energy professionals.

k Assumed 3 affirmative defense claims would be filed in the first three years after promulgation, one in each of the large subcategories (solid, liquid, gas) in year 3 of the burden estimates. If a source were to meet the notification, reporting, and recordkeeping requirements of affirmative defense, it would be approximately 30 hours in labor burden.

L Tune-ups are required as work practice standards in lieu of dioxin/furan testing.

Table 2.B.: Annual Respondent Burden and Cost - NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal) Existing Large Liquid Fuel Units

·				Existin	g Large Liqui	d Fuel Units	3							
	(A) Respondent Hours per Occurrence	(B) Certified Energy Audit	(C) Stack Testing and Fuel Analysis	(D) Other	(E) Number of Occurrences	(F) Technical Hours per Respondent	(G) Number of	(H) Technical Hours per Year @	(I) Clerical Hours per Year @	(J) Management Hours per Year @		(L) Total Non- Labor Capital	(M) Total Number of	otes
Burden Item	(Technical hours)	Cost per Occurrence	Cost Per Occurrence	Costs Per Occurrence	Respondent Per Year	Per Year (A X E)	Respondents Per Year	\$99.16 (F X G)	\$50.88 (H X 0.1)	\$127.43 (H X .05)	(K) Total Labor Costs Per Year	Costs Per Year [(B+C+D)xExG]	Responses per Year (E X G)	Footnotes
Applications	na	Occurrence	Occurrence	Occurrence	rei ieai	(A A E)	rei ieai	X G)	X 0.1)	A .03)	Costs Fel Teal	[(B+C+D)XEXG]	Teal (E A G)	+
Surveys and Studies	na													
Reporting Requirements     A. Familiarization with Rule Requirements	10	\$0	\$0	\$0	1	10	66	660	66	33	\$83,113	\$0	66	a
B. Required Activities	10	40	Ψ0	ΨΟ	-	10	- 00	000	- 00	- 55	403,113	40	- 00	+ "
Conduct Energy Audit														
a) Commerical b) Industrial	20 20	\$854 \$18.292	\$0 \$0	\$0 \$0	1	20 20	0	0	0	0	\$0 \$0	\$0 \$0	0	b, c, d b, c, d
Initial Stack Test and Report (for PM)	12	\$10,292	\$5,000	\$0	1	12	0	0	0	0	\$0	\$0	0	c,h
Initial Stack Test and Report (for Hg)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	C
Initial Stack Test and Report (for HCl)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	С
Initial Stack Test and Report (for CO)     Annual Stack Test and Report (for PM)	12 12	\$0 \$0	\$7,000 \$5,000	\$0 \$0	1	12 12	0 570	0 6.840	0 684	0 342	\$0 \$861.351	\$0 \$2.850.000	0	c,i c,h,j
7. Annual Stack Test and Report (for Hg)	12	\$0	\$8,000	\$0	1	12	0	0,840	0	0	\$001,351	\$2,850,000	0	C,II,J
Annual Stack Test and Report (for HCI)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	C,j
Annual Stack Test and Report (for CO)	12	\$0	\$7,000	\$0	1	12	570	6,840	684	342	\$861,351	\$3,990,000	0	c,j
<ol> <li>Repeat Stack Test and Report if Switch Fuels (for Hg and HCl)</li> </ol>	24	\$0	\$16,000	\$0	1	24	0	0	0	0	\$0	\$0	0	c,f
<ol> <li>Initial Fuel Analysis for Mercury and HCL Content</li> </ol>	5	\$0	\$400	\$0	1	5	0	0	0.0	0.0	\$0	\$0	0	c,g
Monthly Fuel Analysis for Mercury and HCL Content     Annual Tune-up	5 12	\$0 \$0	\$400 \$2,875	\$0 \$0	12 1	60 12	570 570	34,200 6,840	3,420 684	1,710 342	\$4,306,755 \$861,351	\$2,736,000 \$1,638,750	0	c,g c,L
14. Continuous Parameter Monitoring	12	\$0	\$2,875	ΦU	1	12	570	0,040	084	342	\$661,351	\$1,036,750	U	n C,L
Establish Site-specific monitoring plan (all)	40	\$0		\$0	1	40	0	0	0	0	\$0	\$0	0	С
Opacity														
a) initial b) annual	10 10	\$0 \$0	\$0 \$0	\$43,100 \$14,700	1	10 10	0 30	0 300	0 30	0.0 15.0	\$0 \$37,779	\$0 \$441,000	0	C
PM (only sources greater than 250 mmBtu/hr)	10	Φ0	Φ0	\$14,700	1	10	30	300	30	15.0	\$31,119	\$441,000	0	+
a) initial	10	\$0	\$0	\$158,000	1	10	0	0	0	0.0	\$0	\$0	0	c,m
b) annual	10	\$0	\$0	\$56,100	1	10	21	210	21	10.5	\$26,445	\$1,178,100	0	c,m
O2 a) initial	10	\$0	\$0	\$8,523	1	10	0	0	0	0	\$0	\$0	0	+
b) annual	10	\$0	\$0	\$1,436	1	10	316	3,160	316	158	\$397,934	\$453,776	0	c,n
Scrubber System Monitoring and Operation	10		40	42,100			010	0,100	010	100	4007,004	\$400,110		0,11
(for units with wet scrubbers)														
a) initial b) annual	10 10	\$0 \$0	\$0 \$0	\$24,300 \$5,600	1	10 10	0 271	0 2,710	0 271	0.0 135.5	\$0 \$341,266	\$0 \$1,517,600	0	c,n c,n
Bag Leak Detection System Operation (sources that have fabric filters)	10	- 50	φυ	\$5,000	1	10	2/1	2,710	211	135.5	\$341,200	\$1,517,000	0	C,11
a) initial	10	\$0	\$0	\$25,500	1	10	0	0	0	0.0	\$0	\$0	0	c,n
b) annual	10	\$0	\$0	\$9,700	1	10	262	2,620	262	131.0	\$329,933	\$2,541,400	0	c,n
DIFF Monitor		\$0	\$0	\$43.500	_		0	_		0	\$0	\$0		$\perp$
a) initial b) annual	10 10	\$0	\$0 \$0	\$43,500	1	10 10	28	0 280	0 28	14	\$0 \$35,260	\$271.600	0	c,n
Carbon Injection Monitoring System	10	ΨΟ	40	ψ3,700	-	10	20	200	20	14	455,200	Ψ2/1,000	Ů	0,11
(all sources that use ACI to control Hg)														
a) initial b) annual	10 10	\$0 \$0	\$0 \$0	\$115,000 \$9,700	1	10 10	0 8	0 80	0	0	\$0 \$10.074	\$0 \$77.600	0	c,n
C. Create Information	na na	\$0	<b>\$</b> 0	\$9,700	1	10		80		4	\$10,074	\$77,000	U	c,n
D. Gather Information	na													-
E. Report Preparation														
Initial Notification that Source is Subject     Netification of Compliance Status	2	\$0	\$0	\$0	1	2	0	0	0	0.0	\$0	\$0	0	a
Notification of Compliance Status     Initial Report on results of Energy Audit	8 5	\$0 \$0	\$0 \$0	\$0 \$0	1	8 5	0	0	0.0	0.0	\$0 \$0	\$0 \$0	0	C
Semi-annual Compliance Report	20	\$0	\$0	\$0	2	40	66	2,640	264	132	\$332,451	\$0	132	C
Reporting Subtotal									77,487		\$8,485,062	\$17,695,826	132	
Recordkeeping Requirements     A. Familiarization with Rule Requirements	Included in 3a													$\sqcup$
A. Familiarization with Rule Requirements     B. Implement Activities	na na					-								+
C. Develop Record System	na													е
D. Record Information														
Records of Operating Parameter Values     Records of Clother Shutdown Molfrentian	20	\$0	\$0	\$0	1	20	570	11,400	1,140	570	\$1,435,585	\$0	0	С
Records of Startup, Shutdown, Malfunction     Records of Stack Tests	15 2	\$0 \$0	\$0 \$0	\$0 \$0	1	15 2	570 570	8,550 1,140	855 114	428 57	\$1,076,689 \$143.558	\$0 \$0	0	C,0
Records of Stack Tests     Records of Monitoring Device Calibrations	2	\$0	\$0	\$0	1	2	570	1,140	114	57	\$143,558	\$0	0	C
5) Records of All Compliance Reports Submitted	2	\$0	\$0	\$0	2	4	570	2,280	228	114	\$287,117	\$0	0	С
6) Records of Monthly Fuel Use	0.5	\$0	\$0	\$0	12	6	570	3,420	342	171	\$430,675	\$0	0	С
E. Personnel Training F. Time for Audits	40 na	\$0	\$0	\$0	1	40	33	1,320	132	66	\$166,226	\$0	0	k
Recordkeeping Subtotal	IIa								33,638		\$3,683,409	\$0	0	+
Totals									111,125	i	\$12,168,471	\$17,695,826	132	$\Box$
												, ,		-

a The burden on existing sources to refamiliarize themselves with the rule requirements is assumed at 10 hours.

c It is assumed that the affected existing units have conducted an audit, developed an initial site-specific testing and monitoring plan, and submitted initial notifications following the compliance date of January 31, 2016. It is assumed that all existing units are submitting semi-annual reports and conducting the required recordkeeping.

Settine-initial reports and conducting time required reconscepting.

d Cost per occurrence for energy audit professionals including an phone screening to discuss the facility prior to a visit, a 2 to 4 hour site visit, and an additional 2-4 hours to prepare a follow-up report on recommendations and findings. These site visits are assumed to be conducted by certified energy professionals.

e Assumes facility must already maintain records on boiler insurance and/or maintenance schedule. No new record system would be required.

f Only applies to large solid fuel boilers, because solid fuel boilers may fire a mix of non-homogeneous fuels. Assumed zero respondents for liquid and gas units.

g Existing large floid units are expected to determine compliance for Hg and HCI through fuel analysis not stack testing.

h Units not equipped with PM CPMS will perform stack testing for PM.

j Annual testing is based on the number of existing units in the three years following promulgation of the November 20, 2015 final rule. k For on-going training activities to keep personnel updated in order to implement compliance activities. Assumes half of respondents will conduct training each year.

L Tune-ups are required as work practice standards in lieu of dioxin/furan testing. While the rule provides flexibility to conduct less frequent tune-ups for large units that have a continuous oxygen trim system that maintains an optimum air to fuel ratio, the number of units with this configuration is unknown and the ICR conservatively assumes all large units will conduct tune-ups annually.

m PM CPMS is required for coal boilers, biomass boilers which are not 100% biomass, and residual oil boilers which are >= 250 mmBtu/hr

n Estimated number of units expected to require each type of parameter monitoring are consistent with the estimated number of units expected to install controls, as outlined in the memorandum: "Revised (November 2011) Methodology for Estimating Cost and Emissions Impacts for Industrial, Commercial, Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants – Major Source." Small edits to the MACT floor dataset were made after the impacts analysis and ICR burden estimates were prepared. These edits are not reflected in the ICR or impacts analysis, but the changes are incorporated into the burden estimates for the final rule.

impacts analysis, but the changes are incorporated into the burden estimates for the final rule.

on Includes enhanced recordkeeping provisions for demonstration of compliance with the alternative definition of "startup" (paragraph (2) of the definition) that document when useful thermal energy is provided, what fuels are used during startup, parametric monitoring data to verify relevant controls are engaged, and the time when PM controls are engaged. It is assumed that no one is using the compliance alternatives at this time.

Table 3.B.: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal) **Existing Large Gas Fuel Units** 

(J) Management Hours per Year @ \$127.43 (H X .05) (A) Responden Hours per Occurrence (Technical hours) (H) Technical Hours per Year @ \$99.16 (F X G) (I) Clerical Hours per Year @ \$50.88 (H X 0.1) (C) Stack Testing and Fuel Analysis Cost Per Occurrence (F) Technica Hours per Respondent Per Year (A X E) (B) Certified Energy Audit Cost per Occurrence (D) Other Non-Labor Costs Per Occurrence (I ) Total Non-(M) Total Per ndent (G) Number of Respondents Per Year Labor Capital Costs Per Year [(B+C+D)xExG Number of Responses per Year (E X G) (K) Total Labor Costs Per Year Applications
 Surveys and Studies Reporting Requirements
 A. Familiarization with Rule Requirements \$0 \$0 \$0 10 669 6,690 669 335 \$842,462 \$0 а A. Familiarization with
 B. Required Activities Conduct Energy Audit
 a) Commerical b, c, d b) Industrial
2. Initial Stack Test and Report (for PM) \$18,292 b, c, d \$0 \$5,000 c,j,k Initial Stack Test and Report (for Hg)
 Initial Stack Test and Report (for HCl)
 Initial Stack Test and Report (for CO)
 Annual Stack Test and Report (for PM) \$8,000 \$7,000 0.0 46.8 \$117,869 \$390,000 \$5,000 936 Annual Stack Test and Report (for Hg)
 Annual Stack Test and Report (for HCl) \$8,000 0.0 \$0 \$0 0.0 Annual Stack Test and Report (for CO) 12 \$0 \$7,000 \$0 936 93.6 46.8 \$117.869 \$546,000 Annual Stack Test and Report (for CO)
 Repeat Stack Test and Report if Switch Fuels (for Hg and HCI)
 Initial Fuel Analysis for Mercury and HCL Conte
 Monthly Fuel Analysis for Mercury and HCL Cor
 Continuous Parameter Monitoring
 Establish Site-specific monitoring plan (all)
 Onscirul \$0 \$0 \$374,400 c.f \$16,000 \$0 \$0 \$0 \$0 \$400 5 60 4.680 234 468 c,g c,g \$589 345 40 \$0 \$0 40 \$0 \$0 Opacity
a) initial
b) annual
PM (only sources greater than 250 mmBtu/hr)
a) initial
b) annual 10 10 10 \$0 \$0 \$0 \$0 \$43,100 \$14,700 \$0 \$0 c,h c,h C,0 \$112,008 Scrubber System Monitoring and Operation (for units with wet scrubbers) a) initial b) annual 10 10 \$0 \$0 \$24,300 \$5,600 10 10 0.0 3.0 \$0 \$7,556 \$0 \$33,600 Bag Leak Detection System Operation
(sources that have fabric filters)
a) initial
b) annual
14. Annual Tune-up
15. Mercury Fuel Spec Analysis
C. Create Information
D. Gather Information
E. Report Preparation
1) Initial Notification that Source is Subject
2) Notification of Compliance Status
3) Initial Report on results of Energy Audit
4) Annual Compliance Report
5) Semi-annual Compliance Report
6) Notification of Mercative Fuel Use 60 C,0 \$0 \$2,875 \$200 \$9,700 \$0 \$0 \$0 \$8,663,377 \$2,924,060 \$0 \$16,482,375 \$928,800 5,733 387 68,796 23,220 6,879.6 2,322 3,439.8 1,161 a c 0.0 \$0 \$1,662,256 \$45,334 13,200 360 1,320 Semi-annual Compliance Report
 Notification of Alternative Fuel Use 213.0 4,260 c,m \$536,455 **\$15,604,808** \$18,867,183 Recordkeeping Requirements
A. Familiarization with Rule Requirements
B. Implement Activities
C. Develop Record System Included in 3a na na е D. Record Information Records of Operating Parameter Values
 Records of Startup, Shutdown, Malfunction
 Records of Startup, Shutdown, Malfunction
 Records of Stack Tests
 Records of Monitoring Device Calibrations
 Records of All Annual Compliance Reports Submitted 1,560 1,170 156 156 1,320 156 117 15.6 15.6 132.0 \$196,448 \$147,336 \$19,645 20 15 с,р 78 660 7.8 66.0 \$19,645 \$166,226 6) Records of All Semi-Annual Compliance Reports ubmitted ecords of Monthly Fuel Use Records of Annual Tune-up
 Personnel Training 0.25 40 0.25 40 5,733 335 1,433 13,400 143.3 1,340 71.7 670 n F. Time for Audits na 22,654 \$2,480,697 \$0 Recordkeeping Subtotal Totals 165.160 \$18,085,505 \$18.867.183 1 530

b Cost includes taking an inventory of facility equipment including age, operating schedules, square feet of the facility and other details necessary for preparing for the audit pre-screening, attending the energy audit, and reviewing audit report from the audit professional. Based on the distribution of facilities with affected boilers or process heaters, 87.4% of facilities are in the industrial sector while the remaining 12.6% of facilities are in the commercial sector.

- c It is assumed that the affected existing units have conducted an audit, developed an initial site-specific testing and monitoring plan, and submitted initial notifications following the compliance date of January 31, 2016. It is assumed that all existing units are submitting semi-annual reports and conducting the required recordkeeping.
- d Cost per occurrence for energy audit professionals including an phone screening to discuss the facility prior to a visit, a 2 to 4 hour site visit, and an additional 2-4 hours to prepare a follow-up report on recommendations and findings. These site visits are assumed to be conducted by certified energy professionals.
- e Assumes facility must already maintain records on boiler insurance and/or maintenance schedule. No new record system would be required.
- f Only applies to large solid fuel boilers, because solid fuel boilers may fire a mix of non-homogeneous fuels. Assumed zero respondents for liquid and gas units.
- g Existing large gas 2 units are expected to determine compliance through stack testing.
- b Case units are expected to observable companies amongs state againgt to Sas units are expent from PM CMPS and opacity monitoring. Number based on units which reported firing fuels other than natural or refinery gas. The units firing other process gases other than natural gas, refinery gases or other on-spec gas 1 fuels have limits for PM, HCI, Hg, and CO and are subject to testing and monitoring requirements for each pollutant.
- k The recordkeeping and reporting requirements for natural gas fired units is to conduct an annual tune-up and document that the tune-up was completed. The documentation does not need to be submitted as a report unless requested by the Administrator. While the rule provides flexibility to conduct less frequent tune-ups for large units that have a continuous oxygent time system that maintains an optimum air to let ratio, the number of units with this configuration is unknown and the ICR conservabley assumes all large units will conduct tune-ups annually.

  L Orly lacilities with process gas (gas 2 units) subject to numerical emission limits are expected to be required to submit reports. Natural gas and refinery gas units are required to submit reports annually.
- m Number based on 17.8% of the large gas 1 units using liquid instead of gas at some point.

  n For on-going training activities to keep personnel updated in order to implement compliance activities. Assumes half of respondents will conduct training each year.
- o Estimated number of units expected to require each type of parameter monitoring are consistent with the estimated number of units expected to install controls, as outlined in the memorandum: "Revised (November 2011) Methodology for Estimating Cost and Emissions Impacts for Industrial, Commercial, Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants Major Source." Small edits to the MACT floor dataset were made after the impacts analysis and ICR burden estimates were prepared. These edits are not reflected in the ICR or impacts analysis, but the Changes are incorporated into the burden estimates for the final rule.
- p Includes enhanced recordkeeping provisions for demonstration of compliance with the alternative definition of "startup" (paragraph (2) of the definition) that document when useful thermal energy is provided, what fuels are used during startup, parametric monitoring data to verify relevant controls are engaged, and the time when PM controls are engaged. It is assumed that no one is using the compliance alternatives at this time.

a The burden on existing sources to refamiliarize themselves with the rule requirements is assumed at 10 hours.

Table 4.A. Annual Respondent Burden and Cost of Recordkeeping and Reporting Requirements for the National Emission Standards

for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers - Year 0, New Large Solid Fuel Units

B. Penger Accidences		i iluzuluous r	tii i oiiataitt	(NEOTIAL)	i iliaastiia	i, Commerciai	, una monta	lional Boner	J - I Cui O,	ITCIV Laig	J Gona i aci c	Jiilo			_
Lappications   Name		Respondent Hours per Occurrence (Technical	Energy Audit Cost per	Testing and Fuel Analysis Cost Per	Non-Labor Costs Per	Occurrences Per Respondent	Hours per Respondent Per Year	Respondents	Technical Hours per Year @ \$98.20 (F X	Clerical Hours per Year @ \$48.53 (H	Management Hours per Year @ \$114.49 (H	(K) Total Labor	Lábor Capital Costs Per Year	Number of Responses per Year (E	ootnotes
2			Occurrence	Occurrence	Occurrence	Per Year	(A X E)	Per Year	G)	X 0.1)	X .05)	Costs Per Year	[(B+C+D)xExG]	X G)	й
Reporting Repeatements	1. Applications	na													
A. Fland and Understand River Repartmenters	Surveys and Studies	na													
A. Fland and Understand River Repartmenters	Reporting Requirements														
B. Respert Anchors		40	\$0	\$0	\$0	1	40	4	160	16	8	\$20.149	\$0	0	а
1   Initial Stack Test and Report for PM    12   90   \$5,000   60   1   12   26   312   31   16   \$99,390   \$32,000   0   0   0   0   1   12   10   10											-	, .			
2. Binds Sack Test and Report for Hy)  3. Binds Sack Test and Report for Hy)  4. Binds Sack Test		12	40	\$E 000	40	1	12	26	212	21	16	\$20,200	\$120,000	0	-
3. Inval Stack Test and Peppor (PV CC)   12   50   \$8,000   50   1   12   26   312   31   16   \$30,000   \$200,000   0   a   4   Intel Stack Test and Peppor (PV CC)   12   50   \$7,000   50   1   12   26   212   31   16   \$30,000   200,000   0   a   a   a   a   a   a   a   a															
4. Initial Stack, Fee and Report (or CO) 12 50 \$7,000 \$30 1 12 2 26 312 31 16 \$83,200 \$112,000 0 0 1															
S. Annual Stant Test and Report for High   12   50   \$5,000   \$60   \$1   12   \$0   \$0   \$0   \$0   \$50   \$0   \$0   \$															
6. Annual Stanz Feet and Report (or Hg)															
7. Annual Stack Test and Report (Ori HC)   12   30   \$5,000   50   1   12   0   0   0   0   50   50   0   a   0   50   5															a
8. Annual Stack Test and Report (Ex CO) 12	Annual Stack Test and Report (for Hg)					1		0	0	0	0			0	a
9. Report Stack Feet and Report E Statech Fuets   24   50   \$15,000   \$0   \$1   \$24   \$26   \$624   \$62   \$31   \$77,579   \$416,000   \$0   \$0   \$10	Annual Stack Test and Report (for HCI)					1		0	0	0	0			0	a
Che Hg and HCD	Annual Stack Test and Report (for CO)	12	\$0	\$7,000	\$0	1	12	0	0	0	0	\$0	\$0	0	а
Che Hg and HCD															
10. Initial Fuel Analysis for Mercury and HCL Content   5   30   \$400   30   1   5   0   0   0   0   30   30   0   0   at		24	\$0	\$16,000	\$0	1 1	24	26	624	62	31	\$78.579	\$416,000	0	a,d
11. Monthly Fuel Analysis for Mercury and HC Content   5   50   \$400   12   60   0   0   0   50   50   50   0   0   42   12   13   11   16   \$80,200   \$37,470   0   0   4   12   12   13   11   10   10   10   10   10   10															a,e
12. Annual Tune-up									-						
13. Continuous Parameter Monitoring															
Establish Side-spetic monitoring plain (all)   40   30   90   1   40   4   100   16   8   \$20,149   30   0   a		12	\$0	\$2,875	\$0	1	12	26	312	31	16	\$39,290	\$74,750	0	
Chacky   A pintal   10   50   80   \$44,100   1   10   26   260   26   13   \$22,741   \$1,120,000   0   a   b) arrural   10   50   80   \$14,700   1   10   26   260   26   13   \$22,741   \$382,200   0   a   a   b) arrural   10   50   80   \$14,700   1   10   26   260   26   13   \$22,741   \$382,200   0   a   a   b) arrural   10   50   \$0   \$51,5500   1   10   0   0   0   0   0   \$0   \$														ļ	
a) minal		40	\$0		\$0	1	40	4	160	16	8	\$20,149	\$0	0	a
Diamusi	Opacity														
PM (only sources greater than 250 mmBlu/hy   1	a) initial	10	\$0	\$0	\$43,100	1	10	26	260	26	13	\$32,741	\$1,120,600	0	а
a) initial   10   80   80   \$158,000   1   10   0   0   0   0   80   \$50   0   a.	b) annual	10	\$0	\$0	\$14,700	1	10	26	260	26	13	\$32,741	\$382,200	0	a
a) initial   10   80   80   \$158,000   1   10   0   0   0   0   80   \$50   0   a.					. ,							,	,		
Digital   10   \$0   \$0   \$0   \$0   \$0   \$0   \$0		10	\$0	\$0	\$158,000	1	10	0	0	0	0	0.2	\$0	0	ai
02   a) initial   10   80   85,823   1   10   26   26   26   13   832,741   \$221,598   0   a   B) annual   10   \$0   \$0   \$5   \$1,436   1   10   26   260   26   13   \$32,741   \$221,598   0   a   B) annual   10   \$0   \$0   \$0   \$1,436   1   10   26   260   26   13   \$32,741   \$221,598   0   a   B) annual   10   \$0   \$0   \$0   \$50   \$50   \$0   0   a   B) annual   10   \$0   \$0   \$0   \$0   \$0   \$0   \$0															
a) Initial   10   50   50   58,523   1   10   26   260   26   13   \$32,741   \$221,598   0   a		10	ΦU	Φ0	Φ30,100	1	10	U	- 0	U	0	Φ0	Φ0	U	d,I
Scrubber System Monitoring and Operation (for units with wet scrubbers)   Strate System Monitoring and Operation (for units with wet scrubbers)   Strate System Monitoring and Operation (for units with wet scrubbers)   Strate System Operation (sources that lase betection System Operation (sources that lase Act to control Hg)   Strate System (see System Operation (see System Operation Operation Operation System (see System Operation Operation System Operation Operation System Operation Operation System (see System Operation Operation Operation System Operation O															
Scrubber System Monitoring and Operation (for units wift wet sortions)															
(for units with vest scrubbers) a) initial 10	b) annual	10	\$0	\$0	\$1,436	1	10	26	260	26	13	\$32,741	\$37,336	0	a
a jnitial   10   80   80   824/3400   1   10   0   0   0   0   80   80	Scrubber System Monitoring and Operation														
Digramma   10   50   \$50   \$5,600   1   10   0   0   0   0   0   0   0	(for units with wet scrubbers)														
Digital   Digi	a) initial	10	\$0	\$0	\$24.300	1	10	0	0	0	0	\$0	\$0	0	а
Bag Leak Detection System Operation (sources that have faint filters)		10	\$0	\$0		1	10	0	0	0	0	\$0	\$0	0	a
Sources that have fabric filters)	,				10,000			-			-	***	**		-
A   Initial   10   \$0   \$0   \$0   \$25,500   1   10   26   260   26   13   \$32,741   \$658,000   0   a   Earth of the property	(courses that have fabric filters)														
Diannual   10   \$0   \$0   \$0   \$9,000   1   10   26   260   26   13   \$32,741   \$252,200   0   a		10	¢ο	¢0	#2E E00	1	10	26	260	26	12	<b>#22.741</b>	#662 000	0	
Carbon Injection Monitoring System (all sources that use ACI to control Hg)   10   80   80   \$115,000   1   10   0   0   0   0   0   0   0															
(all sources that use ACI to Control Hg) a) initial a 10 \$0 \$0 \$0 \$115,000 1 1 10 0 0 0 0 0 \$0 \$0 \$0 0 0 a b) annual  C. Create Information na D. Galther Information na  B. Report Preparation 1) initial Notification that Source is Subject 2 \$0 \$0 \$0 \$0 \$0 1 2 4 8 1 0 \$1,007 \$0 4 b 2 2) Notification of Compliance Status 8 \$0 \$0 \$0 \$0 \$0 1 8 4 \$0 \$2 \$4 \$0 \$0 1 8 5 \$20,149 \$0 \$0 8 \$0 \$0 \$0 1 8 8 \$20,149 \$0 8 \$0 \$0 1 8 8 \$20,149 \$0 8 \$0 1 8 8 \$0 \$0 \$0 1 8 8 \$20,149 \$0 1 8 8 \$20,149 \$0 1 8 8 \$0 1 8 8 \$0 \$0 1 8 8 \$0 \$0 1 8 8 \$0 \$0 1 8 8 \$0 1 8 8 \$0 \$0 1 8 8 \$0		10	\$0	\$0	\$9,700	1	10	26	260	26	13	\$32,741	\$252,200	0	a
a   initial   10   \$0   \$0   \$115,000   1   10   0   0   0   0   0   \$0   \$	Carbon Injection Monitoring System														
D) annual   10   \$0   \$0   \$0   \$0   \$0   \$0   \$0	(all sources that use ACI to control Hg)														
C. Create Information	a) initial	10	\$0	\$0	\$115,000	1	10	0	0	0	0	\$0	\$0	0	a
C. Create Information	b) annual	10	\$0	\$0	\$9,700	1	10	0	0	0	0	\$0	\$0	0	а
D. Gather Information   na					,										
E. Report Preparation  1) Initial Notification that Source is Subject  2 \$0 \$0 \$0 \$1 1 2 4 8 8 1 0 \$1,000 \$0 4 b 2 9,000 \$0 1 8 8 4 32 3 2 \$4,030 \$0 4 b 2 9,000 \$0 9,000 \$0 1 8 8 4 32 3 2 \$4,030 \$0 4 b 2 9,000 \$0 9,000									1					1	
1) Initial Notification that Source is Subject 2 \$0 \$0 \$0 \$0 \$1 2 4 8 8 1 0 \$1,007 \$0 4 b 2 2) Notification of Compliance Status 8 \$0 \$0 \$0 \$0 \$0 1 8 8 4 32 3 2 \$4,030 \$0 \$0 4 b 2 3) Semi-annual Compliance Report 20 \$0 \$0 \$0 \$0 2 40 4 160 16 8 \$20,149 \$0 8 8 b 4 4) Affirmative Defense Report 30 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0									1					t	
2) Notification of Compliance Status		2	¢n	¢n.	¢0	1	2	1	,	1	0	\$1.007	¢n	4	h
3) Semi-annual Compliance Report 20 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		_								_					
A) Affirmative Defense   30   \$0   \$0   \$0   \$0   \$0   \$0   \$0										-					
Reporting Subtotal															
A. Read instructions		30	\$0	\$0	\$0	1	30	0							h
A. Read Instructions									4,264	426	213	\$536,959	\$3,895,684	16	
B. Implement Activities	Recordkeeping Requirements								1					1	
B. Implement Activities	A. Read Instructions	Included in 3a													
C. Develop Record System   na	B. Implement Activities								1						
D. Record Information  1) Records of Operating Parameter Values 20 \$0 \$0 \$0 \$0 1 20 26 520 52 26 \$65,483 \$0 0 a 2 2) Records of Startup, Shutdown, Malfunction 15 \$0 \$0 \$0 1 15 26 390 39 20 \$49,112 \$0 0 a 3 3) Records of Startup, Shutdown, Malfunction 15 \$0 \$0 \$0 1 15 26 390 39 20 \$49,112 \$0 0 a 3 4 4 26 52 5 5 3 \$6,548 \$0 0 a 4 4 4 4 26 52 5 5 3 \$6,548 \$0 0 a 4 4 4 26 52 5 5 3 \$6,548 \$0 0 a 4 4 26 52 5 5 3 \$6,548 \$0 0 a 4 5 5 Records of All Compliance Reports Submitted 2 \$0 \$0 \$0 \$0 \$0 2 4 26 104 10 5 \$13,097 \$0 0 a 6 6 10 5 80 50 50 50 50 50 50 50 50 50 50 50 50 50														1	С
1) Records of Operating Parameter Values 20 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0							<b> </b>	<b> </b>	t					t	
2) Records of Startup, Shutdown, Malfunction 15 \$0 \$0 \$0 \$1 15 26 390 39 20 \$49,112 \$0 0 a 3 9 Records of Startup, Shutdown, Malfunction 15 \$0 \$0 \$0 \$1 15 26 390 39 20 \$49,112 \$0 0 a 3 9 Records of Startup, Shutdown, Malfunction 15 \$0 \$0 \$0 \$0 \$0 \$1 2 26 52 5 3 \$6,548 \$0 0 a 4 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0		20	40	60	40	1	20	26	E20	E2	26	PCE 400	60	-	-
3) Records of Stack Tests 2 \$0 \$0 \$0 \$1 2 26 52 5 3 \$6,548 \$0 0 a 4 Records of Monitoring Device Calibrations 2 \$0 \$0 \$0 \$0 1 2 26 52 5 3 \$6,548 \$0 0 a 5 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9															
4) Records of Monitoring Device Calibrations       2       \$0       \$0       \$0       \$1       2       26       52       5       3       \$6,548       \$0       0       a         5) Records of All Compliance Reports Submitted       2       \$0       \$0       \$0       \$2       4       26       104       10       5       \$13,097       \$0       0       a         6) Records of Monithly Fuel Use       0.5       \$0       \$0       \$0       12       6       26       104       10       5       \$13,097       \$0       0       a         6. Personnel Training       40       \$0       \$0       \$0       \$0       1       40       4       160       16       8       \$20,149       \$0       0       o       f         F. Time for Audits       na       8       8       8       8       0       0       1       4       4       143       72       \$180,581       \$0       0       I         Recordscepting Subtotal       1,434       143       72       \$180,581       \$0       0       I															
5) Records of All Compliance Reports Submitted         2         \$0         \$0         \$2         4         26         104         10         5         \$13,097         \$0         0         a         6) Records of Monthly Fuel Use         0.5         \$0         \$0         \$0         12         6         26         156         16         8         \$19,645         \$0         0         a,6           E. Personnel Training         40         \$0         \$0         \$0         \$1         40         4         160         16         8         \$20,149         \$0         0         f           F. Time for Audits         na         8         1,434         143         72         \$180,581         \$0						1									а
6) Records of Monthly Fuel Use 0.5 \$0 \$0 \$0 \$12 6 26 156 16 8 \$19,645 \$0 0 a,6 E. Personnel Training 40 \$0 \$0 \$0 \$1 40 4 160 16 8 \$20,149 \$0 0 f F. Time for Audits na Recordkeeping Subtotal 1,434 143 72 \$180,581 \$0		2	\$0	\$0	\$0	1	2	26	52	5	3	\$6,548	\$0	0	а
6) Records of Monthly Fuel Use 0.5 \$0 \$0 \$0 \$12 6 26 156 16 8 \$19,645 \$0 0 a,6 E. Personnel Training 40 \$0 \$0 \$0 \$1 40 4 160 16 8 \$20,149 \$0 0 f F. Time for Audits na Recordkeeping Subtotal 1,434 143 72 \$180,581 \$0	5) Records of All Compliance Reports Submitted	2	\$0	\$0	\$0	2	4	26	104	10	5	\$13,097	\$0	0	а
E. Personnel Training 40 \$0 \$0 \$0 \$1 40 4 160 16 8 \$20,149 \$0 0 f F. Time for Audits na 1,434 143 72 \$180,581 \$0															a,g
F. Time for Audits         na         1,434         143         72         \$180,581         \$0															f
Recordkeeping Subtotal         1,434         143         72         \$180,581         \$0			Ψ0	40		<del>-</del>			1 200			ΨL0,1-10	+	<u> </u>	<del>-</del>
		πα						-	1 424	1.42	72	\$100 E01	60	<b>+</b>	
Totals             5,698   570   285   \$717,541   \$3,895,684   16									_					<del> </del>	$\vdash$
	Totals								5,698	570	285	\$717,541	\$3,895,684	16	

a In order to calculate a per year estimate of the number of boilers and facilities required to meet these rule requirements, the number of projected boilers and facilities is each divided by 3.

j Estimated number of units expected to require each type of parameter monitoring are consistent with the estimated number of units expected to install controls, as outlined in the memorandum: "Revised (November 2011) Methodology for Estimating Cost and Emissions Impacts for Industrial, Commercial, Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants – Major Source." Small edits to the MACT floor dataset were made after the impacts analysis and ICR burden estimates are prepared. These edits are not reflected in the ICR or impacts analysis for this proposal, but the changes will be incorporated into the burden estimates for the final rule.

A source to decide the perfect extends of the fundamental of the first year a boiler is applicable to rule.

c Assumes facility must already maintain records on boiler insurance and/or maintenance schedule. No new record system would be required.

d Only applies to large solid fuel boilers, because solid fuel boilers may fire a mix of non-homogeneous fuels. Assumed all solid fuel units would perform a repeat stack test. e Existing large solid units are expected to determine compliance through stack testing and not fuel analysis for on-going training activities to keep personnel updated in order to implement compliance activities.

g Tune-ups are required as work practice standards in lieu of dioxin/furan testing.

h Assumed no affirmative defense claims would be filed for new sources in the first three years after promulgation. If a source were to meet the notification, reporting, and recordkeeping requirements of affirmative defense, it would be approximately 30 hours in labor burden. i PM CPMS is required for coal boilers, biomass boilers which are not 100% biomass, and residual oil boilers which are >= 250 mmBtu/hr. It was assumed all new solid fuel boilers are firing 100% biomass.

Table 4.B.: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal)

**New Large Solid Fuel Units** (H) Technical (I) Clerical Respondent Hours per Occurrence (Technical hours) (E) Number of Occurrences Per Respondent Per Year Management Hours per Year @ \$127.43 (H X .05) (C) Stack (F) Technical (D) Other Non-Labor Costs Per Occurrence Testing and Fuel Analysis Cost Per Occurrence Hours per Respondent Per Year (A X E) Hours per Year @ \$99.16 (F X G) Hours per Year @ \$50.88 (H X 0.1) (L) Total Non-Labor Capital Costs Per Year [(B+C+D)xExG] (M) Total Number of Responses per Year (E X G) (G) Number of Respondents Per Year Energy Audit Cost per Occurrence Applications
 Surveys and Studies
 Reporting Requirements na 120 \$15,111 Read and Understand Rule Requirements 40 \$0 \$0 \$0 40 12 6 \$0 а Read and Understand Rule Requirements
 Required Activities
 I. Initial Stack Test and Report (for PM)
 I. Initial Stack Test and Report (for Hg)
 I. Initial Stack Test and Report (for Hg)
 I. Initial Stack Test and Report (for CO)
 I. Initial Stack Test and Report (for CO)
 I. Initial Stack Test and Report (for PM)
 I. Amnual Stack Test and Report (for PM)
 I. Amnual Stack Test and Report (for PM)
 I. Amnual Stack Test and Report (for PM) 31.2 31.2 31.2 31.2 \$5,000 \$39,290 \$39,290 \$130,000 312 312 312 312 \$208,000 \$39,290 \$39,290 \$208,000 \$208,000 \$182,000 \$5,000 а 6. Annual Stack Test and Report (for Hg) \$8,000 \$0 \$0 0.0 \$0 \$0 а 7. Annual Stack Test and Report (for HCI) 8. Annual Stack Test and Report (for CO) a a 9. Repeat Stack Test and Report if Switch Fuels \$16,000 \$78,579 \$416,000 624 62.4 31.2 a,d (for Hg and HCI) Initial Fuel Analysis for Mercury and HCL Content a,e 11. Monthly Fuel Analysis for Mercury and HCL Content \$0 \$400 \$0 12 60 \$0 \$0 a,e Annual Tune-up
Continuous Parameter Monitoring
Establish Site-specific monitoring plan (all) \$0 \$2,875 \$0 26 31.2 \$39,290 \$74,750 a,g \$0 \$0 120 12 \$15,111 а Opacity a) initial 260 \$32,741 \$1,120,600 13 а b) annual \$0 \$0 \$14,700 10 а b) annual
PM (only sources greater than 250 mmBtu/hr)
a) initial
b) annual 10 \$0 \$0 \$0 \$158.000 10 0 \$0 \$0 a,h a,h 02 a) initial \$32,741 \$0 \$221,598 \$0 Scrubber System Monitoring and Operation (for units with wet scrubbers) \$24,300 \$5,600 a) initiai b) annual \$0 \$0 Bag Leak Detection System Operation (sources that have fabric filters) \$32,741 \$663,000 a) initial b) annual а \$9,700 а Carbon Injection Monitoring System (all sources that use ACI to control Hg) a) initial \$115,000 \$9,700 10 10 a a b) annual na D. Gather Information na E. Report Preparation Initial Notification that Source is Subject
 Notification of Compliance Status b b \$0 \$0 \$0 \$0 0.6 2.4 \$756 \$3,022 \$0 \$0 6 24 \$0 \$0 120 12 **3,85**7 \$15,111 \$422,364 ni-annual Compliance Report \$3,223,948 Reporting Subtotal Reporting Subtotal

A. Read And Understand Rule Requirements

A. Read And Understand Rule Requirements

B. Implement Activities

C. Develop Record System

D. Record Information

1) Records of Operating Parameter Value

2) Records of Startin, Shufdens, Malface Included in 3a na а 2) Records of Startup, Shutdown, Malfunction 15 \$0 \$0 \$0 15 26 390 39 20 \$49.112 \$0 a. i Records of Startup, Shutdown, Mainunction
 Records of Stack Tests
 Records of Monitoring Device Calibrations
 Records of All Compliance Reports Submittee
 Records of Monthly Fuel Use
 Response Training 52 52 \$6,548 \$6,548 \$0 \$0 a a a a,g \$13,097 \$19,645 \$15,111

F. Time for Audits

Recordkeeping Subtotal

Totals

na

1.603

5,460

\$175.544

\$597,909

S0

\$3,223,948

12

a in order to calculate a per year estimate of the number of boilers and facilities required to meet these rule requirements, the number of projected boilers and facilities is each divided by 3. b Assumed reporting activities would start the first year a boiler is applicable to rule. c Assumes facility must already maintain records on boiler insurance and/or maintenance schedule. No new record system would be required. d Only applies to large solid fuel boilers, because solid fuel boilers may fire a mix of non-homogeneous fuels. Assumed all solid fuel units would perform a repeat stack test.

e Existing psolid units are expected to determine compliance through stack testing and not fuel analysis

For on-joing training activities to keep personnel updated in order to implement compliance activities. Assumes all new respondents will conduct training,

g Tune-ups are required as work practice standards in lieu of dioxin/furant testing. While the rule provides flexibility to conduct less frequent tune-ups for large units that have a continuous oxygen trim system that maintains an optimum air to fuel ratio, the number of units with this configuration is unknown and the ICR conservatively assumes all large units will conduct tune-ups annually.

h PM CPMS is required for coal boilers, biomass boilers which are not 100% biomass, and residual oil boilers which are >= 250 mmBtu/hr. It was assumed all new solid fuel boilers are firing 100% biomass.

i Estimated number of units expected to require each type of parameter monitoring are consistent with the estimated number of units expected to install controls, as outlined in the memorandum: "Revised (November 2011) Methodology for Estimating Cost and Emissions Impacts for Industrial, Commercial, Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants – Major Source." Small edits to the MACT floor dataset were made after the impacts analysis and ICR burden estimates were prepared. These edits are not reflected in the ICR or impacts analysis, but the changes are incorporated into the burden estimates for the final rule.

i Includes enhanced recordkeeping provisions for demonstration of compliance with the alternative definition of "startup" (paragraph (2) of the definition) that document when useful thermal energy is provided, what fuels are used during startup parametric monitoring data to verify relevant controls are engaged, and the time when PM controls are engaged. It is assumed that no one is using the compliance alternatives at this time.

Table 5.B.: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, subpart DDDDD) (Renewal)

New Large Liquid Fuel Units

				New	Large Liquid	Fuel Units								
Burden Item	(A) Respondent Hours per Occurrence (Technical hours)	(B) Certified Energy Audit Cost per Occurrence	(C) Stack Testing and Fuel Analysis Cost Per Occurrence	(D) Other Non-Labor Costs Per Occurrence	(E) Number of Occurrences Per Respondent Per Year	(F) Technical Hours per Respondent Per Year (A X E)	(G) Number of Respondents Per Year	(H) Technical Hours per Year @ \$99.16 (F X G)	(I) Clerical Hours per Year @ \$50.88 (H X 0.1)	(J) Management Hours per Year @ \$127.43 (H X .05)	(K) Total Labor Costs Per Year	(L) Total Non- Labor Capital Costs Per Year [(B+C+D)xExG]	(M) Total Number of Responses per Year (E X G)	Footnotes
1. Applications	na	Occurrence	Occurrence	Occurrence	rei ieai	(A A L)	reiteai	7.0)	× 0.1)	A .03)	Costs Fel Teal	[(B+C+D)XEXG]	rear (L X G)	
Surveys and Studies	na													-
3. Reporting Requirements														
Read and Understand Rule Requirements	40	\$0	\$0	\$0	1	40	0	0	0	0	\$0	\$0	0	а
B. Required Activities														
Initial Stack Test and Report (for PM)	12	\$0	\$5,000	\$0	1	12	0	0	0	0	\$0	\$0	0	
Initial Stack Test and Report (for Hg)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	$\vdash$
Initial Stack Test and Report (for HCI)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	$\vdash$
Initial Stack Test and Report (for CO)     Annual Stack Test and Report (for PM)	12 12	\$0 \$0	\$7,000 \$5,000	\$0 \$0	1	12 12	0	0	0	0	\$0 \$0	\$0 \$0	0	$\vdash$
Annual Stack Test and Report (for PM)     Annual Stack Test and Report (for Hg)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0 \$0	0	-
7. Annual Stack Test and Report (for HCl)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	-
Annual Stack Test and Report (for CO)	12	\$0	\$7,000	\$0	1	12	Ö	0	0	Ö	\$0	\$0	0	-
Repeat Stack Test and Report if Switch Fuels     (for Hg and HCl)	24	\$0	\$16.000	\$0	1	24	0	0	0	0	\$0	\$0	0	
Initial Fuel Analysis for Mercury and HCL Content	5	\$0	\$400	\$0	1	5	0	0	0	Ö	\$0	\$0	0	-
Monthly Fuel Analysis for Mercury and HCL Content	5	\$0	\$400	\$0	12	60	Ö	0	0	Ö	\$0	\$0	0	$\neg$
12. Annual Tune-up	12	\$0	\$2,875	\$0	1	12	0	0	0	0	\$0	\$0	0	
13. Continuous Parameter Monitoring														
Establish Site-specific monitoring plan (all)	40	\$0		\$0	1	40	0	0	0	0	\$0	\$0	0	
Opacity	10	**	**	***		10					**	**	0	$\vdash$
a) initial	10	\$0 \$0	\$0 \$0	\$43,100 \$14,700	1	10 10	0	0	0	0	\$0 \$0	\$0 \$0	0	$\vdash$
b) annual PM (only sources greater than 250 mmBtu/hr)	10	\$0	\$0	\$14,700	1	10	U	0	0	0	\$0	\$0	U	-
a) initial	10	\$0	\$0	\$158,000	1	10	0	0	0	0	\$0	\$0	0	-
b) annual	10	\$0	\$0	\$56,100	1	10	0	0	0	ő	\$0	\$0	0	-
02	10	- 40	- 40	400,100		- 10	- ŭ					40	Ů	-
a) initial	10	\$0	\$0	\$8,523	1	10	0	0	0	0	\$0	\$0	0	
b) annual	10	\$0	\$0	\$1,436	1	10	0	0	0	0	\$0	\$0	0	
Scrubber System Monitoring and Operation (for units with wet scrubbers)														
a) initial	10	\$0	\$0	\$24,300	1	10	0	0	0	0	\$0	\$0	0	
b) annual	10	\$0	\$0	\$5,600	1	10	0	0	0	0	\$0	\$0	0	$\vdash$
Bag Leak Detection System Operation (sources that have fabric filters)	10	**	***	*05.500							**	**		
a) initial	10 10	\$0 \$0	\$0 \$0	\$25,500 \$9,700	1	10 10	0	0	0	0	\$0 \$0	\$0 \$0	0	$\vdash$
b) annual	10	\$0	\$0	\$9,700	1	10	U	0	0	0	\$0	\$0	U	$\vdash$
Carbon Injection Monitoring System (all sources that use ACI to control Hg)  a) initial	10	\$0	\$0	\$115,000	1	10	0	0	0	0	\$0	\$0	0	
b) annual	10	\$0	\$0	\$9,700	1	10	0	0	0	0	\$0	\$0	0	-
C. Create Information	na	Ψ0	ΨΟ	Ψ3,700		10		_ <u> </u>			ΨΟ	ΨΟ		-
D. Gather Information	na													$\Box$
E. Report Preparation														
Initial Notification that Source is Subject	2	\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0	
Notification of Compliance Status	8	\$0	\$0	\$0	1	8	0	0	0	0	\$0	\$0	0	ш
3) Semi-annual Compliance Report	20	\$0	\$0	\$0	2	40	0	0	0 <b>0</b>	0	\$0 <b>\$0</b>	\$0 <b>\$0</b>	0	$\vdash$
Reporting Subtotal 4. Recordkeeping Requirements									U	1	\$0	<b>\$</b> U	U	$\vdash$
A. Read and Understand Rule Requirements	Included in 3a									l	<del>                                     </del>			-
B. Implement Activities	na na													П
C. Develop Record System	na													П
D. Record Information														
Records of Operating Parameter Values	20	\$0	\$0	\$0	1	20	0	0	0	0	\$0	\$0	0	
Records of Startup, Shutdown, Malfunction	15	\$0	\$0	\$0	1	15	0	0	0	0	\$0	\$0	0	
Records of Stack Tests	2	\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0	$\square$
Records of Monitoring Device Calibrations	2	\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0	$\vdash$
5) Records of All Compliance Reports Submitted 6) Records of Monthly Fuel Use	2 0.5	\$0 \$0	\$0 \$0	\$0 \$0	2 12	6	0	0	0	0	\$0 \$0	\$0 \$0	0	$\vdash$
E. Personnel Training	40	\$0	\$0	\$0 \$0	12	40	0	0	0	0	\$0 \$0	\$0 \$0	0	$\vdash$
F. Time for Audits	na na	Ψυ	Ψυ	Ψυ	1		,	-		<del>                                     </del>	Ψυ	Ψ0	3	$\vdash$
Recordkeeping Subtotal									0		\$0	\$0	0	$\Box$
Totals									0		\$0	\$0	0	$\Box$
10000				l		1					. **			

a There are no new large liquid units expected to be constructed/reconstructed over the next 5 years

Table 6.A. Annual Respondent Burden and Cost of Recordkeeping and Reporting Requirements for the National Emission Standards

for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers - Year 0, New Large Gas Fuel Units

to	r Hazardous <i>F</i>	Air Pollutants	(NESHAP) to	or Industrial	, Commercial,	and Institu	tional Boilers	- Year 0,	New Larg	e Gas Fuel Ur	nits			
Burden Item	(A) Respondent Hours per Occurrence (Technical hours)	(B) Certified Energy Audit Cost per Occurrence	(C) Stack Testing and Fuel Analysis Cost Per Occurrence	(D) Other Non-Labor Costs Per Occurrence	(E) Number of Occurrences Per Respondent Per Year	(F) Technical Hours per Respondent Per Year (A X E)	(G) Number of Respondents Per Year	(H) Technical Hours per Year @ \$98.20 (F X G)	(I) Clerical Hours per Year @ \$48.53 (H X 0.1)	(J) Management Hours per Year @ \$114.49 (H X .05)	(K) Total Labor Costs Per Year	(L) Total Non- Labor Capital Costs Per Year [(B+C+D)xExG]	(M) Total Number of Responses per Year (E X G)	Footnotes
1. Applications	na													
Surveys and Studies	na													
Reporting Requirements														
A. Read and Understand Rule Requirements	40	\$0	\$0	\$0	1	40	34	1,360	136	68	\$171,263	\$0	0	a
B. Required Activities     1. Initial Stack Test and Report (for PM)	12	\$0	\$5.000	\$0	1	12	0	0	0	0	\$0	\$0	0	е
Initial Stack Test and Report (for Hg)  2. Initial Stack Test and Report (for Hg)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	e
Initial Stack Test and Report (for HCl)  3. Initial Stack Test and Report (for HCl)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	e
Initial Stack Test and Report (for CO)	12	\$0	\$7,000	\$0	1	12	0	0	0	0	\$0	\$0	0	e
Annual Stack Test and Report (for PM)	12	\$0	\$5,000	\$0	1	12	0	0	0	0	\$0	\$0	0	a
Annual Stack Test and Report (for Hg)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	a
Annual Stack Test and Report (for HCl)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	a
Annual Stack Test and Report (for CO)	12	\$0	\$7,000	\$0	1	12	0	0	0	0	\$0	\$0	0	a
<ol> <li>Repeat Stack Test and Report if Switch Fuels (for Hg and HCI)</li> </ol>	24	\$0	\$16,000	\$0	1	24	0	0	0	0	\$0	\$0	0	
12. Initial Fuel Analysis for Mercury and HCL Content	5	\$0	\$400	\$0	1	5	0	0	0	0	\$0	\$0	0	a,e a,f
Content	5	\$0	\$400	\$0	12	60	0	0	0	0	\$0	\$0	0	a,f
14. Continuous Parameter Monitoring														k
Establish Site-specific monitoring plan (all)	40	\$0		\$0	1	40	0	0	0	0	\$0	\$0	0	a
Opacity														
a) initial	10	\$0	\$0	\$43,100	1	10	0	0	0	0	\$0	\$0	0	a
b) annual	10	\$0	\$0	\$14,700	1	10	0	0	0	0	\$0	\$0	0	a
PM (only sources greater than 250 mmBtu/hr) a) initial	10	\$0	\$0	\$158,000	1	10	0	0	0	0	\$0	\$0	0	a
b) annual	10	\$0	\$0	\$56,100	1	10	0	0	0	0	\$0	\$0	0	a
O2	100	40	40	400,200		10	Ů				- 00	40	, i	_ u
a) initial	10	\$0	\$0	\$8,523	1	10	0	0	0	0	\$0	\$0	0	a
b) annual	10	\$0	\$0	\$1,436	1	10	0	0	0	0	\$0	\$0	0	a
Scrubber System Monitoring and Operation (for units with wet scrubbers)														
a) initial	10	\$0	\$0	\$24,300	1	10	0	0	0	0	\$0	\$0	0	a
b) annual	10	\$0	\$0	\$5,600	1	10	0	0	0	0	\$0	\$0	0	a
Bag Leak Detection System Operation (sources that have fabric filters)	10	\$0	\$0	405 500		10	0	0			\$0	\$0		
a) initial b) annual	10	\$0 \$0	\$0	\$25,500 \$9,700	1	10	0	0	0	0	\$0 \$0	\$0 \$0	0	a
15. Annual Tune-up	12	\$0	\$2,875	\$9,700	1	12	262	3,144	314	157	\$395,919	\$753,250	0	C
16. Mercury Fuel Spec Analysis	5	\$0	\$200	\$0	12	60	0	0	0	0	\$0	\$0	0	h
C. Create Information	na	40	<b>\$200</b>	- 40		- 55	Ů			- ĭ	- 00	40	- ĭ	
D. Gather Information	na													
E. Report Preparation														
Initial Notification that Source is Subject	2	\$0	\$0	\$0	1	2	34	68	7	3	\$8,563	\$0	34	a
Notification of Compliance Status     Annual Compliance Report	8 20	\$0 \$0	\$0	\$0	1	8 20	34 34	272 680	27	14	\$34,253 \$85.631	\$0	34 34	a
Annual Compliance Report     Semi-annual Compliance Report	20	\$0 \$0	\$0 \$0	\$0 \$0	2	40	0	080	68 0	34 0	\$85,631	\$0 \$0	0	a, e a, e
Semi-arriual Compilance Report     Notification of Alternative Fuel Use	5	\$0 \$0	\$0 \$0	\$0	1	5	0	0	0	0	\$0	\$0	0	a, e
6) Affirmative Defense	30	\$0	\$0	\$0	1	30	0	0	0	Ö	\$0	\$0	0	i i
Reporting Subtotal								5,524	552	276	\$695,629	\$753,250	102	Ľ
Recordkeeping Requirements														
A. Read Instructions	Included in 3a													
B. Implement Activities	na													
C. Develop Record System D. Record Information	na		1											d
Record information     Records of Operating Parameter Values	20	\$0	\$0	\$0	1	20	0	0	0	0	\$0	\$0	0	a
Records of Operating Parameter Values     Records of Startup, Shutdown, Malfunction	15	\$0	\$0	\$0	1	15	0	0	0	0	\$0	\$0	0	a
Records of Stack Tests	2	\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0	a
Records of Monitoring Device Calibrations	2	\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0	a
Submitted	2	\$0	\$0	\$0	2	4	34	136	14	7	\$17,126	\$0	0	a, e
Records of All Semi-Annual Compliance Reports     Submitted	2	\$0	\$0	\$0	2	4	0	0	0	0	\$0	\$0	0	a, e
7) Records of Monthly Fuel Use	0.5	\$0	\$0	\$0	12	6	262	1,572	157	79	\$197,960	\$0	0	a
8) Records of Annual Tune-up	0.25	\$0	\$0	\$0	1	0.25	262	66	7	3	\$8,248	\$0	262	С
E. Personnel Training	40	\$0	\$0	\$0	1	40	34	1,360	136	68	\$171,263	\$0	0	g
F. Time for Audits	na													
Recordkeeping Subtotal								3,134	313	157	\$394,597	\$0		
Totals								8,658	866	433	\$1,090,226	\$753,250	102	
	•							-						

a In order to calculate a per year estimate of the number of boilers and facilities required to meet these rule requirements, the number of projected boilers and facilities is each divided by 3. b A one-time requirement. c All large boilers require annual tune-ups.

d Assumes facility must already maintain records on boiler insurance and/or maintenance schedule as part of their operations. No new record system would be required.

e Only facilities with process gas (gas 2 units) subject to numerical emission limits are expected to be required to submit semi-annual compliance reports and conduct testing and monitoring (There will not be any new process gas units). Natural gas and refinery gas units are required to submit reports annually and conduct a tune-up.

1 Process gas units are expected to demonstrate compliance with a stack test instead of a fuel analysis.

g For on-going training activities to keep personnel updated in order to implement compliance activities.

Table 6.B.: Annual Respondent Burden and Cost - NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal) New Large Gas Fuel Units

				New	Large Gas Fu	el Units								
	(A)							(H)	(I)	(J)				
	Respondent		(C) Stack		(E) Number of	(F) Technical		Technical	Clerical	Management			(M) Total	<b> </b>
	Hours per Occurrence	(B) Certified Energy Audit	Testing and Fuel Analysis	(D) Other Non-Labor	Occurrences Per	Hours per Respondent	(G) Number of	Hours per Year @	Hours per Year @	Hours per Year @		(L) Total Non- Labor Capital	Number of Responses	je;
	(Technical	Cost per	Cost Per	Costs Per	Respondent	Per Year	Respondents	\$99.16 (F	\$50.88 (H	\$127.43 (H	(K) Total Labor	Costs Per Year	per Year (E	Footnotes
Burden Item	hours)	Occurrence	Occurrence	Occurrence	Per Year	(A X E)	Per Year	X G) `	X 0.1)	X .05)	Costs Per Year	[(B+C+D)xExG]	X G) `	Ē
1. Applications	na													
Surveys and Studies	na													
Reporting Requirements     A. Read and Understand Rule Requirements	40	\$0	\$0	\$0		40	20	1,320	132		\$166,226	\$0		
B. Required Activities	40	\$0	\$0	\$0	1	40	33	1,320	132	66	\$100,220	\$0	0	a
Required Activities     Initial Stack Test and Report (for PM)	12	\$0	\$5,000	\$0	1	12	0	0	0	0	\$0	\$0	0	е
Initial Stack Test and Report (for Hg)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	e
Initial Stack Test and Report (for HCl)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	e
Initial Stack Test and Report (for CO)	12	\$0	\$7,000	\$0	1	12	0	0	0	0	\$0	\$0	0	е
Annual Stack Test and Report (for PM)	12	\$0	\$5,000	\$0	1	12	0	0	0	0	\$0	\$0	0	a
Annual Stack Test and Report (for Hg)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	a
Annual Stack Test and Report (for HCI)	12	\$0	\$8,000	\$0	1	12	0	0	0	0	\$0	\$0	0	a
Annual Stack Test and Report (for CO)	12	\$0	\$7,000	\$0	1	12	0	0	0	0	\$0	\$0	0	a
11. Repeat Stack Test and Report if Switch Fuels		**	***	**										
(for Hg and HCI)	24 5	\$0	\$16,000 \$400	\$0 \$0	1	24	0	0	0	0	\$0 \$0	\$0 \$0	0	a,e
Initial Fuel Analysis for Mercury and HCL Content     Monthly Fuel Analysis for Mercury and HCL Content	5	\$0 \$0	\$400	\$0	12	5 60	0	0	0	0	\$0 \$0	\$0	0	a,f a,f
Montiny Fuel Analysis for Mercury and HCL Content     Continuous Parameter Monitoring	3	ΨU	φ-400	ΨU	14	00	, , , , , , , , , , , , , , , , , , ,	J	U		ΨU	ΨU	_ J	a,ı
Establish Site-specific monitoring plan (all)	40	\$0		\$0	1	40	0	0	0	0	\$0	\$0	0	a
Opacity					_		-			-			-	
a) initial	10	\$0	\$0	\$43,100	1	10	0	0	0	0	\$0	\$0	0	а
b) annual	10	\$0	\$0	\$14,700	1	10	0	0	0	0	\$0	\$0	0	a
PM (only sources greater than 250 mmBtu/hr)														
a) initial	10	\$0	\$0	\$158,000	1	10	0	0	0	0	\$0	\$0	0	a
b) annual	10	\$0	\$0	\$56,100	1	10	0	0	0	0	\$0	\$0	0	a
02	40	**	40	*0.500	_	40					**	40		
a) initial	10	\$0 \$0	\$0	\$8,523	1	10	0	0	0	0	\$0 \$0	\$0	0	a
b) annual	10	\$0	\$0	\$1,436	1	10	0	0	0	0	\$0	\$0	0	a
Scrubber System Monitoring and Operation (for units with wet scrubbers)														
a) initial	10	\$0	\$0	\$24.300	1	10	0	0	0	0	\$0	\$0	0	a
b) annual	10	\$0	\$0	\$5,600	1	10	0	0	0	0	\$0	\$0	0	a
Bag Leak Detection System Operation				,			-			-				
(sources that have fabric filters)														
a) initial	10	\$0	\$0	\$25,500	1	10	0	0	0	0	\$0	\$0	0	a
b) annual	10	\$0	\$0	\$9,700	1	10	0	0	0	0	\$0	\$0	0	a
15. Annual Tune-up	12	\$0	\$2,875	\$0	1	12	261	3,132	313	157	\$394,408	\$750,375	0	С
16. Mercury Fuel Spec Analysis C. Create Information	5 na	\$0	\$200	\$0	12	60	0	0	0	0	\$0	\$0	0	h
D. Gather Information	na													
E. Report Preparation	IId													
Initial Notification that Source is Subject	2	\$0	\$0	\$0	1	2	33	66	6.6	3.3	\$8,311	\$0	33	a
2) Notification of Compliance Status	8	\$0	\$0	\$0	1	8	33	264	26.4	13.2	\$33,245	\$0	33	a
3) Annual Compliance Report	20	\$0	\$0	\$0	1	20	33	660	66	33	\$83,113	\$0	33	a, e
4) Semi-annual Compliance Report	20	\$0	\$0	\$0	2	40	0	0	0	0	\$0	\$0	0	a, e
5) Notification of Alternative Fuel Use	5	\$0	\$0	\$0	1	5	0	0	0	0	\$0	\$0	0	i
Reporting Subtotal									6,258		\$685,303	\$750,375	99	
Recordkeeping Requirements     Read and Understand Pulls Requirements	Include 4 :- 0													$\square$
A. Read and Understand Rule Requirements     B. Implement Activities	Included in 3a													$\vdash$
B. Implement Activities C. Develop Record System	na na													d
D. Record Information	IIa.					<del>                                     </del>								L"
Records of Operating Parameter Values	20	\$0	\$0	\$0	1	20	0	0	0	0	\$0	\$0	0	а
Records of Operating Farameter values     Records of Startup, Shutdown, Malfunction	15	\$0	\$0	\$0	1	15	0	0	0	0	\$0	\$0	0	a
3) Records of Stack Tests	2	\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0	a
Records of Monitoring Device Calibrations	2	\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0	a
5) Records of All Annual Compliance Reports Submitted	2	\$0	\$0	\$0	2	4	33	132	13.2	6.6	\$16,623	\$0	0	a, e
6) Records of All Semi-Annual Compliance Reports														
Submitted	2	\$0	\$0	\$0	2	4	0	0	0	0	\$0	\$0	0	a, e
7) Records of Monthly Fuel Use	0.5	\$0	\$0	\$0	12	6	261	1,566	157	78.3	\$197,204	\$0	0	а
8) Records of Annual Tune-up	0.25	\$0	\$0	\$0	1	0.25	261	65	6.53	3.26	\$8,217	\$0	261	С
E. Personnel Training	40	\$0	\$0	\$0	1	40	33	1,320	132	66	\$166,226	\$0	0	g
F. Time for Audits	na													
Recordkeeping Subtotal									3,546		\$388,269	\$0		
Totals									9,804		\$1,073,572	\$750,375	99	

a In order to calculate a per year estimate of the number of boilers and facilities required to meet these rule requirements, the number of projected boilers and facilities is each divided by 3.

c Energy Audits are a requirement for existing units only.

d Assumes facility must already maintain records on boiler insurance and/or maintenance schedule as part of their operations. No new record system would be required.

e Only facilities with process gas (gas 2 units) subject to numerical emission limits are expected to be required to submit semi-annual compliance reports and conduct testing and monitoring (There will not be any new process gas units). Natural gas and refinery gas units are required to submit reports annually and conduct a tune-up. While the rule provides flexibility to conduct less frequent tune-ups for large units with a have a continuous oxygen trim system that maintains an optimum air to fuel ratio, the number of units with this configuration is unknown and the ICR conservatively assumes all large units will conduct tune-ups annually.

If Process gas units are expected to demonstrate compliance with a stack test instead of a fuel analysis. However no new process gas units are expected to demonstrate compliance with a stack test instead of a fuel analysis. However no new process gas units are required to submit reports annually.

For on-poing training activities to keep personnel updated in order to implement compliance activities. Assumes all new respondents will conduct training.

h Assume all units will fire natural gas, so fuel spec analysis not necessary.

i Assumed no units would fire an alternative fuel.

j Estimated number of units expected to require each type of parameter monitoring are consistent with the estimated number of units expected to install controls, as outlined in the memorandum: "Revised (November 2011) Methodology for Estimating Cost and Emissions Impacts for Industrial, Commercial, Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants – Major Source." Small edits to the MACT floor dataset were made after the impacts analysis and ICR burden estimates were prepared. These edits are not reflected in the ICR or impacts analysis, but the changes are incorporated into the burden estimates for the final rule.

Table 7.B.: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal)

Existing Small and Limited Use Solid Fuel Units

				Alsuliy Siliali	and Limited Us	se Soliu Fuel	UIIIIS							
Burden Item	(A) Respondent Hours per Occurrence (Technical hours)	(B) Certified Energy Audit Cost per Occurrence	(C) Annual Tune-Up Cost per Occurrence	(D) Other Non- Labor Costs Per Occurrence	(E) Number of Occurrences Per Respondent Per Year	(F) Technical Hours per Respondent Per Year (A X E)	(G) Number of Respondents Per Year	(H) Technical Hours per Year @ \$99.16 (F X G)	(I) Clerical Hours per Year @ \$50.88 (H X 0.1)	(J) Management Hours per Year @ \$127.43 (H X .05)	(K) Total Labor Costs Per Year	(L) Total Non-Labor Capital Costs Per Year ((B+C+D)x ExG)	(M) Total Number of Responses per Year (E X G)	
Applications	na													
Surveys and Studies	na													
Reporting Requirements														
A. Familiarization with Rule Requirements	5	\$0	\$0	\$0	1	5	5	25	3	1	\$3,148	\$0	0	a
B. Required Activities														
Conduct Energy Audit														
a) Commerical	20	\$854	\$0	\$0	1	20	0	0	0	0	\$0	\$0	0	b,c, d
b) Industrial	20	\$18,292	\$0	\$0	1	20	0	0	0	0	\$0	\$0	0	b,c, d
Biennual Tune-Up	12	\$0	\$2,228	\$0	0.5	6	44	264	26.4	13.2	\$33,245	\$98,032	0	c,i
C. Create Information	na													
D. Gather Information	na													
E. Report Preparation														
<ol> <li>Initial Notification that Source is Subject</li> </ol>	2	\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0	a
Notification of Compliance Status	8	\$0	\$0	\$0	1	8	0	0	0	0	\$0	\$0	0	С
Biennial Compliance Report	5	\$0	\$0	\$0	0.5	2.5	5	13	1.25	0.63	\$1,574	\$0	3	f
<ol> <li>Initial Report on results of Energy Audit</li> </ol>	5	\$0	\$0	\$0	1	5	0	0	0.00	0.00	\$0	\$0	0	С
								302	30	15				
Reporting Subtotal									347		\$37,967	\$98,032	3	
Recordkeeping Requirements														
A. Familiarization with Rule Requirements	Included in 3a													
B. Implement Activities	na													
C. Develop Record System	na													e
D. Record Information														
Records of All Notifications and Compliance Reports Submitted	2	\$0	\$0	\$0	0.5	1	5	5	0.50	0.25	\$630	\$0	0	С
Records of Startup, Shutdown,     Malfunction	15	\$0	\$0	\$0	1	15	0	0	0	0	\$0	\$0	0	g
3) Biennial Tune-Up Records	0.5	\$0	\$0	\$0	0.5	0.25	44	11	1.10	0.55	\$1,385	\$0	0	С
E. Personnel Training	40	\$0	\$0	\$0	1	40	3	120	12	6	\$15,111	\$0	0	h
F. Time for Audits	na													
Recordkeeping Subtotal									156		\$17,126	\$0	0	
Totals									503		\$55,094	\$98,032	3	

a The burden on existing sources to refamiliarize themselves with the rule requirements is assumed at 5 hours for small units.

b Cost includes taking an inventory of facility equipment including age, operating schedules, square feet of the facility and other details necessary for preparing for the audit pre-screening, attending the energy audit, and reviewing audit report from the audit professional. Based on the distribution facility NAICS codes in the 2008 combustion unit survey database, 12% of facilities are in the commercial sector while the remaining 88% of facilities are in the industrial sector.

c It is assumed that the affected existing units have eonducted an audit, developed an initial site-specific testing and monitoring plan, and submitted initial notifications following the compliance date of January 31, 2016. It is assumed that all existing units are submitting reports and conducting the required recordkeeping. Annualized cost of \$2228 for a tune-up is calculated considering a biennual schedule.

d Cost per occurrence for energy audit professionals including an phone screening to discuss the facility prior to a visit, a 2 to 4 hour site visit, and an additional 2-4 hours to prepare a follow-up report on recommendations and findings. These site visits are assumed to be conducted by certified energy professionals. It is assumed that all will be industrial facilities since industrial is the vast majority of projected units.

e Assumes facility must already maintain records on boiler insurance and/or maintenance schedule. No new record system would be required.

f Since a tune-up is required biennially, every two years, the compliance reports for small units are also due every two years. Records of the tune-ups will be submitted to the Administrator upon request.

g Small units are not required to maintain records on startup, shutdown and malfunction.

h For on-going training activities to keep personnel updated in order to implement compliance activities. Assumes half of respondents will conduct training each year.

i Assumes a biennial tune-up is conducted on half of all units each year. Some very small boilers (<5mmBtu/hr) or limited use boilers which operate less than 100 hours annually qualify for tune-ups every five years, however they would still incur an initial tune-up. For the time period of this ICR, there will not be a difference in burden associated with biennial vs 5-year tune-ups for existing units.

Should this be 5 existing respondents, see year 1 totals in table 3

Table 8.B.: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal) Existing Small and Limited Use Liquid Fuel Units

				Existing of	ian and Linni	La OSC Elquit	a i uci Oilita							
Burden Item	(A) Respondent Hours per Occurrence (Technical hours)	(B) Certified Energy Audit Cost per Occurrence	(C) Annual Tune-Up Cost per Occurrence	(D) Other Non-Labor Costs Per Occurrence	(E) Number of Occurrences Per Respondent Per Year	(F) Technical Hours per Respondent Per Year (A X E)	(G) Number of Respondents Per Year	(H) Technical Hours per Year @ \$99.16 (F X G)		(J) Management Hours per Year @ \$127.43 (H X .05)	(K) Total Labor Costs Per Year	(L) Total Non- Labor Capital Costs Per Year ((B+C+D)xExG	(M) Total Number of Responses per Year (E X G)	=ootnotes
1. Applications	na		p			( /		/	,				-/-	
Surveys and Studies	na													1
3. Reporting Requirements														
A. Familiarization with Rule Requirements	5	\$0	\$0	\$0	1	5	45	225	23	11	\$28,334	\$0	0	a
B. Required Activities			7.7		_	-					7=0,00	1.	-	-
Conduct Energy Audit														
a) Commerical	20	\$854	\$0	\$0	1	20	0	0	0	0	\$0	\$0	0	b, c, d
b) Industrial	20	\$18,292	\$0	\$0	1	20	0	0	0	0	\$0	\$0	0	b, c, d
2. Biennual Tune-Up	12	\$0	\$2,228	\$0	0.5	6	385	2,310	231.0	115.5	\$290,895	\$857,780	0	c, f, i
C. Create Information	na													
D. Gather Information	na													
E. Report Preparation														
Initial Notification that Source is Subject	2	\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0	а
Notification of Compliance Status	8	\$0	\$0	\$0	1	8	0	0	0.0	0.0	\$0	\$0	0	С
Biennial Compliance Report	5	\$0	\$0	\$0	0.5	2.5	45	113	11.3	5.6	\$14,167	\$0	23	c, f
4) Initial Report on results of Energy Audit	5	\$0	\$0	\$0	1	5	0	0	0	0.0	\$0	\$0	0	С
Reporting Subtotal									3,045		\$333,396	\$857,780	23	
Recordkeeping Requirements														
A. Familiarization with Rule Requirements	Included in 3a													
B. Implement Activities	na													
C. Develop Record System	na													е
D. Record Information														
Records of All Notifications and Compliance Reports Submitted	2	\$0	\$0	\$0	0.5	1	45	45	4.5	2.3	\$5,667	\$0	0	С
Records of Startup, Shutdown,     Malfunction	15	\$0	\$0	\$0	1	15	0	0	0	0	\$0	\$0	0	c, g
3) Biennial Tune-Up Records	0.5	\$0	\$0	\$0	0.5	0.25	385	96	9.6	4.8	\$12,121	\$0	0	c, f
E. Personnel Training	40	\$0	\$0	\$0	1	40	23	920	92	46	\$115,854	\$0	0	h
F. Time for Audits	na													
Recordkeeping Subtotal									1220		\$133,642	\$0	0	
Totals	1								4.265		\$467.037	\$857,780	23	1

a The burden on existing sources to refamiliarize themselves with the rule requirements is assumed at 5 hours for small units.

c It is assumed that the affected existing units have eonducted an audit, developed an initial site-specific testing and monitoring plan, and submitted initial notifications following the compliance date of January 31, 2016. It is assumed that all existing units are submitting reports and conducting the required recordkeeping. Annualized cost of \$2228 for a tune-up is calculated considering a biennual schedule.

d Cost per occurrence for energy audit professionals including an phone screening to discuss the facility prior to a visit, a 2 to 4 hour site visit, and an additional 2-4 hours to prepare a follow-up report on recommendations and findings. These site visits are assumed to be conducted by certified energy professionals.

e Assumes facility must already maintain records on boiler insurance and/or maintenance schedule. No new record system would be required.

f Since a tune-up is required biennially, every two years, the compliance reports for small units are also due every two years. Records of the tune-ups will be submitted to the Administrator upon request.

g Small units are not required to maintain records on startup, shutdown and malfunction.

h For on-going training activities to keep personnel updated in order to implement compliance activities. Assumes half of respondents will conduct training each year.

i Assumes a biennial tune-up is conducted on half of all units each year. Some very small boilers (<5mmBtu/hr) or limited use boilers which operate less than 100 hours annually qualify for tune-ups every five years, however they would still incur an initial tune-up. For the time period of this ICR, there will not be a difference in burden associated with biennial vs 5-year tune-ups for existing units.

edited footnote

Table 9.B.: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal)

Existing Small and Limited Use Gas Fuel Units

					sung Sman a	and Limited U	se Gas Fuel C	אווונס							
Burden Item	(A) Respondent Hours per Occurrence (Technical hours)	(B) Emission Test Contractor Hours Per Occurrence	(B) Certified Energy Audit Cost per Occurrence	(C) Annual Tune-Up Cost per Occurrence	(D) Other Non-Labor Costs Per Occurrence	(E) Number of Occurrences Per Respondent Per Year	(F) Technical Hours per Respondent Per Year (A X E)	(G) Number of Respondents Per Year	(H) Technical Hours per Year @ \$99.16 (F X	(I) Clerical Hours per Year @ \$50.88 (H X 0.1)	(J) Management Hours per Year @ \$127.43 (H X	(K) Total Labor Costs Per Year	(L) Total Non- Labor Capital Costs Per Year ((B+C+D)xExG)	(M) Total Number of Responses per Year (E X G)	Footnotes
	,	Occurrence	Occurrence	per Occurrence	Occurrence	Per Year	(A X E)	Per Year	G)	X 0.1)	.05)	Costs Per Year	((B+C+D)XEXG)	G)	ш
1. Applications	na														
Surveys and Studies	na														
Reporting Requirements						_									
A. Familiarization with Rule Requirements	5		\$0	\$0	\$0	1	5	1,027	5,135	514	257	\$646,643	\$0	0	a
B. Required Activities															
Conduct Energy Audit															
a) Commerical	20		\$854	\$0	\$0	1	20	0	0	0.00	0.00	\$0	\$0	0	b,c,d
b) Industrial	20		\$18,292	\$0	\$0	1	20	0	0	0.00	0.00	\$0	\$0	0	b,c,d
Biennial Tune-Up	12		\$0	\$1,580	\$0	0.5	6	8,811	52,866	5,286.6	2,643.3	\$6,657,336	\$13,921,380	0	c,f,i
C. Create Information	na														
D. Gather Information	na														
E. Report Preparation															
<ol> <li>Initial Notification that Source is Subject</li> </ol>	2		\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0	а
Notification of Compliance Status	8		\$0	\$0	\$0	1	8	0	0	0.00	0.00	\$0	\$0	0	С
Biennial Compliance Report	5		\$0	\$0	\$0	0.5	2.5	1,027	2,568	256.75	128.38	\$323,321	\$0	514	c,f
Initial Report on results of Energy Audit	5		\$0	\$0	\$0	1	5	0	0	0.00	0.00	\$0	\$0	0	С
Reporting Subtotal										69,654		\$7,627,300	\$13,921,380	514	
Recordkeeping Requirements															<b>T</b>
A. Familiarization with Rule Requirements	Included in 3a														
B. Implement Activities	na														
C. Develop Record System	na														е
D. Record Information															
Records of All Notifications and Compliance Reports Submitted	2	0	\$0	\$0	\$0	0.5	1	1,027	1,027	102.70	51.35	\$129,329	\$0	0	С
Records of Startup, Shutdown,     Malfunction	15	0	\$0	\$0	\$0	1	15	0	0	0	0	\$0	\$0	0	c,g
3) Biennial Tune-Up Records	0.5		\$0	\$0	\$0	0.5	0.25	8,811	2,203	220.28	110.14	\$277,389	\$0	0	c,f
E. Personnel Training	40		\$0	\$0	\$0	1	40	514	20,560	2,056	1,028	\$2,589,090	\$0	0	h
F. Time for Audits	na														
Recordkeeping Subtotal										27358		\$2,995,808	\$0	0	
Totals										97,012		\$10,623,108	\$13,921,380	514	

a The burden on existing sources to refamiliarize themselves with the rule requirements is assumed at 5 hours for small units.

- c It is assumed that the affected existing units have conducted an audit, developed an initial site-specific testing and monitoring plan, and submitted initial notifications following the compliance date of January 31, 2016. It is assumed that all existing units are submitting reports and conducting the required recordkeeping. Annualized cost of \$2228 for a tune-up is calculated considering a biennual schedule.
- d Cost per occurrence for energy audit professionals including an phone screening to discuss the facility prior to a visit, a 2 to 4 hour site visit, and an additional 2-4 hours to prepare a follow-up report on recommendations and findings. These site visits are assumed to be conducted by certified energy professionals.
- e Assumes facility must already maintain records on boiler insurance and/or maintenance schedule. No new record system would be required.
- f Since a tune-up is required biennially, every two years, the compliance reports for small units are also due every two years. Records of the tune-ups will be submitted to the Administrator upon request.
- g Small units are not required to maintain records on startup, shutdown and malfunction.
- h For on-going training activities to keep personnel updated in order to implement compliance activities. Assumes half of respondents will conduct training each year.

i Assumes a biennial tune-up is conducted on half of all units each year. Some very small boilers (<5mmBtu/hr) or limited use boilers which operate less than 100 hours annually qualify for tune-ups every five years, however they would still incur an initial tune-up. For the time period of this ICR, there will not be a difference in burden associated with biennial vs 5-year tune-ups for existing units.

edited footnote

Table 10.B.: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal)

New Small Solid Fuel Units

					Siliali Sullu F	uci Oilito								
Burden Item	(A) Respondent Hours per Occurrence (Technical hours)	(B) Certified Energy Audit Cost per Occurrence	(C) Annual Tune-Up Cost per Occurrence	(D) Other Non-Labor Costs Per Occurrence	(E) Number of Occurrences Per Respondent Per Year	(F) Technical Hours per Respondent Per Year (A X E)	(G) Number of Respondents Per Year	(H) Technical Hours per Year @ \$99.16 (F X G)		(J) Management Hours per Year @ \$127.43 (H X .05)	(K) Total Labor Costs Per Year	(L) Total Non- Labor Capital Costs Per Year ((B+C+D)xExG)	(M) Total Number of Responses per Year (E X G)	Footnotes
Applications	na													
2. Surveys and Studies	na													
Reporting Requirements														$\Box$
Read and Understand Rule Requirements	40	\$0	\$0	\$0	1	40	1	40	4	2	\$5,037	\$0	0	а
B. Required Activities														$\Box$
1. Biennial Tune-Up	12	\$0	\$2,228	\$0	0.5	6	2	12	1.2	0.6	\$1,511	\$4,456	0	а
C. Create Information	na													
D. Gather Information	na													
E. Report Preparation														
Initial Notification that Source is Subject	2	\$0	\$0	\$0	1	2	1	2	0	0	\$252	\$0	1	а
Notification of Compliance Status	8	\$0	\$0	\$0	1	8	1	8	1	0	\$1,007	\$0	1	а
3) Biennial Compliance Report	5	\$0	\$0	\$0	0.5	2.5	1	2.5	0.25	0.13	\$315	\$0	1	d
Reporting Subtotal									74.2		\$8,122	\$4,456	3	
Recordkeeping Requirements														
Read and Understand Rule Requirements	Included in 3a													
B. Implement Activities	na													
C. Develop Record System	na													b
D. Record Information														
Records of All Notifications and Compliance Reports Submitted	2	\$0	\$0	\$0	0.5	1	1	1	0.10	0.05	\$126	\$0	0	a
Biennial Tune-Up Records	0.5	\$0	\$0	\$0	0.5	0.25	2	1	0.05	0.03	\$63	\$0	0	a, d
E. Personnel Training	40	\$0	\$0	\$0	1	40	1	40	4	2	\$5,037	\$0	0	С
F. Time for Audits	na													
Recordkeeping Subtotal									47.7		\$5,226	\$0	0	
Totals									122		\$13,348	\$4,456	3	

a Assumes one respondent with new small solid units per 3-year period, and that a tune-up is conducted on all units.

b Assumes facility must already maintain records on boiler insurance and/or maintenance schedule. No new record system would be required.

c For on-going training activities to keep personnel updated in order to implement compliance activities. Assumes all new respondents will conduct training.

d Since a tune-up is required biennially, every two years, the compliance reports for small units are also due every two years. Records of the tune-ups will be submitted to the Administrator upon request.

Table 11.B.: Annual Respondent Burden and Cost -- NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal) – Year 2

New Small Liquid Fuel Units

					Siliali Liquiu								
Burden Item	(A) Respondent Hours per Occurrence (Technical hours)	(B) Certified Energy Audit Cost per Occurrence	(C) Annual Tune-Up Cost per Occurrence	Costs Per	(E) Number of Occurrences Per Respondent Per Year	(F) Technical Hours per Respondent Per Year (A X E)	(G) Number of Respondents Per Year	(H) Technical Hours per Year @ \$99.16 (F X G)	(I) Clerical Hours per Year @ \$50.88 (H X 0.1)	(J) Management Hours per Year @ \$127.43 (H X .05)	(K) Total Labor Costs Per Year	(L) Total Non- Labor Capital Costs Per Year ((B+C+D)xExG)	(M) Total Number of Responses per Year (E X G)
Applications	na												
Surveys and Studies	na												
Reporting Requirements													
Read and Understand Rule Requirements	40	\$0	\$0	\$0	1	40	0	0	0	0	\$0	\$0	0 a
B. Required Activities													
Biennial Tune-Up	12	\$0	\$2,228	\$0	0.5	6	0	0	0	0	\$0	\$0	0
C. Create Information	na												
D. Gather Information	na												
E. Report Preparation													
Initial Notification that Source is Subject	2	\$0	\$0	\$0	1	2	0	0	0	0	\$0	\$0	0
Notification of Compliance Status	8	\$0	\$0	\$0	1	8	0	0	0	0	\$0	\$0	0
Biennial Compliance Report	5	\$0	\$0	\$0	0.5	2.5	0	0	0	0	\$0	\$0	0
Reporting Subtotal									0	•	0	0	0
Recordkeeping Requirements													
Read and Understand Rule Requirements	Included in 3a												
B. Implement Activities	na												
C. Develop Record System	na												
D. Record Information													
Records of All Notifications and Compliance Reports Submitted	2	\$0	\$0	\$0	0.5	1	0	0	0	0	\$0	\$0	0
Biennial Tune-Up Records	0.5	\$0	\$0	\$0	0.5	0.25	0	0	0	0	\$0	\$0	0
E. Personnel Training	40	\$0	\$0	\$0	1	40	0	0	0	0	\$0	\$0	0
F. Time for Audits	na												
Recordkeeping Subtotal									0		\$0	\$0	0
Totals									0		\$0	\$0	0

a There are no new small solid units expected to be constructed/reconstructed over the next 3 years.

Table 12.B.: Annual Respondent Burden and Cost -- NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal) – Year 2

New Small Gas Fuel Units

				nev	<u>ı</u> Small Gas Fı	iei Units								
Burden Item	(A) Respondent Hours per Occurrence (Technical hours)	(B) Certified Energy Audit Cost per Occurrence	(C) Annual Tune-Up Cost per Occurrence	(D) Other Non-Labor Costs Per Occurrence	(E) Number of Occurrences Per Respondent Per Year	Hours per	(G) Number of Respondents Per Year	(H) Technical Hours per Year @ \$99.16 (F X G)		(J) Management Hours per Year @ \$127.43 (H X .05)	(K) Total Labor Costs Per Year	(L) Total Non- Labor Capital Costs Per Year ((B+C+D)xExG)	(M) Total Number of Responses pe Year (E X G)	
1. Applications	na													
Surveys and Studies	na													$\perp$
Reporting Requirements														
Read and Understand Rule Requirements	40	\$0	\$0	\$0	1	40	41	1,640	164	82	\$206,523	\$0	0	a
B. Required Activities														
Biennial Tune-Up	12	\$0	\$2,228	\$0	0.5	6	326	1,956	195.6	97.8	\$246,316	\$726,328	0	a,e,f
C. Create Information	na													
D. Gather Information	na													
E. Report Preparation														
Initial Notification that Source is Subject	2	\$0	\$0	\$0	1	2	41	82	8.2	4.1	\$10,326	\$0	41	a
Notification of Compliance Status	8	\$0	\$0	\$0	1	8	41	328	32.8	16.4	\$41,305	\$0	41	a
Biennial Compliance Report	5	\$0	\$0	\$0	0.5	2.5	41	103	10.3	5.1	\$12,908	\$0	21	d,e
Reporting Subtotal									4,725		517,377	726,328	103	
Recordkeeping Requirements														$\top$
Read and Understand Rule Requirements	Included in 3a													$\top$
B. Implement Activities	na													
C. Develop Record System	na													b
D. Record Information														$\top$
Records of All Notifications and Compliance Reports Submitted	2	\$0	\$0	\$0	0.5	1	41	41	4.1	2.1	\$5,163	\$0	0	a
Biennial Tune-Up Records	0.5	\$0	\$0	\$0	0.5	0.25	326	82	8.2	4.1	\$10,263	\$0	0	a,e,f
E. Personnel Training	40	\$0	\$0	\$0	1	40	41	1,640	164	82	\$206,523	\$0	0	С
F. Time for Audits	na													
Recordkeeping Subtotal									2027		\$221,949	\$0	0	
Totals									6,752		\$739,326	\$726,328	103	

a In order to calculate a per year estimate of the number of boilers and facilities required to meet these rule requirements, the number of projected boilers and facilities is each divided by 3.

b Assumes facility must already maintain records on boiler insurance and/or maintenance schedule. No new record system would be required.

c For on-going training activities to keep personnel updated in order to implement compliance activities.

d Since a tune-up is required biennially, every two years, the compliance reports for small units are also due every two years. Records of the tune-ups will be submitted to the Administrator upon request.

e Assumes for boilers which performed a tune-up in year 1, the biennial tune-up would also occur in year 3.

f Very small boilers qualify for tune-ups every five years, however they would still incur an initial tune-up when they come online. For those boilers in year 1 which were performing their initial five-year tune-up, a tune-up in year 3 is not necessary. Four boilers would qualify for 5-year tune-ups and are thus not applicable to tune-ups in year 3.

# Table 13.A. Annual Federal Government Burden and Cost of Recordkeeping and Reporting for the Industrial, Commercial, and Institutional Boiler and Process Heater Major Source NESHAP Subpart DDDDD- Year 0 - First Year After Promulgation

							i	T
Burden Item	EPA hours per occurrence (A)	Number of occurrences per year (B)	EPA hours per occurrence per year (C=AxB)	Technical hours per year (D=C)	Mangmt hours per year (E=Dx0.05)	Clerical hours per year (F=Dx0.1)	(H) Costs, \$ k	Footnotes
Read and understand rule requirements	40	60	2,400	2,400	120	240	\$129,413	a
Enter and update information into agency recordkeeping	40	00	2,400	2,400	120	240	Ψ129,413	a
system	2	1,936	3,872	3,872	194	387	\$208,786	b
Required activities								
A. Review and approve monitoring plan	20	4	80	80	4	8	\$4,314	n
B. Review and approve fuel monitoring plan	20	4	80	80	4	8	\$4,314	0
C. Observe initial stack/performance test	40	21	840	840	42	84	\$45,294	С
D. Observe repeat performance test	40	13	520	520	26	52	\$28,039	d
E. Review operating parameters	2	104	208	208	10	21	\$11,216	е
F. Review continuous parameter monitoring	2	26	52	52	3	5	\$2,804	f
4 Excess Emissions Enforcement Activities and Inspections	24	3	0	0	0	0	\$0	g
5 Notification requirements								
A. Review initial notification that sources are subject to the standard	2	1,936	3,872	3,872	194	387	\$208,786	b
B. Review notification of initial performance tests and review test plan	20	104	2,080	2,080	104	208	\$112,158	е
C. Review notification of compliance status	2	80	160	160	8	16	\$8,628	b
6. Reporting requirements			0	0	0	0	\$0	
A. Review semiannual compliance report	4	8	32	32	2	3	\$1,726	h
B. Review annual compliance report	2	0	0	0	0	0	\$0	i
C. Review biennial compliance report	1	21	21	21	1	2	\$1,132	j
D. Review initial report on results of energy audit	2	0	0	0	0	0	\$0	L
7. Travel Expenses for Tests Attended	3 days * (\$110 trip) = \$1104 p		als/incidentals) + (\$	\$600 round			\$50,388	m
TOTAL BURDEN AND COST (SALARY)				14,217	711	1,422	\$816,997	
TOTAL ANNUAL HOURS						16,350		

a Number of occurences is the number of states where affected sources will exist and each EPA Region (50 states + 10 EPA regions = 60 respondents).

m Total cost is based on the number of trips taken by EPA to observe performance tests in year 1 (4.A. & 4.B.) multiplied by \$1104 per trip. The source for hotel and meals/incidental costs is based on FY' 10 per diem rates, averaged across all locations in the United States. Airfares are estimated based on experience from other rulemakings. See: http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentId=17943&contentType=GSA\_BASIC

b Number of occurences is based on the total number of affected facilities that are required to submit initial notifications stated they are subject to the standard (all new boilers in the large and small solid, liquid, and gaseous subcategories, plus all existing large and small solid, liquid, and gaseous subcategories). For initial notifications of compliance status, the number of occurences is based on all new boilers in the large and small solid, liquid, and gaseous units have until year 3 to submit this notification.

c Number of occurences is based on the assumption that EPA personnel will observe 20% of the initial performance tests that occur.

d Number of occurences is based on the assumption that of the units that test, 10% will have to retest and EPA personnel will observe all these retests. In addition solid fuel units are expected to re-test to obtain worst-case con

e Number of occurences is based on the number of units that will test and set/submit operating limits.

f Number of occurences begins in year 3 for existing units and in year 1 for new units and is based on the number of units maintaining records of control device parameters.

g Number of occurences is based on the assumption that of the units that test, 10% of them will have exceedances and need enforcement.

h Number of occurences is the number of units that will submit these semi-annual compliance reports, 2 reports per year per respondent.

i. Number of occurences is the number of units that will submit these annual compliance reports.

j. Number of occurences is the number units that will submit these biennial compliance reports.

k These rates are from the Office of Personnel Management (OPM), 2010 General Schedule, which excludes locality rates of pay. The rates have been increased by 60 percent to account for the benefit packages available to government employees. These rates can be obtained from the OPM web site, http://www.opm.gov/oca/payrates/index/htm.

L Energy audits only occur at existing facilities.

#### Annual Capital/Startup vs. Operation and Maintenance (O&M) Costs (B) (C) (E) (A) Number of Annual (D) Annual O&M and Boiler Type Respondents Capital/Startup Annual O&M Annualized Capital (facilities) Cost Costs Existing Large Solid Units 121 \$0 \$74,866,304 \$74,866,304 New Large Solid Units 3 \$2,005,198 \$1,218,750 \$3,223,948 Existing Small and Limited Use Solid 5 \$98,032 \$0 Units \$98,032 New Small Solid Units \$0 \$4,456 1 \$4,456 \$0 \$17,695,826 Existing Large Liquid Units \$17,695,826 66 New Large Liquid Units 0 \$0 \$0 \$0 Existing Small and Limited Use 45 \$857,780 \$0 Liquid Units \$857,780 New Small Liquid Units \$0 \$0 0 Existing Large Gaseous Units \$0 \$18,867,183 \$18,867,183 669 New Large Gaseous Units 33 \$0 \$750,375 \$750,375 Existing Small and Limited Use 1027 \$0 \$13,921,380 Gaseous Units \$13,921,380 New Small Gaseous Units \$0 \$726,328 \$726,328 41 \$131,011,612 \$129,006,414 Total \$2,005,198 2,012

\$2,000,000

\$129,000,000

\$131,000,000

2,010

Total (Rounded)