Table 1: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutiona

Boiler Type	Number of Units (Average)	Number of Respondents per Year (Average)	Number of Responses Per Year (Average)	Reporting
Existing Large Solid Units	453	282	563	71,582
New Large Solid Units	5	5	20	1,311
Existing Small and Limited Use Solid Units	45	6	4	367
New Small Solid Units	1	0.33	1	27
Existing Large Liquid Units	37	21	42	5,729
New Large Liquid Units	0	0	0	0
Existing Small and Limited Use Liquid Units	25	3	2	198
New Small Liquid Units	0	0	0	0
Existing Large Gaseous Units	6,439	760	1,736	149,265
New Large Gaseous Units	261	33	100	6,285
Existing Small and Limited Use Gaseous Units	9,789	1,150	575	77,463
New Small Gaseous Units	326	41	103	4,725
Subtotals (all types)	17,382	2,302	**3,146**	**316,952**
GRAND TOTAL (rounded) [a]				
Total Private Sector		2,164	2,957	297,935
Total Public Sector		138	189	19,017

[a] Totals have been rounded to 3 significant figures. Figures may not add exactly due to rounding.

ıl Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewal)

Recordkeeping	Total Labor Hours	Total Labor Cost	Total Annual O&M and Annualized Capital Costs per year	Total Costs
32,013	103,595	$12,253,764.68	$32,097,783	$44,351,547.68
512	1,823	$215,605.17	$345,590.00	$561,195.17
158	526	$62,187.70	$101,002.67	$163,190.36
16	43	$5,089.73	$2,228.00	$7,317.73
2,568	8,297	$981,445.63	$786,707	$1,768,152.63
0	0	$0	$0	$0.00
78	276	$32,594.13	$55,700	$88,294.13
0	0	$0	$0	$0.00
21,079	170,344	$20,149,244.23	$19,537,883	$39,687,127.57
3,563	9,848	$1,164,846.05	$750,375	$1,915,221.05
30,587	108,050	$12,780,727.75	$15,466,620.00	$28,247,347.75
2,027	6,752	$798,623.32	$726,328.00	$1,524,951.32
92,600	**409,552**	**48,444,128**	**$69,870,217**	**$118,314,345**
	410,000	**$48,400,000**	**$69,900,000**	**$118,000,000**

87,044	385,000	$45,500,000	$65,700,000	$111,000,000
5,556	24,600	$2,910,000	$4,190,000	$7,100,000

No. Response per Respondent	Total Annual Response
2.00	563
4.00	20
0.63	4
0.00	0
2.00	42
0.00	0
0.68	2
0.00	0
2.28	1736
3.00	100
0.50	575
2.50	103
1.37	**3146**
130	hours per response

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)

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)	Management hours per year (E=Dx0.05)	Clerical hours per year (F=Dx0.1)	(H) Costs, $ [k]	Footnotes
1. Familiarization with rule requirements	10	0	0	0	0	0	$0.00	a
2. Enter and update information into agency recordkeeping system	2	159	319	319	15.9	31.9	$11,569.19	b
3. Required activities								
A. Review and approve monitoring plan	20	5	100	100	5	10	$3,630.50	n
B. Review and approve fuel monitoring plan	20	420	8,400	8,400	420	840	$304,962.00	o
C. Observe initial stack/performance test	40	4	160	160	8	16	$5,808.80	c
D. Observe repeat performance test	40	48	1,920	1,920	96	192	$69,705.60	d
E. Review operating parameters	2	20	40	40	2.0	4.0	$1,452.20	e
F. Review continuous parameter monitoring	2	495	990	990	49.5	99.0	$35,941.95	f
4. Excess Emissions Enforcement Activities and Inspec	24	2	0	0	0	0	$0	g
5. Notification requirements								
A. Review initial notification that sources are subject to the standard	2	80	159	159	8.0	15.9	$5,784.60	b
B. Review notification of initial performance tests and review test plan	20	20	400	400	20	40	$14,522.00	e
C. Review notification of compliance status	2	80	159	159	8.0	15.9	$5,784.60	b
6. Reporting requirements			0	0	0	0	$0.00	
A. Review semiannual compliance report	4	615	2,461	2,461	123.1	246.1	$89,358.71	h
B. Review annual compliance report	2	760	1,520	1,520	76.0	152.0	$55,183.60	i
C. Review biennial compliance report	1	600	600	600	30	60	$21,793.74	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 * ($220 hotel + $96 meals/incidentals) + ($600 round trip) = $1,548 per trip						$80,496	m
TOTAL (rounded)				**19,800**			**$706,000**	p

Assumptions

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

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

d Number of occurrences 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 HCl emissions.

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

f Number of occurrences is based on the number of units maintaining records of control device parameters.

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

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

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

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

[k] These rates are from the Office of Personnel Management (OPM), 2021 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 $1,548 per trip. The source for hotel and meals/incidental costs is based on FY21 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/2021

Table 3: Respondents and Units by Subcategory – NESHAP for Industrial, Commercial, and Institutiona

					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	277	448	5	5	282	453
Small and Limited Use Solid Units	6	44	0.33	1.33	6	45
Large Liquid Units	21	37	0	0	21	37
Small and Limited Use Liquid Units	3	25	0	0	3	25
Large Gaseous Units	727	6,178	33	261	760	6,439
Small and Limited Use Gaseous Units	1,109	9,463	41	326	1,150	9,789
Subtotals	2,143	16,195	80	594	2,223	16,789

al Boilers and Process Heaters

Year 2		Year 3	
Total Respondents	Total Units	Total Respondents	Total Units
287	458	292	463
7	47	7	48
21	37	21	37
3	25	3	25
794	6,701	827	6,962
1,191	10,115	1,232	10,441
2,302	17,382	2,382	17,976

Number of Respondents - All					
	Respondents That Submit Reports		Respondents That Do Not Submit Any Reports		
Year	(A) Number of New Respondents [a]	(B) Number of Existing Respondents	(C) Number of Existing Respondents that keep records but do not submit reports	(D) Number of Existing Respondents That Are Also New Respondents	(E) Number of Respondents (E=A+B+C-D)
1	79	2,143	0	0	2,222
2	79	2,222	0	0	2,302
3	79	2,301	0	0	2,381
Average	79	2,222	0	0	2,302

Number of Respondents - By Subcategory					
	Respondents That Submit Reports		Respondents That Do Not Submit Any Reports		
Year	(A) Number of New Respondents	(B) Number of Existing Respondents	(C) Number of Existing Respondents that keep records but do not submit reports	(D) Number of Existing Respondents That Are Also New Respondents	(E) Number of Respondents (E=A+B+C-D)
Large Solid Units	5	282	0	0	286
Small Solid Units	0	6	0	0	7
Large Liquid Units	0	21	0	0	21
Small Liquid Units	0	3	0	0	3
Large Gaseous Units	33	760	0	0	794
Small Gaseous Units	41	1,150	0	0	1,191
Total	79	2,222	0	0	2,302

Total Annual Responses				
(A) Boiler Type	(B) Number of Respondents (facilities)	(C) Number of Responses (Average)	(D) Number of Existing Respondents That Keep Records But Do Not Submit Reports	(E) Total Annual Responses
Existing Large Solid Units	282	2	0	563
New Large Solid Units	5	4	0	20
Existing Small Solid Units	6	0.6	0	4
New Small Solid Units	0	3	0	1
Existing Large Liquid Units	21	2	0	42
New Large Liquid Units	0	0	0	0
Existing Small Liquid Units	3	0.7	0	2
New Small Liquid Units	0	0.0	0	0
Existing Large Gaseous Units	760	2.3	0	1,736
New Large Gaseous Units	33	3	0	100
Existing Small Gaseous Units	1150	0.5	0	575
New Small Gaseous Units	41	2.5	0	103
TOTAL	**2,302**	**21**	**0**	**3,146**

207.18

ICRAS SUMMARY	REPORTING			RECORDKEEPING	
	Annual Burden Hours	Number of Respondents (Facilities)	Number of Responses	Annualized Capital/Start-up and O&M	Annual Burden Hours
Year 3 (2013)	316,952	2,302	3,146	$ 69,870,217	92,600
Annual Burden	316,952	2,302	3,146	$ 69,870,217	92,600
Cost per Response				$ 37,610	
Burden Hours per Response				130	

INDUSTRY	3- year period	Average per year	Public Sector	Private Sector
Reporting Hours		316,952	19,017	297,935
Recordkeeping Hours		92,600	5,556	87,044
Total HOURS	409,552	**136,517**	8,191	128,326
TOTAL COSTS (non-labor)	$ 69,870,217	**$ 23,290,072**	$ 1,397,404	$ 21,892,668
Total LABOR COSTS	$ 48,444,128	**$ 16,148,043**	$ 968,883	$ 15,179,160
TOTAL LABOR AND NON-Labor COSTS	$ 118,314,345	**$ 39,438,115**	$ 2,366,287	$ 37,071,828
Total Responses		**3,146**	189	2,957
Small Entity Respondents per year (9% of respondents)			12	195
Total Respondents per year			138	2,164

AGENCY	Average per year	Average per year (rounded)
Hours	19,800	19,800
Costs (labor + travel)	$ 706,000	$ 706,000

NEW ASSUMPTIONS for 2028.11 ICR Renewal:

Number of existing large biomass, large coal, large liquid and large Gas 2 units and facilities are taken from December 2020 CEDRI data.
Number of new large biomass units and facilities are taken from CEDRI data.
Assume no growth in small coal, large coal, small liquid, large liquid, Gas 1 Other, or Gas 2 units or facilities.
Update existing unit and facility counts for limited and small biomass, large Gas 1 NG only, and limited and small Gas 1 NG only based c
Number of new small biomass and new Gas 1 NG only units and facilities are based on previous trends in 2028.09.
Updated labor rates for industry and agency to 2021 values.
Additional assumptions updated in following spreadsheets (see comments)

Boiler Data

Data source is 2028.09 | Assume growth is zero

Data source is CEDRI 12/2020

Summary of Unit Count and Facility Count

Mact Floor Fuel Category	Size Category	Total Existing Units	Total Existing Facilities	Total New Units	Total New Facilities
Biomass	Limited Use	4	1	0	0
	<10	25	3	4	1
	>=10 to 100	104	60	5	4
	100 to 250	49	43	1	1
	>250	162	106	9	9
Coal	Limited Use	15	2	0	0
	<10	0	0	0	0
	>=10 to 100	8	4	0	0
	100 to 250	57	32	0	0
	>250	68	32	0	0
Gas 1 (NG Only)	Limited Use	333	39	0	0
	<10	9,079	1,065	978	123
	>=10 to 100	4,285	504	553	70
	100 to 250	1,284	151	165	21
	>250	609	72	66	9
Gas 1 (Other Gases)	Limited Use	0	0	0	0
	<10	0	0	0	0
	>=10 to 100	0	0	0	0
	100 to 250	0	0	0	0
	>250	0	0	0	0
	Limited Use	4	0	0	0
	<10	47	5	0	0

38		Gas 2	>=10 to 100	0	0	0	0					
39			100 to 250	0	0	0	0					
40			>250	0	0	0	0					
41		Liquid	Limited Use	8	1	0	0					
42			<10	17	2	0	0					
43			>=10 to 100	18	11	0	0					
44			100 to 250	15	6	0	0					
45			>250	4	4	0	0					
46		Grand Total		16,195	2,143	1,781	238					
47												
48		Mercury Fuel Spec Analysis (for other Gas 1 units) - Number estimated to test				413	=2.7% of all gas units > 10 MMBtu					
49		Number which will repeat stack test due to switching fuels				448	(applicable to all large solid units)					
50		Notification of Alternative fuel use (15.8% reported the use of liquid, large gas 1 units)				976						
51		Fuel Monitoring Plan - For facilities which have emission limits or for Gas facilities which perform the Hg gas spec				830						
52		CEDRI data indicates the number of existing large liquid units have decreased by 533, or 93.5% since 2028.09. The number of existing limited use liquid units and s										
53		PM CEMS required for all units >250 that are firing liquid or solid fuels										
54		Tune-ups required for all units <10 and all gas 1 units, regardless of size										
55		Existing large Gas 2 units: since there are no Gas 2 units in CEDRI and these units must report emission test results, assume no gas 2 units.										
56												
57												
58												
59		These public vs private sector calculations are from 2028.09										
60		5_AffectedSector	8_Small Entity	Count	% of Total							
61		Not-for-Profit	False	22								
62		Not-for-Profit	True	6	0.94	Private %						
63		Not-for-Profit	Unknown	3	0.06	Public %						
64		Private Enterprise	False	1276								
65		Private Enterprise	True	131								
66		Private Enterprise	Unknown	80								
67		Public Sector	False	82		% Small Entity						
68		Public Sector	True	14	Private Sector	0.1						
69		Public Sector	Unknown	6	Public Sector	0.15						
70		Did not use these unknowns:										
71		Unknown	False	3								
72		Unknown	Unknown	78								
73												
74		5_AffectedSector	8_Small Entity	Count								
75		Not-for-Profit	False	22								
76		Not-for-Profit	True	6								

	A	B	C	D	E	F	G	H	I	J	K	L
77												
78		Private Enterprise	False	1276								
79		Private Enterprise	True	131								
80												
81		Public Sector	False	82								
82		Public Sector	True	14								
83												
84		Did not use these unknowns:										
85		Unknown	False	3								
86		Unknown	Unknown	78								
87		Not-for-Profit	Unknown	3								
88		Private Enterprise	Unknown	80								
89		Public Sector	Unknown	6								

on previous trends in 2028.09.

Existing Respondents/Year				
	Yr1	Yr 2	Yr 3	Avg
Large Solid	277	282	287	282
Large Liquid	21	21	21	21
Large Gas	727	760	793	760
Small Solid	6	6	6	6
Small Liquid	3	3	3	3
Small Gas	1109	1150	1191	1150
Total Existing	2143	2222	2301	2222

New Respondents/Year	
Small Biomass	0
Large Biomass	5
Small Coal	0
Large Coal	0
Small Gas 1	41
Large Gas 1	33
Small Gas 2	0
Large Gas 2	0
Small Liquid	0
Large Liquid	0
Total New	79

Count of Limited Use Units from 2028.09

Mact Floor Fuel Cat	Size Category	Total
Biomass	<10	0
	>=10 to 100	1
	100 to 250	3
	>250	0
Coal	<10	0
	>=10 to 100	7
	100 to 250	7
	>250	1
Gas 1 (NG Only)	<10	7
	>=10 to 100	215
	100 to 250	89
	>250	22
Gas 1 (Other Gases)	<10	
	>=10 to 100	
	100 to 250	
	>250	
Gas 2	<10	0
	>=10 to 100	0

	S	T	U
38	Gas 2	100 to 250	4
39		>250	0
40			
41	Liquid	<10	13
42		>=10 to 100	57
43		100 to 250	40
44		>250	15
45	Grand Total		481

mall liquid units has also been decreased proportionally.

Labor Rates - Industry

Category	Rate	Note
Technical	$122.20	March 2021 Labor Rates
Clerical	$61.51	March 2021 Labor Rates
Managerial	$153.55	March 2021 Labor Rates
General Contractor	$80.00	
Certfied Energy Audit Contractor	$56.78	

Labor Rates - Agency

Managerial	$69.04
Clerical	$51.23
Technical	$27.73

Per Diem Info

Hotel	$220
Meals	$96
Airfare	$600
Trip Length	3
Total (3 days)	$1,548

Other Data

Percent of Stack Tests
Estimated Percent R
Estimated Percent Emissio

Updated Labor rates to 2021 General Schedule

average 2021 rates, https://www.perdiem101.com/conus/2021
average 2021 rates, https://www.perdiem101.com/conus/2022

Observed	20%
etesting	10%
n 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)
Existing Large Solid 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 (F X G)	(I) Clerical Hours per Year (H X 0.1)	(J) Management Hours per Year (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	Annualized Capital/start-up O&M	Total Capital (Monitor Purchase)
1. Applications	NA															
2. Surveys and Studies	NA															
3. Reporting Requirements																
A. Familiarization with Rule Requirements	10	$0	$0	$0	1	10	282	2,817	282	141	$383,147	$0	282	a		
B. Required Activities																
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. Initial Stack Test and Report (for PM)	12	$0	$5,000	$0	1	12	0	0	0	0	$0	$0	0	c,h		
3. Initial Stack Test and Report (for Hg)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	c		
4. Initial Stack Test and Report (for HCl)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	c		
5. Initial Stack Test and Report (for CO)	12	$0	$7,000	$0	1	12	0	0	0	0	$0	$0	0	c		
6. Annual Stack Test and Report (for PM)	12	$0	$5,000	$0	1	12	453	5,436	544	272	$739,451	$2,265,000	0	c,h,i		
7. Annual Stack Test and Report (for Hg)	12	$0	$8,000	$0	1	12	453	5,436	544	272	$739,451	$3,624,000	0	c, i		
8. Annual Stack Test and Report (for HCl)	12	$0	$8,000	$0	1	12	453	5,436	544	272	$739,451	$3,624,000	0	c, i		
9. Annual Stack Test and Report (for CO)	12	$0	$7,000	$0	1	12	453	5,436	544	272	$739,451	$3,171,000	0	c, i		
10. Repeat Stack Test and Report if Switch Fuels (for Hg and HCl)	24	$0	$16,000	$0	1	24	453	10,872	1,087	544	$1,478,902	$7,248,000	0	c,j		
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	453	5,436	544	272	$739,451	$1,302,375	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	c		
Opacity																
a) initial	10	$0	$0	$43,100	1	10	0	0	0	0	$0	$0	0	c,m		
b) annual	10	$0	$0	$14,700	1	10	217	2,170	217	109	$295,182	$3,189,900	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	c,L,m		
b) annual	10	$0	$0	$56,100	1	10	66	660	66	33	$89,779	$3,702,600	0	c,L,m		
O2																
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	453	4,530	453	227	$616,209	$650,508	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	103	1,030	103	52	$140,109	$576,800	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	c,m		
b) annual	10	$0	$0	$9,700	1	10	85	850	85	42.5	$115,624	$824,500	0	c,m		
DIFF Monitor																
a) initial	10	$0	$0	$43,500	1	10	0	0	0	0	$0	$0	0	c,m		
b) annual	10	$0	$0	$26,500	1	10	64	640	64	32	$87,058	$1,696,000	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	c,m		
b) annual	10	$0	$0	$9,700	1	10	23	230	23	11.5	$31,287	$223,100	0	c,m		
C. Create Information	NA															
D. Gather Information	NA															
E. Report Preparation																
1) Initial Notification that Source is Subject	2	$0	$0	$0	1	2	0	0	0	0	$0	$0	0	a		
2) Notification of Compliance Status	8	$0	$0	$0	1	8	0	0	0	0	$0	$0	0	c		
3) Initial Report on results of Energy Audit	5	$0	$0	$0	1	5	0	0	0	0	$0	$0	0	c		
4) Semi-annual Compliance Report	20	$0	$0	$0	2	40	282	11,267	1,127	563	$1,532,588	$0	563	a		
								62,245	**6,225**	**3,112**					**$32,097,783**	**$0**
Reporting Subtotal									**71,582**		**$8,467,139**	**$32,097,783**	**563**			
4. Recordkeeping Requirements																
A. Familiarization with Rule Requirements	Included in 3a															
B. Implement Activities	NA															
C. Develop Record System	NA													e		
D. Record Information																
1) Records of Operating Parameter Values	20	$0	$0	$0	1	20	453	9,060	906	453	$1,232,418	$0	0	c		
2) Records of Startup, Shutdown, Malfunction	15	$0	$0	$0	1	15	453	6,795	680	340	$924,314	$0	0	c,n		
3) Records of Stack Tests	2	$0	$0	$0	1	2	453	906	91	45	$123,242	$0	0	c		
4) Records of Monitoring Device Calibrations	2	$0	$0	$0	1	2	453	906	91	45	$123,242	$0	0	c		
5) Records of All Compliance Reports Submitted	2	$0	$0	$0	2	4	453	1,812	181	91	$246,484	$0	0	c		
6) Records of Monthly Fuel Use	0.5	$0	$0	$0	12	6	453	2,718	272	136	$369,725	$0	0	c		
E. Personnel Training	40	$0	$0	$0	1	40	141	5,640	564	282	$767,201	$0	0	f		
F. Time for Audits	NA															
								27,837	**2,784**	**1,392**					**$0**	
Recordkeeping Subtotal									**32,013**		**$3,786,625**	**$0**	**0**			
								90,082	**9,008**	**4,504**						
Totals									**103,595**		**$12,253,765**	**$32,097,783**	**563**			

Assumptions

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

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

[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.

[m] The number of units expected to require each type of parameter monitoring are taken from the CEDRI data, December 2020, and represent the reported data on units utilizing each type of monitoring.

[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.B.: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (New Large Solid 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	Annualized Capital/start-up O&M	Total Capital (Monitor Purchase)
1. Applications	NA															
2. Surveys and Studies	NA															
3. Reporting Requirements																
A. Read and Understand Rule Requirements	40	$0	$0	$0	1	40	5	200	20	10	$27,206	$0	0	a		
B. Required Activities																
1. Initial Stack Test and Report (for PM)	12	$0	$5,000	$0	1	12	5	60	6	3	$8,162	$25,000	0	a		
2. Initial Stack Test and Report (for Hg)	12	$0	$8,000	$0	1	12	5	60	6	3	$8,162	$40,000	0	a		
3. Initial Stack Test and Report (for HCl)	12	$0	$8,000	$0	1	12	5	60	6	3	$8,162	$40,000	0	a		
4. Initial Stack Test and Report (for CO)	12	$0	$7,000	$0	1	12	5	60	6	3	$8,162	$35,000	0	a		
5. Annual Stack Test and Report (for PM)	12	$0	$5,000	$0	1	12	0	0	0	0	$0	$0	0	a		
6. Annual Stack Test and Report (for Hg)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	a		
7. Annual Stack Test and Report (for HCl)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	a		
8. Annual Stack Test and Report (for CO)	12	$0	$7,000	$0	1	12	0	0	0	0	$0	$0	0	a		
9. Repeat Stack Test and Report if Switch Fuels (for Hg and HCl)	24	$0	$16,000	$0	1	24	5	120	12	6	$16,323	$80,000	0	a,d		
10. Initial Fuel Analysis for Mercury and HCL Content	5	$0	$400	$0	1	5	0	0	0	0	$0	$0	0	a,e		
11. Monthly Fuel Analysis for Mercury and HCL Content	5	$0	$400	$0	12	60	0	0	0	0	$0	$0	0	a,e		
12. Annual Tune-up	12	$0	$2,875	$0	1	12	5	60	6	3	$8,162	$14,375	0	a,g		
13. Continuous Parameter Monitoring														i		
Establish Site-specific monitoring plan (all)	40	$0		$0	1	40	5	200	20	10	$27,206	$0	0	a		
Opacity																
a) initial	10	$0	$0	$43,100	1	10	1	10	1	1	$1,360	$43,100	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,h		
b) annual	10	$0	$0	$56,100	1	10	0	0	0	0	$0	$0	0	a,h		
O2																
a) initial	10	$0	$0	$8,523	1	10	5	50	5	3	$6,801	$42,615	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	1	10	1	1	$1,360	$25,500	0	a		
b) annual	10	$0	$0	$9,700	1	10	0	0	0	0	$0	$0	0	a		
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	a		
b) annual	10	$0	$0	$9,700	1	10	0	0	0	0	$0	$0	0	a		
C. Create Information	NA															
D. Gather Information	NA															
E. Report Preparation																
1) Initial Notification that Source is Subject	2	$0	$0	$0	1	2	5	10	1	1	$1,360	$0	5	b		
2) Notification of Compliance Status	8	$0	$0	$0	1	8	5	40	4	2	$5,441	$0	5	b		
3) Semi-annual Compliance Report	20	$0	$0	$0	2	40	5	200	20	10	$27,206	$0	10	b		
								1,140	**114**	**57**						
Reporting Subtotal									**1,311**		**$155,072**	**$345,590**	**20**		**$234,375**	**$111,215**
4. Recordkeeping Requirements																
A. Read and Understand Rule Requirements	ncluded in 3a															
B. Implement Activities	NA															
C. Develop Record System	NA													c		
D. Record Information																
1) Records of Operating Parameter Values	20	$0	$0	$0	1	20	5	100	10	5	$13,603	$0	0	a		
2) Records of Startup, Shutdown, Malfunction	15	$0	$0	$0	1	15	5	75	8	4	$10,202	$0	0	a, j		
3) Records of Stack Tests	2	$0	$0	$0	1	2	5	10	1	1	$1,360	$0	0	a		
4) Records of Monitoring Device Calibrations	2	$0	$0	$0	1	2	5	10	1	1	$1,360	$0	0	a		
5) Records of All Compliance Reports Submitted	2	$0	$0	$0	2	4	5	20	2	1	$2,721	$0	0	a		
6) Records of Monthly Fuel Use	0.5	$0	$0	$0	12	6	5	30	3	2	$4,081	$0	0	a,g		
E. Personnel Training	40	$0	$0	$0	1	40	5	200	20	10	$27,206	$0	0	f		
F. Time for Audits	NA															
								445	**45**	**22**						
Recordkeeping Subtotal									**512**		**$60,533**	**$0**	**0**		**$0**	
								1,585	**159**	**79**						
Totals									**1,823**		**$215,605**	**$345,590**	**20**			

Assumptions

[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 large solid units are expected to determine compliance through stack testing and not fuel analysis

[f] For on-going 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/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.

[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] The number of units expected to require each type of parameter monitoring are taken from the CEDRI data, December 2020, and represent the reported data on units utilizing each type of monitoring.

[j] 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) (Re Existing Small and Limited Use Solid Fuel 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	(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)xE xG)	(M) Total Number of Responses per Year (E X G)	Footnotes	Annualized Capital/start-up O&M	Total Capital (Monitor Purchase)
1. Applications	NA															
2. Surveys and Studies	NA															
3. Reporting Requirements																
A. Familiarization with Rule Requirements	5	$0	$0	$0	1	5	6	32	3	2	$4,308	$0	0	a		
B. Required Activities																
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	45	272	27.2	13.6	$37,000	$101,003	0	c,i		
C. Create Information	NA															
D. Gather Information	NA															
E. Report Preparation																
1) Initial Notification that Source is Subject	2	$0	$0	$0	1	2	0	0	0	0	$0	$0	0	a		
2) Notification of Compliance Status	8	$0	$0	$0	1	8	0	0	0	0	$0	$0	0	c		
3) Biennial Compliance Report	5	$0	$0	$0	0.5	2.5	6	16	1.58	0.79	$2,154	$0	3	f		
4) Initial Report on results of Energy Audit	5	$0	$0	$0	1	5	0	0	0	0	$0	$0	0	c		
								320	**32**	**16**						
Reporting Subtotal									**367**		**$43,461**	**$101,003**	**4**		**$101,003**	**0**
4. Recordkeeping Requirements																
A. Familiarization with Rule Requirements	ncluded in 3a															
B. Implement Activities	NA															
C. Develop Record System	NA													e		
D. Record Information																
1) Records of All Notifications and Compliance Reports Submitted	2	$0	$0	$0	0.5	1	6	6	0.63	0.32	$862	$0	0	c		
2) 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	45	11	1.13	0.57	$1,542	$0	0	c		
E. Personnel Training	40	$0	$0	$0	1	40	3	120	12	6	$16,323	$0	0	h		
F. Time for Audits	NA															
								138	**14**	**6.88**						
Recordkeeping Subtotal									**158**		**$18,727**	**$0**	**0**		**$0**	
								457	**46**	**23**						
Totals									**526**		**$62,188**	**$101,003**	**4**			

Assumptions

[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.

Table 4.B.: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDD
New Small Solid Fuel 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	(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	Annualized Capital/start-up O&M	Total Capital (Monitor Purchase)
1. Applications	NA															
2. Surveys and Studies	NA															
3. Reporting Requirements																
A. Read and Understand Rule Requirements	40	$0	$0	$0	1	40	0.33	13	1	1	$1,814	$0	0	a		
B. Required Activities																
1. Biennial Tune-Up	12	$0	$2,228	$0	0.5	6	1	6	0.6	0.3	$816	$2,228	0	a		
C. Create Information	NA															
D. Gather Information	NA															
E. Report Preparation																
1) Initial Notification that Source is Subject	2	$0	$0	$0	1	2	0.33	1	0	0	$91	$0	0.33	a		
2) Notification of Compliance Status	8	$0	$0	$0	1	8	0.33	3	0	0	$363	$0	0.33	a		
3) Biennial Compliance Report	5	$0	$0	$0	0.5	2.5	0.33	0.8	0.08	0.04	$113	$0	0.17	d		
								24	**2**	**1**						
Reporting Subtotal									**27**		**$3,197**	**$2,228**	**1**		**$2,228**	**0**
4. Recordkeeping Requirements																
A. Read and Understand Rule Requirements	ncluded in 3a															
B. Implement Activities	NA															
C. Develop Record System	NA													b		
D. Record Information																
1) Records of All Notifications and Compliance Reports Submitted	2	$0	$0	$0	0.5	1	0.33	0	0.03	0.02	$45	$0	0	a		
2) Biennial Tune-Up Records	0.5	$0	$0	$0	0.5	0.25	1	0	0.03	0.01	$34	$0	0	a, d		
E. Personnel Training	40	$0	$0	$0	1	40	0.33	13	1	1	$1,814	$0	0	c		
F. Time for Audits	NA															
								13.9	**1.4**	**0.7**						
Recordkeeping Subtotal									**16**		**$1,893**	**$0**	**0**		**$0**	
								37	**4**	**2**						
Totals									**43**		**$5,090**	**$2,228**	**1**			

Assumptions

[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 5.B.: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (Renewa
Existing 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)xE xG]	(M) Total Number of Responses per Year (E X G)	Footnotes	Annualized Capital/start -up O&M	Total Capital (Monitor Purchase)
1. Applications	NA															
2. Surveys and Studies	NA															
3. Reporting Requirements																
A. Familiarization with Rule Requirements	10	$0	$0	$0	1	10	21	210	21	11	$28,566	$0	21	a		
B. Required Activities																
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. Initial Stack Test and Report (for PM)	12	$0	$5,000	$0	1	12	0	0	0	0	$0	$0	0	c,h		
3. Initial Stack Test and Report (for Hg)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	c		
4. Initial Stack Test and Report (for HCl)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	c		
5. Initial Stack Test and Report (for CO)	12	$0	$7,000	$0	1	12	0	0	0	0	$0	$0	0	c,i		
6. Annual Stack Test and Report (for PM)	12	$0	$5,000	$0	1	12	37	444	44	22	$60,397	$185,000	0	c,h,j		
7. Annual Stack Test and Report (for Hg)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	c,j		
8. Annual Stack Test and Report (for HCl)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	c,j		
9. Annual Stack Test and Report (for CO)	12	$0	$7,000	$0	1	12	37	444	44	22	$60,397	$259,000	0	c,j		
10. 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	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	37	2,220	222	111	$301,983	$177,600	0	c,g		
13. Annual Tune-up	12	$0	$2,875	$0	1	12	37	444	44	22	$60,397	$106,375	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	c		
Opacity																
a) initial	10	$0	$0	$43,100	1	10	0	0	0	0	$0	$0	0	c		
b) annual	10	$0	$0	$14,700	1	10	0	0	0	0	$0	$0	0	c		
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		
O2																
a) initial	10	$0	$0	$8,523	1	10	0	0	0	0	$0	$0	0	c,n		
b) annual	10	$0	$0	$1,436	1	10	37	370	37	19	$50,331	$53,132	0	c,n		
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,n		
b) annual	10	$0	$0	$5,600	1	10	1	10	1	0.5	$1,360	$5,600	0	c,n		
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	c,n		
b) annual	10	$0	$0	$9,700	1	10	0	0	0	0	$0	$0	0	c,n		
DIFF Monitor																
a) initial	10	$0	$0	$43,500	1	10	0	0	0	0	$0	$0	0	c,n		
b) annual	10	$0	$0	$9,700	1	10	0	0	0	0	$0	$0	0	c,n		
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	c,n		
b) annual	10	$0	$0	$9,700	1	10	0	0	0	0	$0	$0	0	c,n		
C. Create Information	NA															
D. Gather Information	NA															
E. Report Preparation																
1) Initial Notification that Source is Subject	2	$0	$0	$0	1	2	0	0	0	0	$0	$0	0	a		
2) Notification of Compliance Status	8	$0	$0	$0	1	8	0	0	0	0	$0	$0	0	c		
3) Initial Report on results of Energy Audit	5	$0	$0	$0	1	5	0	0	0	0	$0	$0	0	c		
4) Semi-annual Compliance Report	20	$0	$0	$0	2	40	21	840	84	42	$114,264	$0	42	c		
								4,982	**498**	**249**						
Reporting Subtotal									**5,729**		**$677,694**	**$786,707**	**42**		**$786,707**	**$0**
4. Recordkeeping Requirements																
A. Familiarization with Rule Requirements	Included in 3a															
B. Implement Activities	NA															
C. Develop Record System	NA													e		
D. Record Information																
1) Records of Operating Parameter Values	20	$0	$0	$0	1	20	37	740	74	37	$100,661	$0	0	c		
2) Records of Startup, Shutdown, Malfunction	15	$0	$0	$0	1	15	37	555	56	28	$75,496	$0	0	c,o		
3) Records of Stack Tests	2	$0	$0	$0	1	2	37	74	7	4	$10,066	$0	0	c		
4) Records of Monitoring Device Calibrations	2	$0	$0	$0	1	2	37	74	7	4	$10,066	$0	0	c		
5) Records of All Compliance Reports Submitted	2	$0	$0	$0	2	4	37	148	15	7	$20,132	$0	0	c		
6) Records of Monthly Fuel Use	0.5	$0	$0	$0	12	6	37	222	22	11	$30,198	$0	0	c		
E. Personnel Training	40	$0	$0	$0	1	40	11	420	42	21	$57,132	$0	0	k		
F. Time for Audits	NA															
								2,233	**223**	**112**						
Recordkeeping Subtotal									**2,568**		**$303,752**	**$0**	**0**		**$0**	
								7,215	**722**	**361**						
Totals									**8,297**		**$981,446**	**$786,707**	**42**			

Assumptions

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

[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] 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 liquid units are expected to determine compliance for Hg and HCl through fuel analysis not stack testing.

[h] Units not equipped with PM CPMS wil perform stack testing for PM.

[i] 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] The number of units expected to require each type of parameter monitoring are taken from the CEDRI data, December 2020, and represent the reported data on units utilizing each type of monitoring.

[o] 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 6.B.: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, subpart DDDDD) (Ren 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	Annualized Capital/start-up O&M	Total Capital (Monitor Purchase)
1. Applications	NA															
2. Surveys and Studies	NA															
3. Reporting Requirements																
A. Read and Understand Rule Requirements	40	$0	$0	$0	1	40	0	0	0	0	$0	$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			
2. Initial Stack Test and Report (for Hg)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0			
3. Initial Stack Test and Report (for HCl)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0			
4. Initial Stack Test and Report (for CO)	12	$0	$7,000	$0	1	12	0	0	0	0	$0	$0	0			
5. Annual Stack Test and Report (for PM)	12	$0	$5,000	$0	1	12	0	0	0	0	$0	$0	0			
6. Annual Stack Test and Report (for Hg)	12	$0	$8,000	$0	1	12	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			
8. Annual Stack Test and Report (for CO)	12	$0	$7,000	$0	1	12	0	0	0	0	$0	$0	0			
9. 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			
10. Initial Fuel Analysis for Mercury and HCL Content	5	$0	$400	$0	1	5	0	0	0	0	$0	$0	0			
11. Monthly Fuel Analysis for Mercury and HCL Content	5	$0	$400	$0	12	60	0	0	0	0	$0	$0	0			
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													0			
a) initial	10	$0	$0	$43,100	1	10	0	0	0	0	$0	$0	0			
b) annual	10	$0	$0	$14,700	1	10	0	0	0	0	$0	$0	0			
PM (only sources greater than 250 mmBtu/hr)																
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	0	$0	$0	0			
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	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			
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			
b) annual	10	$0	$0	$9,700	1	10	0	0	0	0	$0	$0	0			
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															
D. Gather Information	NA															
E. Report Preparation																
1) Initial Notification that Source is Subject	2	$0	$0	$0	1	2	0	0	0	0	$0	$0	0			
2) Notification of Compliance Status	8	$0	$0	$0	1	8	0	0	0	0	$0	$0	0			
3) Semi-annual Compliance Report	20	$0	$0	$0	2	40	0	0	0	0	$0	$0	0			
								0	**0**	**0**						
Reporting Subtotal									**0**		**$0**	**$0**	**0**		**$0**	**$0**
4. Recordkeeping Requirements																
A. Read and Understand Rule Requirements	ncluded in 3a															
B. Implement Activities	NA															
C. Develop Record System	NA															
D. Record Information																
1) Records of Operating Parameter Values	20	$0	$0	$0	1	20	0	0	0	0	$0	$0	0			
2) Records of Startup, Shutdown, Malfunction	15	$0	$0	$0	1	15	0	0	0	0	$0	$0	0			
3) Records of Stack Tests	2	$0	$0	$0	1	2	0	0	0	0	$0	$0	0			
4) Records of Monitoring Device Calibrations	2	$0	$0	$0	1	2	0	0	0	0	$0	$0	0			
5) Records of All Compliance Reports Submitted	2	$0	$0	$0	2	4	0	0	0	0	$0	$0	0			
6) Records of Monthly Fuel Use	0.5	$0	$0	$0	12	6	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															
								0	**0**	**0**						
Recordkeeping Subtotal									**0**		**$0**	**$0**	**0**		**$0**	
								0	**0**	**0**						
Totals									**0**		**$0**	**$0**	**0**			

Assumptions

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

Table 7.B.: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subp
Existing Small and Limited Use Liquid Fuel 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	(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)	Footnotes	Annualized Capital/start-up O&M	Total Capital (Monitor Purchase)
1. Applications	NA															
2. Surveys and Studies	NA															
3. Reporting Requirements																
A. Familiarization with Rule Requirements	5	$0	$0	$0	1	5	3	15	1	1	$1,989	$0	0	a		
B. Required Activities																
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	25	150	15.0	7.5	$20,404	$55,700	0	c, f, i		
C. Create Information	NA															
D. Gather Information	NA															
E. Report Preparation																
1) Initial Notification that Source is Subject	2	$0	$0	$0	1	2	0	0	0	0	$0	$0	0	a		
2) Notification of Compliance Status	8	$0	$0	$0	1	8	0	0	0	0	$0	$0	0	c		
3) Biennial Compliance Report	5	$0	$0	$0	0.5	2.5	3	7	0.7	0.4	$995	$0	1	c, f		
4) Initial Report on results of Energy Audit	5	$0	$0	$0	1	5	0	0	0	0	$0	$0	0	c		
Reporting Subtotal									**198**		**$23,388**	**$55,700**	**2**		**$55,700**	**0**
4. Recordkeeping Requirements																
A. Familiarization with Rule Requirements	ncluded in 3a															
B. Implement Activities	NA															
C. Develop Record System	NA													e		
D. Record Information																
and Compliance Reports Submitted	2	$0	$0	$0	0.5	1	3	3	0.3	0.1	$398	$0	0	c		
2) 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	25	6	0.6	0.3	$850	$0	0	c, f		
E. Personnel Training	40	$0	$0	$0	1	40	1.5	59	6	3	$7,958	$0	0	h		
F. Time for Audits	NA															
Recordkeeping Subtotal									**78**		**$9,206**	**$0**	**0**		**$0**	
Totals									**276**		**$32,594**	**$55,700**	**2**			

Assumptions

[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 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] 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.

Table 8.B.: Annual Respondent Burden and Cost -- NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD)
New Small Liquid Fuel 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	(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)xEx G)	(M) Total Number of Responses per Year (E X G)	Footnotes	Annualized Capital/start -up O&M	Total Capital (Monitor Purchase)
1. Applications	NA															
2. Surveys and Studies	NA															
3. Reporting Requirements																
A. Read and Understand Rule Requirements	40	$0	$0	$0	1	40	0	0	0	0	$0	$0	0	a		
B. Required Activities																
1. 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																
1) Initial Notification that Source is Subject	2	$0	$0	$0	1	2	0	0	0	0	$0	$0	0			
2) Notification of Compliance Status	8	$0	$0	$0	1	8	0	0	0	0	$0	$0	0			
3) Biennial Compliance Report	5	$0	$0	$0	0.5	2.5	0	0	0	0	$0	$0	0			
Reporting Subtotal									**0**		**0**	**0**	**0**		**$0**	**0**
4. Recordkeeping Requirements																
A. Read and Understand Rule Requirements	ncluded in 3a															
B. Implement Activities	NA															
C. Develop Record System	NA															
D. Record Information																
1) Records of All Notifications and Compliance Reports Submitted	2	$0	$0	$0	0.5	1	0	0	0	0	$0	$0	0			
2) 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		$0	
Totals									**0**		**$0**	**$0**	**0**			

Assumptions

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

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 Large Gas 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)xEx G]	(M) Total Number of Responses per Year (E X G)	Footnotes	Annualized Capital/start-up O&M	Total Capital (Monitor Purchase)
1. Applications	NA															
2. Surveys and Studies	NA															
3. Reporting Requirements																
A. Familiarization with Rule Requirements	10	$0	$0	$0	1	10	760	7,603	760	380	$1,034,270	$0	0	a		
B. Required Activities																
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. Initial Stack Test and Report (for PM)	12	$0	$5,000	$0	1	12	0	0	0	0	$0	$0	0	c,j,k		
3. Initial Stack Test and Report (for Hg)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	c,j,k		
4. Initial Stack Test and Report (for HCl)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	c,j,k		
5. Initial Stack Test and Report (for CO)	12	$0	$7,000	$0	1	12	0	0	0	0	$0	$0	0	c,j,k		
6. Annual Stack Test and Report (for PM)	12	$0	$5,000	$0	1	12	0	0	0	0	$0	$0	0	c,j,k		
7. Annual Stack Test and Report (for Hg)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	c,j,k		
8. Annual Stack Test and Report (for HCl)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	c,j,k		
9. Annual Stack Test and Report (for CO)	12	$0	$7,000	$0	1	12	0	0	0	0	$0	$0	0	c,j,k		
10. 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	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. Continuous Parameter Monitoring														o		
Establish Site-specific monitoring plan (all)	40	$0		$0	1	40	0	0	0	0	$0	$0	0	c		
Opacity																
a) initial	10	$0	$0	$43,100	1	10	0	0	0	0	$0	$0	0	c,h		
b) annual	10	$0	$0	$14,700	1	10	0	0	0	0	$0	$0	0	c,h		
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,h		
b) annual	10	$0	$0	$56,100	1	10	0	0	0	0	$0	$0	0	c,h		
O2																
a) initial	10	$0	$0	$8,523	1	10	0	0	0	0	$0	$0	0	c,o		
b) annual	10	$0	$0	$1,436	1	10	0	0	0	0	$0	$0	0	c,o		
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,o		
b) annual	10	$0	$0	$5,600	1	10	6	60	6	3	$8,162	$33,600	0	c,o		
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	c,o		
b) annual	10	$0	$0	$9,700	1	10	0	0	0	0	$0	$0	0	c,o		
14. Annual Tune-up	12	$0	$2,875	$0	1	12	6,439	77,272	7,727	3,864	$10,511,194	$18,513,083	0	c,k		
15. Mercury Fuel Spec Analysis	5	$0	$200	$0	12	60	413	24,780	2,478	1,239	$3,370,786	$991,200	0	c,i		
C. Create Information	NA															
D. Gather Information	NA															
E. Report Preparation																
1) Initial Notification that Source is Subject	2	$0	$0	$0	1	2	0	0	0	0	$0	$0	0	a		
2) Notification of Compliance Status	8	$0	$0	$0	1	8	0	0	0.0	0.0	$0	$0	0	c		
3) Initial Report on results of Energy Audit	5	$0	$0	$0	1	5	0	0	0	0	$0	$0	0	c		
4) Annual Compliance Report	20	$0	$0	$0	1	20	760	15,200	1,520	760	$2,067,633	$0	760	c, l		
5) Semi-annual Compliance Report	20	$0	$0	$0	2	40	0	0	0	0	$0	$0	0	c, l		
6) Notification of Alternative Fuel Use	5	$0	$0	$0	1	5	976	4,880	488	244	$663,819	$0	976	c,m		
								129,795	12,980	6,490						
Reporting Subtotal									**149,265**		**$17,655,865**	**$19,537,883**	**1,736**		**$19,537,883**	**$0**
4. Recordkeeping Requirements																
A. Familiarization with Rule Requirements	ncluded in 3a															
B. Implement Activities	NA															
C. Develop Record System	NA													e		
D. Record Information																
1) Records of Operating Parameter Values	20	$0	$0	$0	1	20	0	0	0	0	$0	$0	0	c		
2) Records of Startup, Shutdown, Malfunction	15	$0	$0	$0	1	15	0	0	0	0	$0	$0	0	c,p		
3) Records of Stack Tests	2	$0	$0	$0	1	2	0	0	0	0	$0	$0	0	c		
4) Records of Monitoring Device Calibrations	2	$0	$0	$0	1	2	0	0	0	0	$0	$0	0	c		
5) Records of All Annual Compliance Reports Submitted	2	$0	$0	$0	1	2	760	1,520	152	76	$206,763	$0	0	c, l		
6) Records of All Semi-Annual Compliance Reports Submitted	2	$0	$0	$0	2	4	0	0	0	0	$0	$0	0	c, l		
7) Records of Monthly Fuel Use	0.5	$0	$0	$0	12	6	0	0	0	0	$0	$0	0	c		
8) Records of Annual Tune-up	0.25	$0	$0	$0	1	0.25	6,439	1,610	161	80	$218,983	$0	0	c		
E. Personnel Training	40	$0	$0	$0	1	40	380	15,200	1,520	760	$2,067,633	$0	0	n		
F. Time for Audits	NA															
								18,330	1,833	916						
Recordkeeping Subtotal									**21,079**		**$2,493,380**	**$0**				
								148,125	**14,813**	**7,406**						
Totals									**170,344**		**$20,149,244**	**$19,537,883**	**1,736**			

Assumptions

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

[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.

[h] Gas units are exempt from PM CPMS and opacity monitoring.

[i] Number based on units which reported firing fuels other than natural or refinery gas.

[j] The units firing other process gases other than natural gas, refinery gases or other on-spec gas 1 fuels have limits for PM, HCl, 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 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] Only facilities with process gas (gas 2 units) subject to numerical emission limits are expected to be required to submit semi-annual compliance reports. Natural gas and refinery gas units are required to submit reports annually.

[m] Number based on 15.8% 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."

[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.

Table 10.B.: Annual Respondent Burden and Cost – NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD) (R New Large Gas 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)xE xG]	(M) Total Number of Responses per Year (E X G)	Footnotes	Annualized Capital/start-up O&M	Total Capital (Monitor Purchase)
1. Applications	NA															
2. Surveys and Studies	NA															
3. Reporting Requirements																
A. Read and Understand Rule Requirements	40	$0	$0	$0	1	40	33	1,333	133	67	$181,371	$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	e		
2. Initial Stack Test and Report (for Hg)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	e		
3. Initial Stack Test and Report (for HCl)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	e		
4. Initial Stack Test and Report (for CO)	12	$0	$7,000	$0	1	12	0	0	0	0	$0	$0	0	e		
6. Annual Stack Test and Report (for PM)	12	$0	$5,000	$0	1	12	0	0	0	0	$0	$0	0	a		
7. Annual Stack Test and Report (for Hg)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	a		
8. Annual Stack Test and Report (for HCl)	12	$0	$8,000	$0	1	12	0	0	0	0	$0	$0	0	a		
9. 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 HCl)	24	$0	$16,000	$0	1	24	0	0	0	0	$0	$0	0	a,e		
12. Initial Fuel Analysis for Mercury and HCL Content	5	$0	$400	$0	1	5	0	0	0	0	$0	$0	0	a,f		
13. Monthly Fuel Analysis for Mercury and HCL Content	5	$0	$400	$0	12	60	0	0	0	0	$0	$0	0	a,f		
14. Continuous Parameter Monitoring														j		
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																
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)																
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	$426,041	$750,375	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															
D. Gather Information	NA															
E. Report Preparation																
1) Initial Notification that Source is Subject	2	$0	$0	$0	1	2	33	67	6.7	3.3	$9,069	$0	33	a		
2) Notification of Compliance Status	8	$0	$0	$0	1	8	33	267	26.7	13.3	$36,274	$0	33	a		
3) Annual Compliance Report	20	$0	$0	$0	1	20	33	667	67	33	$90,686	$0	33	a, e		
4) Semi-annual Compliance Report	20	$0	$0	$0	2	40	0	0	0	0	$0	$0	0	a, e	$750,375	$0
5) Notification of Alternative Fuel Use	5	$0	$0	$0	1	5	0	0	0	0	$0	$0	0	i		
								5,465	**547**	**273**						
Reporting Subtotal									**6,285**		**$743,441**	**$750,375**	**100**			
4. Recordkeeping Requirements																
A. Read and Understand Rule Requirements	ncluded in 3a															
B. Implement Activities	NA															
C. Develop Record System	NA													d		
D. Record Information																
1) Records of Operating Parameter Values	20	$0	$0	$0	1	20	0	0	0	0	$0	$0	0	a		
2) 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		
4) 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	133	13.3	6.7	$18,137	$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	$213,021	$0	0	a		
8) Records of Annual Tune-up	0.25	$0	$0	$0	1	0.25	261	65	6.53	3.26	$8,876	$0	261	c		
E. Personnel Training	40	$0	$0	$0	1	40	33	1,333	133	67	$181,371	$0	0	g		
F. Time for Audits	NA															
								3,098	**310**	**155**						
Recordkeeping Subtotal									**3,563**		**$421,405**	**$0**				
								8,563	**856**	**428**						
Totals									**9,848**		**$1,164,846**	**$750,375**	**100**			

Assumptions

[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] 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 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.

[f] Process gas units are expected to demonstrate compliance with a stack test instead of a fuel analysis. However no new process gas units were estimated.

[g] For on-going 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."

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)
Existing Small and Limited Use Gas Fuel Units

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 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)xEx G)	(M) Total Number of Responses per Year (E X G)	Footnotes	Annualized Capital/start-up O&M	Total Capital (Monitor Purchase)
1. Applications	NA																
2. Surveys and Studies	NA																
3. Reporting Requirements																	
A. Familiarization with Rule Requirements	5		$0	$0	$0	1	5	1,150	5,750	575	288	$782,164	$0	0	a		
B. Required Activities																	
1. 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		
2. Biennial Tune-Up	12		$0	$1,580	$0	0.5	6	9,789	58,734	5,873	2,937	$7,989,498	$15,466,620	0	c,f,i		
C. Create Information	NA																
D. Gather Information	NA																
E. Report Preparation																	
1) Initial Notification that Source is Subject	2		$0	$0	$0	1	2	0	0	0	0	$0	$0	0	a		
2) Notification of Compliance Status	8		$0	$0	$0	1	8	0	0	0.00	0.00	$0	$0	0	c		
3) Biennial Compliance Report	5		$0	$0	$0	0.5	2.5	1,150	2,875	288	144	$391,082	$0	575	c,f		
4) Initial Report on results of Energy Audit	5		$0	$0	$0	1	5	0	0	0.00	0.00	$0	$0	0	c		
									67,359	**6,736**	**3,368**						
Reporting Subtotal										**77,463**		**$9,162,744**	**$15,466,620**	**575**		**$15,466,620**	**0**
4. Recordkeeping Requirements																	
A. Familiarization with Rule Requirements	ncluded in 3a																
B. Implement Activities	NA																
C. Develop Record System	NA														e		
D. Record Information																	
1) Records of All Notifications and Compliance Reports Submitted	2	0	$0	$0	$0	0.5	1	1,150	1,150	115.00	58	$156,433	$0	0	c		
2) 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	9,789	2,447	245	122	$332,896	$0	0	c,f		
E. Personnel Training	40		$0	$0	$0	1	40	575	23,000	2,300	1,150	$3,128,656	$0	0	h		
F. Time for Audits	NA																
									26,597	**2,660**	**1,330**						
Recordkeeping Subtotal										**30,587**		**$3,617,984**	**$0**	**0**		**$0**	
									93,956	**9,396**	**4,698**						
Totals										**108,050**		**$12,780,728**	**$15,466,620**	**575**			

Assumptions

[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 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] 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.

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

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 G)	(I) Clerical Hours per Year @ $50.88 (H X 0.1)	(J) Management Hours per Year @ $127.43 (H X .05)	(J) Emission Testing Contractor Hours per Year @ $80 (BxDxF)	(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	Annualized Capital/start-up O&M	Total Capital (Monitor Purchase)
1. Applications	NA																	
2. Surveys and Studies	NA																	
3. Reporting Requirements																		
A. Read and Understand Rule Requirements	40		$0	$0	$0	1	40	41	1,640	164	82	0	$223,087	$0	0	a		
B. Required Activities																		
1. Biennial Tune-Up	12		$0	$2,228	$0	0.5	6	326	1,956	195.6	97.8		$266,072	$726,328	0	a,e,f		
C. Create Information	NA																	
D. Gather Information	NA																	
E. Report Preparation																		
1) Initial Notification that Source is Subject	2		$0	$0	$0	1	2	41	82	8.2	4.1	0	$11,154	$0	41	a		
2) Notification of Compliance Status	8		$0	$0	$0	1	8	41	328	32.8	16.4	0	$44,617	$0	41	a		
3) Biennial Compliance Report	5		$0	$0	$0	0.5	2.5	41	103	10.3	5.1	0	$13,943	$0	21	d,e		
									4,109	**411**	**205**							
Reporting Subtotal										**4,725**		**0**	**558,873**	**726,328**	**103**		**$726,328**	**0**
4. Recordkeeping Requirements																		
A. Read and Understand Rule Requirements	Included in 3a																	
B. Implement Activities	NA																	
C. Develop Record System	NA															b		
D. Record Information																		
1) Records of All Notifications and Compliance Reports Submitted	2	0	$0	$0	$0	0.5	1	41	41	4.1	2.1	0	$5,577	$0	0	a		
2) Biennial Tune-Up Records	0.5		$0	$0	$0	0.5	0.25	326	82	8.2	4.1	0	$11,086	$0	0	a,e,f		
E. Personnel Training	40		$0	$0	$0	1	40	41	1,640	164	82		$223,087	$0	0	c		
F. Time for Audits	NA																	
									1,763	**176**	**88**							
Recordkeeping Subtotal										**2,027**		**0**	**$239,750**	**$0**	**0**		**$0**	
									5,871	**587**	**294**							
Totals										**6,752**		**0**	**$798,623**	**$726,328**	**103**			

Assumptions

[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.

Capital/Startup vs. Operation and Maintenance (O&M) Costs				
(A) Boiler Type	(B) Number of Respondents (facilities)	(C) Annual Capital/Startup Cost	(D) Annual O&M	(E) Annual O&M and Annualized Capital Costs
Existing Large Solid Units	282	$0	$32,097,783	$32,097,783
New Large Solid Units	5	$111,215	$234,375	$345,590
Existing Small and Limited Use Solid Units	6	$0	$101,003	$101,003
New Small Solid Units	0	$0	$2,228	$2,228
Existing Large Liquid Units	21	$0	$786,707	$786,707
New Large Liquid Units	0	$0	$0	$0
Existing Small and Limited Use Liquid Units	3	$0	$55,700	$55,700
New Small Liquid Units	0	$0	$0	$0
Existing Large Gaseous Units	760	$0	$19,537,883	$19,537,883
New Large Gaseous Units	33	$0	$750,375	$750,375
Existing Small and Limited Use Gaseous Units	1,150	$0	$15,466,620	$15,466,620
New Small Gaseous Units	41	$0	$726,328	$726,328
Total	2,302	$111,215	$69,759,002	$69,870,217
Total (Rounded)	2,300	$111,000	$69,800,000	$69,900,000