ICR Summary Information	
Hours per Response	38
Number of Respondents	130
Total Estimated Burden Hours	16,100
Total Estimated Costs	$10,000,000
Annualized Capital O&M	$8,020,000
Total Annual Responses	426

Table 1: Annual Respondent Burden and Cost – NESHAP for Petroleum Refineries: Catalytic Cracking Uni

Burden item	(A) Person-hours per occurrence	(B) No. of occurrences per respondent per year	(C) Person-hours per respondent per year (C=AxB)	(D) Respondents per year [a]
1. Applications	N/A			
2. Survey and Studies	N/A			
3. Reporting Requirements				
A. Familiarize with rule requirements [c]	2	1	2	130
B. Required activities				
Initial Performance test [d,e]	40	1	40	0
PM Performance Test (internal)[f]	40	1	40	45.9
HCN Performance Test (internal) [d,e,g]	40	1	40	0
Operating, maintenance, and monitoring plan [d]	40	1	40	0
RATA for units using CEMs [h]	40	1	40	60
C. Create information	See 3B			
D. Gather existing information	See 3B			
E. Write report				
Notification of construction/ reconstruction	2	1	2	0
Notification of actual startup	2	1	2	0
Notification of special compliance requirements	N/A			
Notification of performance test [d,e]	2	1	2	0
Notification of PM performance test [f]	2	1	2	45.9
Notification of HCN performance test [g]	2	1	2	0
Notification of compliance status [d]	4	1	4	0
Extended compliance request	N/A			
Report of performance test [d]	See 3B			
Semiannual compliance reports [i]	10	2	20	130
Subtotal for Reporting Requirements				
4. Recordkeeping Requirements				
A. Familiarize with rule requirements	See 3A			
B. Plan activities	See 3B			
C. Implement activities	See 3B			
D. Develop record system [j]	N/A			
E. Time to enter information [k, l]				
Records of operations [m]	1	52	52	130
F. Time to train personnel [d, n]	4	1	4	0
G. Time to adjust existing ways to comply with previously applicable requirements	N/A			
H. Time to transmit or disclose information [m]	0.25	1	0.25	130
I. Time for audits	N/A			
Subtotal for Recordkeeping Requirements				

TOTAL LABOR BURDEN AND COST (rounded)[o]

TOTAL CAPITAL AND O&M COSTS (rounded)[o]

GRAND TOTAL (rounded)[o]

Assumptions:

[a] We have determined that 130 major petroleum refineries will have one or more affected facilities subject to the standard. Thi facilities are expected over the next 3 years.

[b] This ICR uses the following labor rates: Managerial $157.61 ($75.05 + 110%); Technical $123.94 ($59.02 + 110%); and Cle States Department of Labor, Bureau of Labor Statistics, September 2021, "Table 2. Civilian Workers, by occupational and indu compensation." The rates have been increased by 110 percent to account for varying industry wage rates and the additional ove and benefits, including business expenses associated with hiring, training, and equipping their employees.

[c] Assumed 130 facilities will refamiliarize themselves with the Subpart UUU rule during the upcoming 3-year ICR period.

[d] We have assumed that this activity is a one-time activity that applies only to new sources.

[e] We have assumed that this activity has already occurred for existing sources.

[f] The 2015 final rule requires catalytic cracking unit catalyst regeneration to conduct EPA Reference Method (M5) PM testing compliance option and the PM emissions rate during the most recent test is greater than 0.8 g PM/kg coke burn-off. For units i that 10 percent of sources will require annual testing. There are 106 FCCUs that will test over the 3 years so each year, approxi years + 106 × 0.1 = 45.9 tests/year.

[g] The 2015 final rule required each catalytic cracking unit to conduct a one-time EPA Reference Method 320 test for HCN by Therefore, it is assumed that this activity applies only to new units.

[h] We assume that the burdens associated with RATA testing are roughly equal to those for a performance test (excluding the ad respondents with 231 SRU units (2.41 units/respondent). There are 25 respondents with SRUs using CEMs. Therefore, the nun

[i] We have assumed that all sources would be submitting semiannual compliance reports.

[j] We have assumed that these sources will have the record system in place to monitor operations.

[k] We have assumed that depending on the compliance option for the affected facility (i.e., catalytic cracking unit, sulfur recove size of the catalytic cracking unit and control device used (e.g., wet scrubber, electrostatic precipitator and thermal incinerators monitoring systems and/or continuous parameter monitoring, or choose an alternative option for parameter monitoring.

[l] We have assumed that all respondents would have to keep records of their operations according to the operation and maintena

[m] We have assumed that it will take each respondent approximately one hour to record data per week (52 weeks) and 15 minut

[n] These costs reflect the one-time engineering evaluation and personnel training costs relative to the catalytic reforming unit cat rule. Therefore, it is assumed that this activity now applies only to new units.

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

its, Catalytic Reforming Units, and Sulfur Recovery Units (40 CFR Part 63, Subpart UUU) (Renewal)

123.94 157.61 62.52

(E)	(F)	(G)	(H)
Technical person-hours per year (E=CxD)	**Management person-hours per year (Ex0.05)**	**Clerical person- hours per year (Ex0.1)**	**Total Cost per Year $[b]**
260	13.00	26.00	$35,899
0	0	0	$0
1837.33	91.87	183.73	$253,685
0.0	0.0	0.0	$0
0	0	0	$0
2406	120	241	$332,237
0	0	0	$0
0	0	0	$0
0	0.00	0.00	$0
92	5	9	$12,684
0	0	0	$0
0	0	0	$0
2600	130	260	$358,989
8,275			**$993,494**
6760	338	676	$933,370
0	0	0	$0
	0		
32.5	1.63	3.25	$3,459
7,811			**$936,829**

Type of affected unit	Number of respondents	Number of Units
FCCU	92	106
CRU	104	138
SRU	96	231

Total 475

Note: We estimate that th

16,100	**$1,930,000**
	$8,020,000
	$10,000,000

37.8 hr/response

s includes 92 sources with 106 FCCU. No new or reconstructed

rical $62.52 ($29.77 + 110%). These rates are from the United
ıstry group." The rates are from column 1, "Total
:rhead business costs of employing workers beyond their wages

every 5 years, unless the unit is subject to the "NSPS J"
ı excess of that rate, testing is required annually. It was assumed
mately 45.9 performance tests will be conducted (106 units / 3

August 1, 2017, or within 150 days of startup of a new unit.

lvance notice requirements). We also assume that there are 96
ıber of SRUs using CEMs is 25 x 2.4 = 60 (rounded).

:ry units, and by-pass lines) selected by the respondent and the
), sources are required to either install continuous opacity

ance plan.
es to transmit it semiannually.

:alyst regeneration operational changes made in the 2015 final

Number of Respondents using CEMs	Number of units using CEMs
-	-
-	-
25	60

ere are 130 refineries (major sources) with 475 units. This includes 92 sources with 106 FCCU units, 104 sources with 138 CRU

J units, and 96 sources with 231 SRU units. Of sources with SRU units, we assume 25 sources are using CEMS on 60 un

ıits.

Table 2: Average Annual EPA Burden and Cost – NESHAP for Petroleum Refineries: Catalytic Crack

Activity	(A) Hours per occurrence	(B) Number of occurrence per plant-year	(C) Hours per plant per year (C=AxB)
Report Review			
Notification of construction/reconstruction	N/A		
Notification of actual startup	N/A		
Notification of special compliance requirements	N/A		
Notification of performance test [b]	2	1	2
Notification of PM performance test [c]	2	1	2
Notification of HCN performance test [d]	2	1	2
Notification of compliance status [b]	2	1	2
Review of operation, maintenance, and monitoring plan [b]	4	1	4
Review of repeat performance test report	8	1	8
Review of RATA for CEMS [e]	8	1	8
Review of compliance report	N/A		
Review of semiannual compliance reports [f]	2	2	4
Review of NESHAP waiver application	4	1	4
TOTAL ANNUAL BURDEN AND COST (rounded)[g]			

Assumptions:

[a] This cost is based on the following labor rates: Managerial rate of $70.56 (GS-13, Step 5, $44.10 +60%), Te 6, Step 3, $17.71 + 60%). These rates are from the Office of Personnel Management (OPM), 2022 General Sch percent to account for the benefit packages available to government employees.

[b] We have assumed that this activity is a one-time activity that applies only to new sources.

[c] The 2015 final rule requires catalytic cracking unit catalyst regeneration to conduct EPA Reference Method (M option and the PM emissions rate during the most recent test is greater than 0.8 g PM/kg coke burn-off. For uni sources will require annual testing. There are 106 FCCUs that will test over the 3 years so each year, approxim tests/year.

[d] The 2015 final rule required each catalytic cracking unit to conduct a one-time EPA Reference Method 320 t it is assumed that this activity applies only to new units.

[e] We assume that the burdens associated with review of RATA testing are roughly equal to those for review of a (2.41 units/respondent). There are 25 respondents with SRUs using CEMs. Therefore, the number of SRUs usi

[f] We have assumed that all sources would be submitting semiannual compliance reports.

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

ing Units, Catalytic Reforming Units, and Sulfur Recovery Units (40 CFR Part 63, Subpart UUU) (Renewal)

52.37 70.56 28.34

(D)	(E)	(F)	(G)	(H)
Plants per year	**Technical person-hours per year (E=CxD)**	**Management person-hours per year (Ex0.05)**	**Clerical person-hours per year (Ex0.1)**	**Total Cost per Year $[a]**
0	0	0	0	$0
45.9	91.87	4.59	9.19	$5,395.51
0	0	0	0	$0
0	0	0	0	$0
0	0	0	0	$0
0	0	0	0	$0
60	480	24	48	$28,191.36
130	520	26	52	$30,540.64
0	0	0	0	$0
	1,260			**$64,100**

Type of affected unit
FCCU
CRU
SRU

chnical rate of $52.37 (GS-12, Step 1, $32.73 + 60%), and Clerical rate of $28.34 (GS-
ıedule, which excludes locality rates of pay. The rates have been increased by 60

M5) PM testing every 5 years, unless the unit is subject to the “NSPS J” compliance
its in excess of that rate, testing is required annually. It was assumed that 10 percent of
ately 45.9 performance tests will be conducted (106 units / 3 years + 106 × 0.1 = 45.9

est for HCN by August 1, 2017, or within 150 days of startup of a new unit. Therefore,

a performance test. We also assume that there are 96 respondents with 231 SRU units
ng CEMs is 25 x 2.4 = 60 (rounded).

Number of respondents	Number of Units
92	106
104	138
96	231

Capital/Startup vs. Operation and Maintenance			
(A)	**(B)**	**(C)**	**(D)**
Continuous Monitoring Device	**Capital/Startup Cost for One Respondent**	**Number of New Respondents**	**Total Capital/Startup Cost, (B X C)**
COMS (FCCUs) [a]	$95,700	0	$0
CPMS (FCCUs) [b]	$18,900	0	$0
CPMS (CRUs) [c]	$0	0	$0
CPMS (SRUs) [d]	$74,000	0	$0
CEMS (SRUs) [e]	$150,000	0	$0
PM Performance Test (outsourced) [f]	$0	0	$0
HCN Performance Test (outsourced) [g]	$0	0	$0
Totals (rounded) [h]			**$0**

[a] COMS - continuous opacity monitoring system. We assume 25% of the 92 sources with FCCUs are using C

[b] CPMS - continuous parametric monitoring system. We assume the other 75% of the 92 sources with FCCU

[c] We estimate that there are 138 CRUs using CPMS for monitoring, with an O&M cost of $17,940 per CPMS

[d] We assume 74% of the 96 sources with SRUs are using CPMS (.74 * 96 = 71).

[e] CEMS – continuous emission monitoring system. We assume 25 sources with SRU units are using CEMS o

[f] The 2015 final rule amendments required facilities with FCCU to conduct EPA Reference Method (M5) PM (i.e., the fixed 20 percent opacity operating limit compliance alternative), and the PM emissions rate during th case the testing frequency will be annually. It was assumed that approximately 10% of sources will require an of 45.9 units per year will need to have a PM performance test (106 units/3 years + 106 × 0.1 = 45.9). We ass test.

[g] The 2015 final rule amendments required a one-time performance test for HCN for catalytic cracking unit ca new unit. Therefore, it is assumed that this activity applies only to new units. We assume it costs $10,000 per

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

(O&M) Costs

(E)	(F)	(G)
Annual O&M Costs for One Respondent	**Number of Respondents with O&M**	**Total O&M, (E X F)**
$28,600	23	$657,800
$25,350	69	$1,749,150
$17,940	138	$2,475,720
$26,000	71	$1,846,000
$34,840	25	$871,000
$9,200	45.9	$422,280
$10,000	0	$0
		$8,020,000

$8,020,000

OMS (0.25 * 92 = 23).

s are using CMPS (0.75 * 92 = 69).

.

n 60 units.

testing every 5 years, unless the “NSPS J” compliance option is used
ne most recent test is greater than 0.8 g PM/kg coke burn-off, in which
nual testing. In the upcoming 3-year ICR period, we assume that a total
ume it costs $9,200 per unit to conduct a EPA Method 5 performance

atalyst regeneration by August 1, 2017, or within 150 days of startup of a
unit to conduct a EPA Method 320 performance test.

Total Annual Responses				
(A)	(B)	(C)	(D)	(E)
Information Collection Activity	Number of Respondents	Number of Responses	Number of Existing Respondents That Keep Records But Do Not Submit Reports	Total Annual Responses E=(BxC)+D
Notification of particulate matter performance test [a,c]	45.9	1.15	0	52.79
Notification of HCN performance test [b,c]	0	1.15	0	0
Particulate matter performance test reports [a,c]	45.9	1.15	0	52.79
HCN performance test reports [b,c]	0	1.15	0	0
Notification of performance test [d]	0	1	0	0
Semiannual compliance report	130	2	0	260
Relative accuracy test audits for units using CEMs [e]	25	2.41	0	60
			Total	**426**

[a] The 2015 final rule requires catalytic cracking unit catalyst regeneration to conduct EPA Reference Method (M5) PM testing every 5 years, unless the unit is subject to the "NSPS J" compliance option and the PM emissions rate during the most recent test is greater than 0.8 g PM/kg coke burn-off. For units in excess of that rate, testing is required annually. It was assumed that 10 percent of sources will require annual testing. There are 106 FCCUs that will test over the 3 years so each year, approximately 45.9 performance tests will be conducted (106 units / 3 years + 106 × 0.1 = 45.9 tests/year.

[b] The 2015 final rule required each catalytic cracking unit to conduct a one-time EPA Reference Method 320 test for HCN by August 1, 2017, or within 150 days of startup of a new unit. Therefore, it is assumed that this activity applies only to new units.

[c] There are approximately 106 catalytic cracking units at 92 facilities, so each facility would report 1.15 responses per year, i.e., 106 units / 92 facilities = 1.15 responses/facility.

[d] We have assumed that this activity is a one-time activity that applies only to new sources.

[e] There are approximately 231 SRU at 96 facilities, so each facility would report 2.41 responses per year, i.e., 231 units / 96 facilities = 2.41 responses/facility. We assume 25 sources with SRU units are using CEMS.

Number of Respondents				
	Respondents That Submit Reports		Respondents That Do Not Submit Any Reports	
	(A)	(B)	(C)	(D)
Year	Number of New Respondents [a]	Number of Existing Respondents	Number of Existing Respondents that keep records but do not submit reports	Number of Existing Respondents That Are Also New Respondents
1	0	130	0	0
2	0	130	0	0
3	0	130	0	0
Average	0	130	0	0

[a] New respondents include sources with constructed and reconstructed affected facilities.

(E)
Number of Respondents (E=A+B+C-D)
130
130
130
130