

**SUPPORTING STATEMENT
ENVIRONMENTAL PROTECTION AGENCY
NSPS for Petroleum Refineries for which Construction, Reconstruction, or Modification
Commenced after May 14, 2007(40 CFR part 60, subpart Ja) (Final Rule)**

1. Identification of the Information Collection

1(a) Title of the Information collection

NSPS for Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced after May 14, 2007(40 CFR part 60, subpart Ja). This is a revision of an existing information collection request (ICR); the OMB Control Number is 2060-0602 and the EPA tracking number is 2263.04.

1(b) Short Characterization/Abstract

The EPA is revising 40 CFR part 60, subpart Ja as it applies to process heaters that are constructed, reconstructed, or modified after May 14, 2007 and flares that are constructed, reconstructed, or modified after June 24, 2008. Emissions limitations, which include hydrogen sulfide (H₂S) concentration limits, will be used to control emissions of nitrogen oxides (NO_x) and sulfur dioxide (SO₂). Other standards will apply to flaring of fuel gases, which will reduce emissions of NO_x, SO₂, carbon monoxide (CO), and volatile organic compounds (VOC). These standards will require plants to conduct an analysis of any exceedance or discharge of SO₂ emissions that exceeds 500 pounds in 24 hours or a discharge to a flare exceeding 500,000 standard cubic feet in 24 hours above the baseline flow to the flare. Plants will be required to monitor the sulfur content and the flow to an affected flare to determine if they exceed these thresholds. Plants will also be required to prepare written plans to describe the flare, identify the process units connected to the flare, and describe methods to minimize emissions from planned startup and shutdown of process units.

Plants will be required to use continuous monitoring systems (CMS) or continuous emissions monitoring systems (CEMS), depending on the type and size of unit, pollutant, and control device. Alternative monitoring options are included for small process heaters and fuel gases with intrinsically low H₂S concentrations. In general, all NSPS recordkeeping and reporting requirements for initial notifications, performance test reports, reports of performance evaluations, and periodic reports of excess emissions will apply. Records of certain information listed in the rule will also be required to demonstrate conformance with specific rule requirements.

The proposed rule ICR for this subpart (2263.02) included estimates of the monitoring, recordkeeping, and reporting burden for affected sources at 18 plants, including process units and flares. This ICR estimates burden for 382 additional flares expected to become affected facilities at 132 additional refineries over the first three years (for a total of 400 affected flares at 150 refineries over the first three years).

2. Need for and Use of the Collection

2(a) Need/Authority for the Collection

The EPA is charged under Section 111 of the Clean Air Act (CAA), as amended, to establish standards of performance for new stationary sources that reflect:

“. . . application of the best technological system of continuous emissions reduction which (taking into consideration the cost of achieving such emissions reduction, or any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.” Section 111(a)(1).

The Agency refers to this charge as selecting the best demonstrated technology. Section 111 also requires that the Administrator review and, if appropriate, revise such standards every eight years. In the Administrator’s judgment, particulate matter, carbon monoxide, nitrogen oxides, and sulfur oxides emissions from petroleum refineries cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare. Therefore, NSPS were promulgated for this source category at 40 CFR part 60, subpart J and 40 CFR part 60, subpart Ja, and those standards are being revised.

2(b) Practical Utility/Users of the Data

The required notifications are used to inform the Agency or delegated authority when a source becomes subject to the standard. The reviewing authority may then inspect the source to check if the pollution control devices are properly installed and operated and that the standard is being met. Performance test reports are needed as these are the Agency’s record of a source’s initial capability to comply with the emission standard, and/or note the operating conditions (*e.g.*, maximum hydrogen sulfide levels in the fuel gas) under which compliance was achieved. The semiannual reports are used for problem identification, as a check on source operation and maintenance, and for compliance determinations.

The EPA reduced the reporting frequency for this information from quarterly to semiannually. The information generated by the monitoring, recordkeeping and reporting requirements described in this ICR is used by the Agency to ensure that facilities affected by the NSPS continue to operate the control equipment and achieve compliance with the standards. Adequate monitoring, recordkeeping, and reporting are necessary to ensure compliance with the applicable regulations, as required by the Clean Air Act. The information collected from recordkeeping and reporting requirements is also used for targeting inspections.

3. Nonduplication, Consultations, and Other Collection Criteria

The recordkeeping and reporting requested is required for sources subject to 40 CFR part 60, subpart Ja. Existing refineries that are major sources of hazardous air pollutants are subject to maximum achievable control technology (MACT) standards under 40 CFR part 63 subparts CC and UUU for the control of hazardous air pollutants. Many refineries will also have existing sources that are subject to the emission limitations and associated monitoring, recordkeeping, and reporting requirements for criteria pollutants in 40 CFR part 60, subpart J.

3(a) Nonduplication

If the subject standards have not been delegated, the information is sent directly to the appropriate EPA Regional Office. Otherwise, the information is sent directly to the delegated State or local agency. The flare management plan that is sent to EPA's Office of Air Quality Planning and Standards (OAQPS) is an exact copy of the flare management plan sent to the EPA Regional Office or State or local agency. If a State or local agency has adopted their own similar standards to implement the Federal standards, a copy of the report submitted to the State or local agency can be sent to the Administrator in lieu of the report required by the Federal standards. Therefore, no duplication exists.

3(b) Public Notice Required Prior to ICR Submission to OMB

Public notice was provided via the preamble to the proposed and final rules.

3(c) Consultations

The EPA provided a 45-day public comment period after proposal of the amendments to NSPS subpart Ja. All affected parties were given the opportunity to comment on the proposed standards during this period. The EPA considered all of the comments received and incorporated many of them in developing the final standards.

During development of the proposed and promulgated standards, the EPA held meetings and conference calls with representatives of petroleum refining companies and their trade associations (National Petrochemicals and Refiners Association and American Petroleum Institute). While these meetings were generally focused on the standards for process heaters and flares, alternative monitoring, recordkeeping, and reporting requirements for certain types of flares were discussed, and an alternative water seal monitoring approach was developed that reduces the burden estimates associated with monitoring certain types of flares. Meeting minutes and supporting documentation of the issues discussed during these meeting are included in the docket for this rulemaking (EPA-HQ-OAR-2007-0011).

3(d) Effects of Less Frequent Collection

Less frequent information collection would decrease the margin of assurance that facilities are continuing to meet the standards. Requirements for information gathering and recordkeeping are useful techniques to ensure that good operation and maintenance practices are applied and emission limitations are met. If the information required by these standards was collected less frequently, the likelihood of detecting poor operation and maintenance of control equipment and noncompliance would decrease.

3(e) General Guidelines

None of the reporting or recordkeeping requirements contained in 40 CFR part 60, subpart Ja or otherwise pertinent to this request violate any of the regulations established by OMB at 5 CFR 1320.6.

3(f) Confidentiality

The required information consists of emissions data and other information that have been determined not to be private. However, any information submitted to the Agency for which a claim of confidentiality is made will be safeguarded according to the Agency policies set forth in Title 40, Chapter 1, Part 2, Subpart B – Confidentiality of Business Information (see 40 CFR Part 2; 41 FR 36902, September 1, 1976; amended by 43 FR 40000, September 8, 1978; 43 FR 42251, September 20, 1978; 44 FR 17674, March 23, 1979).

3(g) Sensitive Questions

None of the reporting or recordkeeping requirements contained in 40 CFR part 60, subpart Ja or otherwise pertinent to this request contain sensitive questions.

4. The Respondents and the Information Requested

4(a) Respondents/SIC Codes

The respondents of the recordkeeping and reporting requirements in this ICR are affected flares at petroleum refineries which commence construction, modification, or reconstruction after June 24, 2008. The SIC code for the respondents affected by the standards is SIC (U.S. Standard Industrial Classification) 2911 which corresponds to the NAICS (North American Industry Classification System) 324110 for petroleum refineries.

4(b) Information Requested

(i) Data Items

All data in this ICR that are recorded and/or reported are required by the Standards of Performance for Petroleum Refineries (40 CFR part 60, subpart Ja).

A source responding to this ICR must make the following reports:

Reports for 40 CFR Part 60, Subpart Ja	
Initial notifications:	60.7(a)
Construction/reconstruction	60.7(a)(1)
Actual Start-up	60.7(a)(3)
Physical or Operational Change	60.7(a)(4)
Demonstration of continuous monitoring system (CMS)	60.7(a)(5)
Excess emissions report	60.7(c), 60.108a(f)
Initial performance test results	60.8(a)
Notification of initial performance test	60.8(d)
Notification of Compliance status	60.11(a),(b),(c)
Written flare management plans/root cause analyses/corrective action analyses	60.103a(a)-(e), 60.108a(d)

A source responding to this ICR must keep the following records:

Recordkeeping for 40 CFR Part 60, Subpart Ja	
Start-ups, shutdowns, malfunctions, periods where the continuous monitoring system is inoperative	60.7(b)
All reports and notifications	60.7
Emission test methods and other data needed to determine emissions	60.104a
Written plans, information to document conformance with operation and maintenance requirements, monitoring exemptions, discharges to flare gas system, results of root cause analyses and corrective action analyses	60.108a

(ii) Respondent Activities

Respondent Activities
Read instructions.
Gather relevant information.
Perform initial performance test, Reference Method 1-6, 8-11, 15.
Write the notifications and reports listed above.
Enter information required to be recorded above.
Submit the required reports developing, acquiring, installing, and utilizing technology and systems for the purpose of collecting, validating, and verifying information.

Respondent Activities
Develop, acquire, install, and utilize technology and systems for the purpose of processing and maintaining information.
Develop, acquire, install, and utilize technology and systems for the purpose of disclosing and providing information.
Adjust the existing ways to comply with any previously applicable instructions and requirements.
Train personnel to be able to respond to a collection of information.
Transmit, or otherwise disclose the information.

Continuous monitoring system (CMS) information collection is automated and may be submitted electronically. In any event, hard copy reports from the CEMS information may easily be generated from a computer. It is estimated that 70 percent of the responses to this ICR can be collected electronically.

5. The Information Collected – Agency Activities, Collection Methodology, and Information Management

5(a) Agency Activities

The EPA conducts the following activities in connection with the acquisition, analysis, storage, and distribution of the required information.

Agency Activities
Observe initial performance tests and repeat performance tests if necessary.
Conduct on-site inspections as necessary.
Review notifications and reports, including performance test reports, excess emissions reports, flare management plans, and requests for site-specific process heater emissions limits required to be submitted by industry.
Audit facility records.
Input, analyze, and maintain data in the AIRS (Aerometric Information Retrieval System) Facility Subsystem (AFS) database.

5(b) Collection Methodology and Management

Following notification of startup, the reviewing authority might inspect the source to check if the pollution control devices are properly installed and operated. Performance test reports are used by the Agency to discern a source's initial capability to comply with the emission standard. Data obtained during periodic visits by Agency personnel from records maintained by the respondents are tabulated and published for internal Agency use in compliance

and enforcement programs. The semiannual reports are used for problem identification, as a check on source operation and maintenance, and for compliance determinations.

Information contained in the reports is entered into AFS, which is operated and maintained by EPA's Office of Air Quality Planning and Standards. AFS is EPA's database for the collection, maintenance, and retrieval of compliance and annual emission inventory data for over 100,000 industrial and government-owned facilities. The EPA uses AFS for tracking air pollution compliance and enforcement by State and local regulatory agencies, EPA Regional Offices and EPA Headquarters. The EPA and its delegated Authorities can edit, store, retrieve and analyze the data.

The records required by this NSPS must be retained by the owner or operator for two years.

5(c) Small Entity Flexibility

A majority of the affected facilities are large entities (*i.e.*, large businesses). However, the impact on small entities (*i.e.*, small businesses) was taken into consideration during the development of the regulation. The recordkeeping and reporting requirements were selected within the context of subpart Ja and the specific process equipment and pollutants. Due to technical considerations involving the process operations and the types of control equipment employed, the recordkeeping and reporting requirements are the same for both small and large entities. The EPA considers these requirements the minimum needed to ensure compliance and, therefore, cannot reduce them further for small entities. To the extent that larger businesses can use economies of scale to reduce their burden, the overall burden will be reduced.

5(d) Collection Schedule

The specific frequency for each information collection activity within this request is shown on Table 2: Industry Burden from Recordkeeping and Reporting – NSPS Subpart Ja.

6. Estimating the Burden and Cost of the Collection

Table 2 documents the computation of individual burdens for the recordkeeping and reporting requirements applicable to the industry for the subpart included in this ICR. The individual burdens are expressed under standardized headings believed to be consistent with the concept of burden under the Paperwork Reduction Act. Where appropriate, specific tasks and major assumptions have been identified. Responses to this information collection are mandatory.

The Agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

6(a) Estimating Respondent Burden

The average annual burden to industry over the next three years from these recordkeeping and reporting requirements is estimated to be 54,572 (Total Labor Hours from Table 2). These hours are based on Agency studies and background documents from the development of the

standards, Agency knowledge and experience with the NSPS program, the previously approved ICR, and any comments received.

6(b) Estimating Respondent Costs

(i) Estimating Labor Costs

This ICR uses a Technical Labor Rate of \$90.12 (composite rate of \$42.92 + 110% overhead) per hour. This rate is from the United States Department of Labor, Bureau of Labor Statistics, *Occupational Employment Statistics: May 2006 Employment and Wage Estimates*. The rate is a weighted average of the mean wage rates for Standard Occupational Classification (SOC) Codes for Environmental Engineers (SOC 17-2081, \$38.29 per hour, 89 percent of composite), General and Operations Managers (SOC 11-1021, \$57.58 per hour, 7 percent of composite), and Office and Administrative Support Occupations (SOC 43-0000, \$17.46 per hour, 4 percent of composite) for NAICS 324 (Petroleum and Coal Products Manufacturing). The composite wage rate has been increased by 110 percent to account for the benefit packages available to those employed by private industry.

(ii) Estimating Capital and Operations and Maintenance Costs

The type of industry costs associated with the information collection activity in the regulations are labor and continuous monitoring. The capital/startup costs are one-time costs when a facility becomes subject to the standards. The annual operation and maintenance costs are the ongoing costs to maintain the monitor and other costs such as photocopying and postage. The capital costs and the operation and maintenance costs for this ICR are only the additional costs associated with the required CMS for affected flares; the CEMS costs for other affected facilities, including process heaters, were included in the previously approved ICR for this subpart.

(iii) Capital/Start-up vs. Operating and Maintenance (O&M) Costs

The capital costs of the additional required CMS for sulfur content and flow rate are estimated to be \$300,000 per flare (\$43,000 annualized capital cost). Only 70 percent of the total affected flares are expected to be required to install CMS; the other 30 percent are expected to use the monitoring alternative for emergency flares and flares with flare gas recovery systems. This assumption results in an estimate of 262 additional flares subject to the monitoring requirements of subpart Ja over three years, or 87.3 additional flares per year. The total annualized capital cost for CMS for 262 flares is \$11,266,000 per year. There are no other capital costs associated with this information collection.

The total operation and maintenance (O&M) costs for this ICR are \$8,750,000. This is based on an annual operating cost of \$50,000 per year per flare. The total number of affected flares in the second year, 175, was used as an approximation for the average number of affected flares over three years.

The total respondent non-labor costs have been calculated as the addition of the capital/startup costs, and the annual operation and maintenance costs. The average annual cost

for capital/startup, and operation and maintenance costs to industry over the next three years of the ICR is estimated to be \$20,016,000.

6(c) Estimating Agency Burden and Cost

The only costs to the Agency are those costs associated with analysis of the reported information. Publication and distribution of the information are part of the AFS program. Examination of records to be maintained by the respondents will occur as part of the periodic inspection of sources, which is part of EPA’s overall compliance and enforcement program.

The average annual Agency cost during the 3 years of this ICR is estimated to be \$84,508 (see Table 1: Average Annual EPA Resource Requirements Resulting From NSPS Subpart Ja). This cost is based on the average hourly labor rate at a GS-12, Step 1 (\$26.53), times a 1.6 benefits multiplication factor to account for government overhead expenses for a total of \$42.45. These rates are from OPM’s “2006 General Schedule” which excludes locality rates of pay. Details upon which this estimate is based appear in Table 1.

6(d) Estimating the Respondent Universe and Total Burden and Costs

Respondent Universe						
Regulation Citation	(A) No. of New Sources/ Year	(B) No. of Initial Reports for New Sources ^a	(C) No. of Annual Reports for New Sources	(D) No. of Existing Sources	(E) No. of Reports for Existing Sources	(F) Total Annual Responses (A×(B+C)) + (D×E)
First year after proposal	44	10.7	2	0	2	557
Second year after proposal	44	10.7	2	44	2	645
Third year after proposal	44	10.7	2	88	2	733

^a Initial reports are those listed in Section 3E of Table 2.

Assuming that 44 plants become subject each year, the number of total respondents in the second year is 88. This number is the sum of Column A and Column D of the second row in the Respondent Universe table above. The number represents the number of existing sources (*i.e.*, refineries) plus the number of new sources averaged over the three-year period.

The number of Total Annual Responses in the second year is 645. This is the number in Column F of the second row in the Respondent Universe table. The total annual labor costs are \$4,918,110. The number of burden hours on which this estimate is based is 54,572. Details upon which this estimate is based appear in Table 2: Annual burden of reporting and recordkeeping requirements as a result of NSPS subpart Ja.

The total annualized capital and annual O&M costs to the regulated entity are \$20,016,000. These costs are detailed in section 6(b)(iii), Capital/Start-up vs. Operating and Maintenance (O&M) Costs.

6(e) Bottom Line Burden Hours And Cost Tables

The bottom line burden hours and cost tables for both the Agency and the respondents are attached.

6(f) Reasons for Change in Burden

As previously noted, the EPA originally estimated that 18 plants (including 18 flares) would become subject to 40 CFR part 60, subpart Ja. However, the EPA now estimates that a total of 400 flares at 150 refineries will become subject to 40 CFR part 60, subpart Ja over the first three years. The burden presented in this ICR is for recordkeeping and reporting requirements associated with the additional 382 flares at 132 additional refineries that the EPA projects will become subject to 40 CFR part 60, subpart Ja. This burden has not been estimated in a previous ICR.

6(g) Burden Statement

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for this ICR under Docket ID Number EPA-HQ-OAR-2007-0011, which is available for online viewing at www.regulations.gov, or in person viewing at the Air Docket in the EPA Docket Center (EPA/DC), EPA West, Room 3334, 1301 Constitution Avenue, NW, Washington, D.C. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading Room is (202) 566-1744, and the telephone number for the [insert the appropriate docket name] is (202) 566-1742. An electronic version of the public docket is available at www.regulations.gov. This site can be used to submit or view public comments, access the index listing of the contents of the public docket, and to access those documents in the public docket that are available electronically. When in the system, select "search," then key in the Docket ID Number identified above. Also, you can send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, D.C. 20 503, Attention: Desk Officer for EPA. Please include the EPA Docket ID Number EPA-HQ-OAR-2007-0011 and OMB Control Number 2060-0602 in any correspondence.

Part B of the Supporting Statement

This part is not applicable because no statistical methods were used in collecting this information.

**TABLE 1: AVERAGE ANNUAL EPA RESOURCE REQUIREMENTS FOR ADDITIONAL AFFECTED FLARES
SUBJECT TO NSPS SUBPART Ja**

Activity	EPA hours/ Occurrence (A)	Occurrences/ plant/year (B) ^a	EPA hours/ plant/year (C = A × B)	Plants/year (D)	EPA hours/ year (E = C × D)
<u>New Plants:</u>					
Report Review					
Notification of construction, reconstruction, or modification	2	2.89	5.79	44	254.67
Notification of anticipated startup	0.5	2.89	1.45	44	63.67
Notification of actual startup	0.5	2.89	1.45	44	63.67
Notification of accuracy test	0.5	1.98	0.99	44	43.67
Flare management plans ^b	1	2.89	2.89	44	127.33
Review test results	8	1.98	15.88	44	698.67
Emission Reports	4.2	2	8.4	44	369.6
<u>Existing Plants:</u>					
Emission Reports	4.2	2	8.4	44	369.6
TOTAL ANNUAL HOURS					1,991

Salary:^c

$(1,991 \text{ hours/year} \times \$42.45/\text{hour}) = \$84,508/\text{year}$

TOTAL ANNUAL COST = \$84,508

^a Assume 2.89 flares per refinery (382 flares at 132 refineries), 1.98 of which (262 flares at 132 refineries) would be required to install monitors for sulfur content and flow rate. Assume each refinery submits two emission reports per year, regardless of the number of affected flares.

^b Some plans will need more review than others, depending on complexity of flare connections and baseline calculations; assume 1 hour is the average amount of time spent per plan.

^c Estimate an hourly wage of \$26.53 plus 60 percent overhead expense which equals \$42.45.

TABLE 2: INDUSTRY BURDEN FROM RECORDKEEPING AND REPORTING FOR ADDITIONAL AFFECTED FLARES – NSPS SUBPART Ja^a

	Hours per Occurrence (A)	Occurrences/ respondent/ year (B) ^b	Hours/ respondent/ year (C = A × B)	Responses per year (D)	Total Labor Hours per year (E = C × D)	Cost per year ^c (F)
1. APPLICATIONS	Not Applicable					
2. SURVEY AND STUDIES						
A. <u>Flare Management Plan</u>	160	2.89	463.03	44	20,373.33	\$1,836,075.36
B. <u>Root Cause Analysis (flow)</u>	45	4	180	88	15,840	\$1,427,524.56
C. <u>Root Cause Analysis (sulfur)</u>	24	3	72	88	6,336	\$571,009.82
3. REPORTING REQUIREMENTS						
A. <u>Read Instructions</u>	1	1	1	44	44	\$3,965.35
B. <u>Required Activities</u>						
Initial Relative Accuracy Test ^d	24	3.97	95.27	44	209.6 ^e	\$18,889.47
CMS Audits (RAA or CGA) ^d	36	3.97	142.91	44	314.4 ^e	\$28,334.20
C. <u>Create Information</u>	Included in 3B					
D. <u>Gather Existing Information</u>	Included in 3E					
E. <u>Write Report</u>						
Notification of construction, reconstruction, or modification	2	2.89	5.79	44	254.67	\$22,950.94
Notification of anticipated startup	2	2.89	5.79	44	254.67	\$22,950.94
Notification of actual startup	2	2.89	5.79	44	254.67	\$22,950.94
Notification of initial performance test	2	1.98	3.97	44	174.67	\$15,741.22
Report of performance test	Included in 3B					
Semiannual Emission Reports	16	2	32	88	2,816	\$253,782.14

	Hours per Occurrence (A)	Occurrences/ respondent/ year (B) ^b	Hours/ respondent/ year (C = A × B)	Responses per year (D)	Total Labor Hours per year (E = C × D)	Cost per year ^c (F)
4. RECORDKEEPING REQUIREMENTS						
A. <u>Read Instructions</u>	Included in 3A					
B. <u>Plan Activities</u>	Included in 3B					
C. <u>Implement Activities</u>	Included in 3B					
D. <u>Develop Record System</u>	Not Applicable					
E. <u>Time to Enter Information</u>						
Records of operating parameters	0.25	350 ^f	87.5	88	7,700	\$693,935.55
F. <u>Train Personnel</u>	Not Applicable					
G. <u>Audits</u>	Not Applicable					
5. TOTAL ANNUAL BURDEN					54,572	\$4,918,110.50
6. CAPITAL/O&M COSTS						
Annualized Total Capital Cost						\$11,266,000
Annual O&M Cost						\$8,750,000
Total Annualized Capital and Annual O&M Cost						\$20,016,000

^a Assume that there are approximately 132 plants (respondents) which become subject over a 3-year period. The number of new sources per year equals 44. In the second year, assume the number of existing sources (*i.e.*, sources becoming subject to the rule in the first year) is 44 and the number of new sources is 44. Also assume there are approximately 2.89 flares per refinery (382 flares at 132 refineries), 1.98 of which (262 flares at 132 refineries) would require sulfur content and flow rate monitors.

^b Occurrences per respondent per year is calculated as the number of occurrences per flare per year multiplied by the number of flares per respondent (refinery).

^c Assume an hourly wage of \$42.92 plus 110 percent overhead costs which equals \$90.12. This amount was multiplied by the hours per year in Column E.

^d Assume that there are two monitors needed for each flare, one to monitor sulfur content and one to monitor flow rate.

^e Person-hours and annual cost are estimated to be 5 percent of the time that a CMS is in operation (E= .05C×D).

^f Assume operation 350 days per year as specified in the NSPS review document.