

**SUPPORTING STATEMENT
ENVIRONMENTAL PROTECTION AGENCY**

NESHAP for Petroleum Refineries (40 CFR Part 63, Subpart CC) (Renewal)

1. Identification of the Information Collection

1(a) Title of the Information Collection

NESHAP for Petroleum Refineries (40 CFR Part 63, Subpart CC) (Renewal),
EPA ICR Numbers 1692.07, OMB Control Number 2060-0340

1(b) Short Characterization/Abstract

The National Emission Standards for Hazardous Air Pollutants (NESHAP) for Petroleum Refineries (40 CFR part 63, subpart CC) were proposed on July 15, 1994, promulgated on August 18, 1995, and most recently amended on October 28, 2009. These regulations apply to the following existing and new petroleum refining process units and emission points located at refineries that are major sources of hazardous air pollutants (HAP) emissions, including: miscellaneous process vents, storage vessels, wastewater streams, equipment leaks, gasoline loading racks, and marine vessel loading operations. Provisions were also added for the control of HAP emissions from heat exchange systems, which include closed-loop recirculation systems with cooling towers and once-through cooling water systems. These regulations also apply to storage vessels and equipment leaks associated with bulk gasoline terminals or pipeline breakout stations that are related to an affected petroleum refinery. New facilities include those that commenced construction or reconstruction after the date of proposal. This information is being collected to assure compliance with 40 CFR part 63, subpart CC.

In general, all NESHAP standards require initial notifications, performance tests, and periodic reports. Owners or operators are also required to maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility, or any period during which the monitoring system is inoperative. These notifications, reports, and records are essential in determining compliance, and are required of all sources subject to NESHAP.

Any owner or operator subject to the provisions of this part shall maintain a file of these measurements and retain the file for at least five years following the date of such measurements, maintenance reports, and records. All reports are sent to the delegated state or local authority. In the event that there is no such delegated authority, the reports are sent directly to the U. S. Environmental Protection Agency (EPA) regional office.

Based on our consultations with industry representatives, there is an average of 9 storage vessels; 11 process units subject to LDAR provisions; 9 process vents requiring monitoring, recordkeeping, and reporting; and 3 heat exchange systems subject to a monthly sampling program for volatile organic compound (VOC) leak detection and repair at each source. Each plant site and that each plant site has only one respondent (i.e., the owner/operator of the plant

site).

Approximately 148 sources are currently subject to the regulation, and it is estimated that no additional sources will become subject to the regulation in the next three years. It is assumed that, on average, a refinery will reconstruct 10 percent of the existing storage vessels, process units subject to equipment leak provisions, process vents, and heat exchange systems subject to a monthly sampling program.

This ICR combines the burden currently approved under OMB control number 2060-0340 (EPA ICR Number 1692.06) for the original refinery rule and the burden resulting from the rule amendments addressed under OMB control number 2060-0619 (EPA ICR Number 2334.02). The Office of Management and Budget (OMB) approved the currently active ICRs without any “Terms of Clearance.”

There are approximately 148 petroleum refineries in the United States, which are owned and operated by the petroleum refinery industry. None of the facilities in the United States are owned by state, local, tribal or the Federal government; all are privately, owned for-profit businesses. The burden to the “Affected Public” is listed below in Table 1: Annual Respondent Burden and Cost – NESHAP for Petroleum Refineries (40 CFR Part 63, Subpart CC) (Renewal). The Federal government burden associated with the review of reports submitted by the respondent as shown below in Table 2: Average Annual EPA Burden and Cost – NESHAP for Petroleum Refineries (40 CFR Part 63, Subpart CC) (Renewal).

2. Need for and Use of the Collection

2(a) Need/Authority for the Collection

The EPA is charged under section 112 of the Clean Air Act, as amended, to establish standards of performance for each category or subcategory of major sources and area sources of hazardous air pollutants. These standards are applicable to new or existing sources of hazardous air pollutants and shall require the maximum degree of emission reduction. In addition, section 114(a) states that the Administrator may require any owner or operator subject to any requirement of this Act to:

- (A) Establish and maintain such records; (B) make such reports;
- (C) install, use, and maintain such monitoring equipment, and use such audit procedures, or methods; (D) sample such emissions (in accordance with such procedures or methods, at such locations, at such intervals, during such periods, and in such manner as the Administrator shall prescribe); (E) keep records on control equipment parameters, production variables or other indirect data when direct monitoring of emissions is impractical; (F) submit compliance certifications in accordance with Section 114(a)(3);

and (G) provide such other information as the Administrator may reasonably require.

In the Administrator's judgment, HAP emissions from petroleum refineries cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare. Therefore, the NESHAP were promulgated for this source category at 40 CFR part 63, subpart CC.

2(b) Practical Utility/Users of the Data

The recordkeeping and reporting requirements in the standard ensure compliance with the applicable regulations, which were promulgated in accordance with the Clean Air Act. In addition, the collected information is used for targeting inspections and as evidence in legal proceedings.

Performance tests are required in order to determine an affected facility's initial capability to comply with the emission standard. Continuous emission monitors are used to ensure compliance with the standard at all times. During the performance tests, a record of the operating parameters under which compliance was achieved, may be recorded and used to determine compliance in place of a continuous emission monitor.

The notifications required in the standard are used to inform the Agency or delegated authority when a source becomes subject to the requirements of the regulations. The reviewing authority may then inspect the source to ensure that the pollution control devices are properly installed and operated, that leaks are being detected and repaired, and that the standards are being met. The performance test may also be observed.

The required semiannual reports are used to determine periods of excess emissions, to identify problems at the facility, to verify operation/maintenance procedures and compliance.

3. Non-duplication, Consultations, and Other Collection Criteria

The requested recordkeeping and reporting are required under 40 CFR part 63, subpart CC.

3(a) Non-duplication

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. If a state or local agency has adopted its own similar standards to implement the Federal standards, a copy of the report submitted to the state or local agency is 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

An announcement of a public comment period for the renewal of this ICR was published in the Federal Register (76 FR 26900) on May 9, 2011. No comments were received on the burden published in the Federal Register.

3(c) Consultations

The Agency has consulted industry experts and internal data sources to project the number of affected facilities and industry growth over the next three years. The primary source of information as reported by industry, in compliance with the recordkeeping and reporting provisions in the standard is the OTIS, which is operated and maintained by EPA's Office of Compliance. OTIS is EPA's database for the collection, maintenance, and retrieval of all compliance data. We estimate that there are approximately 148 existing respondents subject to the standard and that no new sources will become subject to the standard over the three-year period covered by this ICR.

Industry trade association and other interested parties was provided an opportunity to comment on the burden associated with the standard as it was being developed and the standard has been previously reviewed to determine the minimum information needed for compliance purposes. For this renewal, we contacted the National Petrochemical & Refiners Association at (202) 457-0480 and the Texas Commission on Environmental Quality at (512) 239-3900. EPA did not receive any comments from the consultations.

It is our policy to respond after a thorough review of comments received from the public since the last ICR renewal as well as those submitted in response to the first Federal Register notice. In this case, no comments were received.

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 met. If the information required by these standards were collected less frequently, the proper operation and maintenance of control equipment and the possibility of detecting violations would be less likely.

3(e) General Guidelines

These reporting or recordkeeping requirements do not violate any of the regulations established by OMB at 5 CFR 1320.5.

These standards require respondents to maintain all records, including reports and notifications, for at least five years. This is consistent with the General Provisions as applied to the standards. EPA believes that the five-year records retention requirement is consistent with Part 70 permit program and the five-year statute of limitations on which the permit program is based. In addition, the retention of records for five years would allow EPA to establish the compliance history of a source and any pattern of compliance for purposes of determining the appropriate level of enforcement action. EPA has found that the most flagrant violators frequently have violations extending beyond the five years. In addition, EPA would be prevented from pursuing the violators due to the destruction or nonexistence of essential records.

3(f) Confidentiality

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 (CBI) (see 40 CFR 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

The reporting or recordkeeping requirements in the standard do not contain sensitive questions.

4. The Respondents and the Information Requested

4(a) Respondents/SIC Codes

The respondents to the recordkeeping and reporting requirements are petroleum refineries that are major sources of HAP emissions. The United States Standard Industrial Classification (SIC) code for the respondents affected by the standards is SIC 2911, which corresponds to the North American Industry Classification System (NAICS) 324110 for petroleum refineries.

4(b) Information Requested

(i) Data Items

In this ICR, all the data that is recorded or reported are required by NESHAP for Petroleum Refineries (40 CFR Part 63, Subpart CC) (Renewal).

A source must make the following reports:

| Notifications | |
|---|--|
| Notification of compliance, status report, periodic report for emissions averaging (optional) | 63.653(a) & (c) |
| Notification of intent to construct/reconstruct | 63.9(b)(4), 63.654(d)(2) |
| Notification of date of construction/reconstruction | 63.9(b)(4), 63.654(d)(2) |
| Notification of date of actual startup | 63.9(b)(4), 63.654(d)(2) |
| Application for approval of construction/reconstruction | 63.5(d), 63.9(b)(5), 63.566(b), 63.640(k)(2)(i), 63.654(c), 63.654(h)(6) |
| Notification of intent to construct/reconstruct a control device | 63.5(b)(6), 63.5(d)(1) |
| Notification of compliance status | 63.182(c), 63.428(c)(2), 63.640(k)(2)(ii), 63.654(b), 63.654(d), 63.654(f), 63.654(h)(6) 63.655(f)(1)(vi) |
| Notification of performance test and site-specific test plan | 63.567(d), (f), 63.642(d)(2), 63.654(c), |
| Results of performance test | 63.567(d), 63.654(c), 63.654(d) |
| Request for extension of compliance | 63.9(c) |
| Notification of special compliance requirements | 63.9(d) |
| Engineering report of vapor collection system for marine tank vessel loading operations | 63.567(f), 63.654(c) |
| Notifications for wastewater streams | 61.357, 63.654(a) |
| Notifications of inspections of storage vessels | 63.654(h)(2) |
| Notification of determination of applicability to flexible process units | 63.654(h)(6)(i) |
| Notification of determination of applicability to variable storage vessel | 63.654(h)(6)(ii) |
| Notification of determination of applicability to variable distillation units | 63.654(h)(6)(iii) |

| Reports | |
|---|--|
| Submission of implementation plan for approval (optional) | 63.652(b), 63.653(c) & (d) |
| Periodic report for emissions averaging (optional) | 63.652(l) |
| Reports for wastewater streams | 61.357, 63.654(a) |
| Reports for gasoline loading racks | 63.428(b), (c), (g) (1), and (h)(1) through (h)(3), 63.654(b) |
| Annual reports of excess emissions and continuous monitoring system performance, or summary report, for marine tank vessel loading operations | 63.567(e), 63.654(c) |
| Reports for equipment leaks | 60.487 or 63.182, 63.654(d) |
| Semiannual (“Periodic”) and immediate reports, including startup, shutdown, and malfunction reports | 63.10(d)(5), 63.654(g), 63.654(h)(1), 63.655(g)(9) |

A source must keep the following records:

| Recordkeeping | |
|---|--------------------------------|
| Records for implementation plan (optional) | 63.653(a), (b), & (d) |
| Records for wastewater streams | 61.356, 63.654(a) |
| Records for gasoline loading racks | 63.428(c), 63.654(b) |
| Records for vapor collection system for marine tank vessel loading operations | 63.567(g), 63.654(c) |
| Records of vapor tightness for marine tank vessel loading operations | 63.567(h), 63.654(c) |
| Records of current vapor tightness test results for marine tank vessel loading operations | 63.567(i), 63.654(c) |
| Records for equipment leaks | 60.486 or 63.181, 63.654(d) |
| Records for storage vessels | 63.123, 63.654(i)(1) |
| Records of performance test results and test reports | 63.654(i)(2) |
| Records for monitoring of miscellaneous process vents | 63.654(i)(3) |

| Recordkeeping | |
|---|-------------------|
| Records of miscellaneous notifications and reports | 63.654(i)(4) |
| Records of heat exchange system sampling results, leak detection, and repair | 63.655(i)(4) |
| Records of startup, shutdown, and malfunction of processes | 63.10(b)(2)(i) |
| Records of malfunction of control equipment | 63.10(b)(2)(ii) |
| Records of corrective actions taken during periods of startup shutdown, and malfunction | 63.10(b)(2)(iv) |
| Records to demonstrate conformance with startup, shutdown, and malfunction plan. | 63.10(b)(2)(v) |
| Records of calibration checks, adjustments and maintenance on CMS | 63.10(b)(x), (xi) |

Electronic Reporting

Some of the respondents are using monitoring equipment that automatically records parameter data. Although personnel at the affected facility must still evaluate the data, internal automation has significantly reduced the burden associated with monitoring and recordkeeping at a plant site.

Also, regulatory agencies, in cooperation with the respondents continue to create reporting systems to transmit data electronically. However, electronic reporting systems are not widely used. At this time, it is estimated that approximately 10 percent of the respondents use electronic reporting.

(ii) Respondent Activities

| Respondent Activities |
|---|
| Read instructions. |
| Install, calibrate, maintain, and operate continuous temperature monitors or other monitoring devices for HAP control devices. |
| Perform initial performance test and repeat performance tests if necessary. |
| 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. |
| Develop, acquire, install, and utilize technology and systems for the purpose of processing and maintaining information. |

| Respondent Activities |
|--|
| 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. |

Currently, sources are using monitoring equipment that provides parameter data in an automated way (e.g., continuous parameter monitoring system). Although personnel at the source still need to evaluate the data, this type of monitoring equipment has significantly reduced the burden associated with monitoring and recordkeeping.

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

5(a) Agency Activities

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 observe repeat performance tests if necessary. |
| Review notifications and reports, including performance test reports, and excess emissions reports, required to be submitted by industry. |
| Audit facility records. |
| Input, analyze, and maintain data in the Online Tracking Information System (OTIS). |

5(b) Collection Methodology and Management

Following notification of startup, the reviewing authority could inspect the source to determine whether the pollution control devices are properly installed and operational. Performance test reports are used by the Agency to discern a source's initial capability to comply with the emission standard, and to note the operating conditions under which compliance was achieved. Data and records maintained by the respondents are tabulated and published for 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 the OTIS, which is operated and

maintained by EPA's Office of Compliance. OTIS is EPA's database for the collection, maintenance, and retrieval of compliance data for approximately 125,000 industrial and government-owned facilities. The EPA uses the OTIS for tracking air pollution compliance and enforcement by local and state 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 regulation must be retained by the owner or operator for five years.

5(c) Small Entity Flexibility

A majority of the affected facilities are large entities (e.g., large businesses). However, the impact on small businesses was taken into consideration during the development of the regulation. 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 Agency considers the 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 below in Table 1: Annual Respondent Burden and Cost – NESHAP for Petroleum Refineries (40 CFR Part 63, Subpart CC) (Renewal).

6. Estimating the Burden and Cost of the Collection

Table 1 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, we have identified the specific tasks and major assumptions in the burden calculations. 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 549,980 (Total Labor Hours from Table 1). These hours are based on Agency studies and background documents from the development of the

regulation, Agency knowledge and experience with the NESHAP program, the previously approved ICR, and any comments received.

6(b) Estimating Respondent Costs

(i) Estimating Labor Costs

This ICR uses the following labor rates:

| | |
|---------------------------------------|---------------------------|
| Managerial | \$164.07 (\$78.13+ 110%) |
| Technical | \$133.67 (\$63.65 + 110%) |
| Installation, maintenance, and repair | \$60.31 (\$28.72 + 110%) |
| Plant operator | \$51.24 (\$24.40 + 110%) |
| Clerical | \$45.19 (\$21.52 + 110%) |

These rates are from the United States Department of Labor, Bureau of Labor Statistics, “May 2011 National Industry-Specific Occupational Employment Wage Estimates” for NAICS code 324100 - Petroleum and Coal Products Manufacturing. The rates have been increased by 110 percent to account for the benefit packages available to those employed by private industry.

(ii) Estimating Capital/Startup and Operation and Maintenance Costs

The type of industry costs associated with the information collection activities in the subject standard are both labor costs, which are addressed elsewhere in this ICR, and the costs associated with purchasing equipment. The leak detection and repair program for heat exchange systems will require the purchase and installation of an air stripping column apparatus for sample collection and an FID analyzer to determine the concentration of air stripped compounds although samples may also be collected in canisters for shipment to analytical laboratories. The air-stripping column is portable and may be used for multiple heat exchange systems.

(iii) Capital/Startup vs. Operation and Maintenance (O&M) Costs

The NESHAP subpart CC, as amended in October 2009, incorporates requirements for parametric monitoring of control devices that are included in other rules to which petroleum refineries are already subject. The only new equipment required in order complying with the recordkeeping and reporting requirements of this NESHAP is for heat exchange systems and comprises an air-stripping column for sample collection, associated equipment, and an FID analyzer. The annualized capital cost for the purchase and installation of this equipment at each refinery is approximately \$116,870. The annual O&M cost is \$178,042, and assumes one mid-point calibration of sampling equipment prior to each sampling event, 0.25 technical labor hours per sampling event, a technical labor rate of \$133.67 per hour, 12 sampling events per heat exchange system per year, 3 heat exchange systems per refinery, and 148 refineries.

| Capital/Startup vs. Operation and Maintenance (O&M) Costs | | | | | | |
|--|--|--|--|--|---|------------------------------|
| (A) Continuous Monitoring Device | (B) Capital/Startup Cost for One Respondent | (C) Number of New Respondents | (D) Total Capital/Startup Cost, (B X C) | (E) Annual O&M Costs for One Respondent | (F) Number of Respondents with O&M | (G) Total O&M, (E X F) |
| Air stripping column and FID analyzer | \$116,870 | 0 | \$0 | \$1,202.99 | 148 | \$178,042 |

The total capital/startup costs for this ICR are \$0. This is the total of column D in the above table.

The total operation and maintenance (O&M) costs for this ICR are \$178,042. This is the total of column G.

The average annual cost for capital/startup and operation and maintenance costs to the industry over the next three years of the ICR is estimated to be \$178,042.

6(c) Estimating Agency Burden and Cost

The only costs to the Agency are those labor costs associated with analysis of the reported information. EPA's overall compliance and enforcement program includes activities such as the examination of records maintained by the respondents, periodic inspection of sources of emissions, and the publication and distribution of collected information.

The average annual Agency cost during the three years of the ICR is estimated to be \$300,653. This cost is based on the average hourly labor rate as follows:

| | | |
|------------|---------|--------------------------------|
| Managerial | \$62.27 | (GS-13, Step 5, \$38.92 + 60%) |
| Technical | \$46.21 | (GS-12, Step 1, \$28.88+ 60%) |
| Clerical | \$25.01 | (GS-6, Step 3, \$15.63 + 60%) |

These rates are from the Office of Personnel Management (OPM) 2011 "General Schedule," which excludes locality rates of pay. Details upon which this estimate is based appear below in Table 2: Average Annual EPA Burden and Cost – NESHAP for Petroleum Refineries (40 CFR Part 63, Subpart CC) (Renewal).

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

Based on our research for this ICR, approximately 148 existing sources are currently subject to the standard. We don't anticipate any new refineries over the period of the ICR.

It is assumed that, on average, a refinery will reconstruct 10 percent of the existing storage vessels, process units subject to equipment leak provisions, process vents, and heat exchange systems.

The number of respondents is calculated using the following table, which addresses the three years covered by this ICR.

| Number of Respondents | | | | | |
|------------------------------|---|---------------------------------------|---|--|--|
| | Respondents That Submit Reports | | Respondents That Do Not Submit Any Reports | | |
| Year | (A) Number of New Respondents ¹ | (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 ¹ | (E) Number of Respondents (E=A+B+C-D) |
| 1 | 14.8 | 148 | 0 | 14.8 | 148 |
| 2 | 14.8 | 148 | 0 | 14.8 | 148 |
| 3 | 14.8 | 148 | 0 | 14.8 | 148 |
| Average | 14.8 | 148 | 0 | 14.8 | 148 |

¹ New respondents include sources with constructed and reconstructed affected facilities. In this standard, existing respondents submit initial notifications. It is assumed that, on average, a refinery will reconstruct 10 percent of the existing storage vessels, process units subject to equipment leak provisions, process vents, and heat exchange systems.

To avoid double-counting respondents column D is subtracted. As shown above, the average Number of Respondents over the three-year period of this ICR is 148.

The total number of annual responses per year is calculated using the following table:

| Total Annual Responses | | | | |
|---|------------------------------|----------------------------|---|---|
| (A) Information Collection Activity | (B) Number of Respondents | (C) Number of Responses | (D) Number of Existing Respondents That Keep Records But Do Not Submit Reports | (E) Total Annual Responses E=(BxC)+D |
| Initial Notifications: | | | | |
| Notification of reconstruction process vents | 148 | 0.4 | 0 | 59.2 |
| Notification of compliance status – storage vessels | 148 | 0.9 | 0 | 133.2 |
| Notification of compliance status – equipment leaks | 148 | 1.1 | 0 | 162.8 |

| Total Annual Responses | | | | |
|---|------------------------------|----------------------------|---|---|
| (A) Information Collection Activity | (B) Number of Respondents | (C) Number of Responses | (D) Number of Existing Respondents That Keep Records But Do Not Submit Reports | (E) Total Annual Responses $E=(B \times C)+D$ |
| Notification of compliance status – process vents | 148 | 0.9 | 0 | 133.2 |
| Notification of compliance status – heat exchange systems | 148 | 0.3 | 0 | 44.4 |
| Notification of performance test – process vent control devices | 148 | 0.4 | 0 | 59.2 |
| Notification of storage vessel inspections | 148 | 0.9 | 0 | 133.2 |
| Periodic Reports: | | | | |
| Startup, shutdown, malfunction reports | 148 | 0 | 0 | 0 |
| Semiannual parameter exceedance reports | 148 | 2 | 0 | 296 |
| Annual tank inspection failure reports | 148 | 1 | 0 | 148 |
| Semiannual compliance – LDAR reports | 148 | 2 | 0 | 296 |
| TOTAL | | | | 1,465.2 |

The number of Total Annual Responses is 1,465 (rounded).

The total annual labor costs are \$66,483,527. Details regarding these estimates can be found below in Table 1: Annual Respondent Burden and Cost – NESHAP for Petroleum Refineries (40 CFR Part 63, Subpart CC) (Renewal).

6(e) Bottom Line Burden Hours Burden Hours and Cost Tables

The detailed bottom line burden hours and cost calculations for the respondents and the Agency are shown below in Tables 1 and 2, respectively, and summarized below.

(i) Respondent Tally

The total annual labor hours are 549,980. Details regarding these estimates may be found below in Table 1: Annual Respondent Burden and Cost – NESHAP for Petroleum Refineries (40 CFR Part 63, Subpart CC) (Renewal).

Furthermore, the annual public reporting and recordkeeping burden for this collection of

information is estimated to average 375 hours per response.

The total annual capital/startup and O&M costs to the regulated entity are \$178,042. The cost calculations are detailed in Section 6(b)(iii) Capital/Startup vs. Operation and Maintenance (O&M) Costs.

(ii) The Agency Tally

The average annual Agency burden and cost over next three years is estimated to be 6,672 labor hours at a cost of \$300,653. See below Table 2: Average Annual EPA Burden and Cost – NESHAP for Petroleum Refineries (40 CFR Part 63, Subpart CC) (Renewal).

6(f) Reasons for Change in Burden

There is an increase in labor hours and cost to industry in this ICR renewal (EPA ICR Number 1692.07) as compared to the currently approved 2060-0340 ICR (EPA ICR Number 1692.06). The increase of 138,091 hours is due to several factors, as explained below.

- The 2060-0340 ICR (EPA ICR number 1692.06) was last renewed in February 2009. Later that year, the NESHAP Subpart CC rule was amended to include new requirements for heat exchange systems (HES). The burden for the new requirements due to the amendment were addressed in a new ICR (ICR number 2334.02, OMB control number 2060-0619). This renewal ICR combines the reporting and recordkeeping burden of the original rule requirements (2060-0340/1692.06) with that of the amendment requirements (2060-0619/2334.02). Because all of the requirements currently approved under 2060-0619 are being merged into this ICR (2060-0340), 2060-0619 will be discontinued following the approval of this ICR.
- The estimated number of affected sources for this ICR has been revised to 148, based on recent industry data obtained during an ICR collection request under Section 114 of the CAA. In the previously approved ICR 1692.06 (2060-0340), the estimated number of affected sources was 134. In the previously approved ICR number 2334.02 (2060-0619), the estimated number of affected sources was 154.
- Respondent and Agency labor rates have been updated to be consistent with the most recent available data from the Bureau of Labor Statistics, contributing to a net increase in labor costs.
- The ICR renewal calculations also includes a change in the number of respondents subject to HES rule requirements, since we have assumed that existing refineries are in compliance with all HES rule amendment requirements,

and since the three-year compliance date established in the rule amendment has passed. This assumption results in an increase in labor hours associated with compliance with HES requirements.

As indicated in Section 6(b)(iii), there is a decrease in capital/startup costs compared to the currently approved 2060-0340 ICR (EPA ICR Number 1692.06), as we have assumed that no new sources will be subject to this ICR over the next three years, and that existing refineries have already installed the leak detection and repair equipment for HES

There is a significant increase in O&M costs compared to the currently approved 2060-0340 ICR (EPA ICR number 1692.06). This increase is due to the inclusion of continuous monitoring devices associated with HES, and which have been added to reflect the amended rule requirements related to HES.

There is also an increase in burden hours and costs to the Agency. Similar to that described above for the respondent burden, this increase is attributed to a program change, as well as to revisions in the number of respondents and to the use of updated labor rates from OPM.

NET CHANGE IN BURDEN

| Burden Item | Burden Approved Under 1692.06 | Burden Attributed to 1692.07 | Burden Change Attributed to 1692.07 | Burden Approved Under 2334.02 | Total Burden Change |
|--------------------|-------------------------------|------------------------------|-------------------------------------|-------------------------------|---------------------|
| | A | B | C = B - A | D | E = C - D |
| Responses | 1,286 | 1465 | 179 | 154 | 25 |
| Hours | 411,889 | 549,980 | 138,091 | 13,647 | 124,444 |
| Capital | \$0 | \$0 | \$0 | \$2,321,640 | \$2,321,640 |
| O&M | \$0 | \$178,042 | \$178,042 | \$61,711 | \$116,331 |
| Total, Capital/O&M | \$0 | \$178,042 | \$178,042 | \$2,383,351 | \$2,205,309 |

REASON FOR CHANGE IN BURDEN SINCE LAST RENEWAL

| | Heat Exchangers (currently approved under 2334.02) | Removal of Capital Costs due to no new respondents | Increase in O&M due to greater number of heat exchange systems requiring O&M | Increase in number of respondents from 134 to 148 | TOTAL CHANGE |
|-----------|--|--|--|---|--------------|
| Responses | 154 | 0 | 0 | 25 | +179 |
| Hours | 13,647 | 0 | 0 | 124,444 | +138,091 |
| Costs | \$2,383,351 | -\$2,321,640 | \$116,331 | 0 | +\$178,042 |

6(g) Burden Statement

The annual public reporting and recordkeeping burden for this collection of information is estimated to average 375 hours per response. 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; to 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; to adjust the existing ways to comply with any previously applicable instructions and requirements; to train personnel to be able to respond to a collection of information; to search data sources; to complete and review the collection of information; and to 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 valid OMB Control Number. The OMB Control Numbers for EPA's regulations are listed at 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-OECA-2011-0234. An electronic version of the public docket is available at <http://www.regulations.gov/> which may be used to obtain a copy of the draft collection of information, submit or view public comments, access the index listing of the contents of the 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 in this document. The documents are also available for public viewing at the Enforcement and Compliance Docket and Information Center in the EPA Docket Center (EPA/DC), EPA West, Room 3334, 1301 Constitution Avenue, NW, Washington, DC. 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 docket center is (202) 566-1752. Also, you can send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, DC 20503, Attention: Desk Officer for EPA. Please include the EPA Docket ID Number EPA-HQ-OECA-2011- 0234 and OMB Control Number 2060-0340 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. Annual Respondent Burden and Cost - NESHAP for Petroleum Refineries (40 CFR Part 63, Subpart CC) (Renewal)

| 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 | (E) Technical person-hours per year (E=CxD) | (F) Installation, maintenance, and repair person-hours per year (F=CxD) | (G) Plant operator person-hours per year (G=CxD) | (H) Management person-hours per year (Ex0.05) | (I) Clerical person hours per year (Ex0.1) | (J) Cost ^b \$ |
|--|------------------------------------|---|--|--|---|---|--|---|--|--------------------------------|
| 1. Applications | N/A | | | | | | | | | |
| 2. Survey and studies | N/A | | | | | | | | | |
| 3. Acquisition, installation, and utilization of technology and systems ^c | | | | | | | | | | |
| Technical | 32 | 1 | 32 | 0 | 0 | N/A | N/A | 0 | 0 | 0 |
| Management | 2 | 1 | 2 | 0 | 0 | N/A | N/A | 0 | 0 | 0 |
| 4. Reporting requirements | | | | | | | | | | |
| A. Read instructions and planning ^{d, e} | | | | | | | | | | |
| <u>Initial:</u> | | | | | | | | | | |
| i. General/applicability | 20 | 0.1 | 2 | 148 | 296 | N/A | N/A | 14.8 | 29.6 | 43,330.8 |
| ii. Storage vessels | 20 | 0.9 | 18 | 148 | 2,664 | N/A | N/A | 133.2 | 266.4 | 389,977.23 |
| iii. Process units – LDAR | 20 | 1.1 | 22 | 148 | 3,256 | N/A | N/A | 162.8 | 325.6 | 476,638.84 |
| iv. Process vents | 20 | 0.9 | 18 | 148 | 2,664 | N/A | N/A | 133.2 | 266.4 | 389,977.23 |
| <u>Periodic:</u> | | | | | | | | | | |
| i. General/applicability | 4 | 1 | 4 | 148 | 592 | N/A | N/A | 29.6 | 59.2 | 86,661.61 |
| ii. Storage vessels | 1 | 9 | 9 | 148 | 1,332 | N/A | N/A | 66.6 | 133.2 | 194,988.62 |
| iii. Process units – LDAR | 2 | 11 | 22 | 148 | 3,256 | N/A | N/A | 162.8 | 325.6 | 476,638.84 |
| iv. Process vents | 2 | 9 | 18 | 148 | 2,664 | N/A | N/A | 133.2 | 266.4 | 389,977.23 |
| v. Heat exchange systems | 2 | 3 | 6 | 148 | 888 | N/A | N/A | 44.4 | 88.8 | 129,992.41 |
| B. Required activities ^{d, e} | | | | | | | | | | |
| <u>Initial:</u> | | | | | | | | | | |
| i. General/applicability | 10 | 0.1 | 1 | 148 | 148 | N/A | N/A | 7.4 | 14.8 | 21,665.4 |
| ii. Storage vessels | 88 | 0.9 | 79.2 | 148 | 11,721.60 | N/A | N/A | 586.08 | 1,172.16 | 1,715,899.82 |

| Burden item | (A) Person- hours per occurrence | (B) No. of occurrences per respondent per year | (C) Person- hours per respondent per year | (D) Respondents per year ^a | (E) Technical person- hours per year | (F) Installation, maintenance, and repair person-hours per year | (G) Plant operator person- hours per year | (H) Management person-hours per year | (I) Clerical person hours per year | (J) Cost ^b \$ |
|---|---|---|---|---|--|--|--|---|--|--------------------------------|
| | | | (C=AxB) | | (E=CxD) | (F=CxD) | (G=CxD) | (Ex0.05) | (Ex0.1) | |
| iii. Process units – LDAR | 8 | 1.1 | 8.8 | 148 | 1,302.40 | N/A | N/A | 65.12 | 130.24 | 190,655.54 |
| iv. Process vents – initial performance test ^f | 11 | 0.4 | 4.4 | 148 | 651.20 | N/A | N/A | 32.56 | 65.12 | 95,327.77 |
| v. Process vents – repeat performance test ^f | 11 | 0.4 | 4.4 | 74 | 325.60 | N/A | N/A | 16.28 | 32.56 | 47,663.88 |
| <u>Periodic:</u> | | | | | | | | | | |
| i. General/applicability | 3 | 1 | 3 | 148 | 444 | N/A | N/A | 22.2 | 44.4 | 64,996.21 |
| ii. Storage vessels | 4 | 9 | 36 | 148 | 5,328 | N/A | N/A | 266.4 | 532.8 | 779,954.46 |
| iii. Process units – LDAR | 1 | 11 | 11 | 148 | 1,628 | N/A | N/A | 81.4 | 162.8 | 238,319.42 |
| iv. Process vents | 2 | 9 | 18 | 148 | 2,664 | N/A | N/A | 133.2 | 266.4 | 389,977.23 |
| v. Heat exchange systems – sampling analysis ^g | | | | | | | | | | |
| Technical | 1 | 36 | 36 | 148 | 5,328 | N/A | N/A | N/A | N/A | 712,167.12 |
| Plant operator | 3 | 36 | 108 | 148 | N/A | N/A | 15,984 | N/A | N/A | 819,020.16 |
| vi. Heat exchange systems – triggered monitoring of leak ^h | | | | | | | | | | |
| Technical | 1 | 2 | 2 | 148 | 296 | N/A | N/A | N/A | N/A | 39,564.84 |
| Plant operator | 3 | 2 | 6 | 148 | N/A | N/A | 888 | N/A | N/A | 45,501.12 |
| vii. Heat exchange systems – leak repair ⁱ | 40 | 2 | 80 | 148 | N/A | 11,840 | N/A | N/A | N/A | 714,094.08 |
| C. Create information | See 4B | | | | | | | | | |
| D. Gather existing information | See 4B | | | | | | | | | |
| E. Write report ^{d,e} | | | | | | | | | | |
| Startup, shutdown, and malfunction plan | 40 | 1 | 40 | 0 | 0 | N/A | N/A | 0 | 0 | 0 |
| Notification of compliance status ^j | | | | | | | | | | |

| Burden item | (A) Person- hours per occurrence | (B) No. of occurrences per respondent per year | (C) Person- hours per respondent per year | (D) Respondents per year ^a | (E) Technical person- hours per year | (F) Installation, maintenance, and repair person-hours per year | (G) Plant operator person- hours per year | (H) Management person-hours per year | (I) Clerical person hours per year | (J) Cost ^b \$ |
|--|---|---|---|---|--|--|--|---|--|--------------------------------|
| | | | (C=AxB) | | (E=CxD) | (F=CxD) | (G=CxD) | (Ex0.05) | (Ex0.1) | |
| i. Storage vessels | 1 | 0.9 | 0.9 | 148 | 133.2 | N/A | N/A | 6.66 | 13.32 | 19,498.86 |
| ii. Process units – LDAR | 4 | 1.1 | 4.4 | 148 | 651.2 | N/A | N/A | 32.56 | 65.12 | 95,327.77 |
| iii. Process vents | 1 | 0.9 | 0.9 | 148 | 133.2 | N/A | N/A | 6.66 | 13.32 | 19,498.86 |
| iv. Heat exchange systems | 1 | 0.3 | 0.3 | 148 | 44.4 | N/A | N/A | 2.22 | 4.44 | 6,499.62 |
| Notification of storage vessel inspections | 1 | 0.9 | 0.9 | 148 | 133.2 | N/A | N/A | 6.66 | 13.32 | 19,498.86 |
| Notification of reconstruction – process vent control devices ^f | 4 | 0.4 | 1.6 | 148 | 236.8 | N/A | N/A | 11.84 | 23.68 | 34,664.64 |
| Notification of performance tests ^{d,e} | See 4B | | | | | | | | | |
| Startup, shutdown, and malfunction reports | See semiannual compliance reports | | | | | | | | | |
| Semiannual compliance reports ^{k,l} | | | | | | | | | | |
| i. General/applicability ^m | 18 | 2 | 36 | 148 | 5,328 | N/A | N/A | 266.4 | 532.8 | 779,954.46 |
| ii. Storage vessels ⁿ | 1 | 18 | 18 | 148 | 2,664 | N/A | N/A | 133.2 | 266.4 | 389,977.23 |
| iii. Storage vessels – seal gap failure ^o | 3 | 2 | 6 | 148 | 888 | N/A | N/A | 44.4 | 88.8 | 129,992.41 |
| iv. Process units – LDAR ^p | 3 | 22 | 66 | 148 | 9,768 | N/A | N/A | 488.4 | 976.8 | 1,429,916.52 |
| v. Process vents ^q | 1.5 | 8 | 12 | 148 | 1,776 | N/A | N/A | 88.8 | 177.6 | 259,984.82 |
| vi. Heat exchange systems ^r | 2 | 6 | 12 | 148 | 1,776 | N/A | N/A | 88.8 | 177.6 | 259,984.82 |
| Reporting Subtotal | | | | | | | 109,496.3 | | | 11,897,788.75 |
| 5. Recordkeeping requirements | | | | | | | | | | |
| A. Read instructions | See 4A | | | | | | | | | |
| B. Plan activities ^{d,e} | See 4A | | | | | | | | | |
| C. Implement activities ^{d,e} | See 4B | | | | | | | | | |
| D. Develop record system ^s | | | | | | | | | | |

| Burden item | (A) Person- hours per occurrence | (B) No. of occurrences per respondent per year | (C) Person- hours per respondent per year | (D) Respondents per year ^a | (E) Technical person- hours per year | (F) Installation, maintenance, and repair person-hours per year | (G) Plant operator person- hours per year | (H) Management person-hours per year | (I) Clerical person hours per year | (J) Cost ^b \$ |
|---|---|---|---|---|--|--|--|---|--|--------------------------------|
| | | | (C=AxB) | | (E=CxD) | (F=CxD) | (G=CxD) | (Ex0.05) | (Ex0.1) | |
| <u>Initial:</u> | | | | | | | | | | |
| i. Storage vessels | 2 | 0.9 | 1.8 | 148 | 266.4 | N/A | N/A | 13.32 | 26.64 | 38,997.72 |
| ii. Process units – LDAR | 75 | 1.1 | 82.5 | 148 | 12,210 | N/A | N/A | 610.5 | 1,221 | 1,787,395.65 |
| iii. Process vents | 2 | 0.9 | 1.8 | 148 | 266.4 | N/A | N/A | 13.32 | 26.64 | 38,997.72 |
| <u>Periodic:</u> | | | | | | | | | | |
| i. Storage vessels | 2 | 9 | 18 | 148 | 2,664 | N/A | N/A | 133.2 | 266.4 | 389,977.23 |
| ii. Process units – LDAR | 75 | 11 | 825 | 148 | 122,100 | N/A | N/A | 6,105 | 12,210 | 17,873,956.49 |
| iii. Process vents | 2 | 9 | 18 | 148 | 2,664 | N/A | N/A | 133.2 | 266.4 | 389,977.23 |
| iv. Heat exchange systems ^t | | | | | | | | | | |
| Technical | 12 | 12 | 144 | 148 | 21,312 | N/A | N/A | N/A | N/A | 2,848,668.48 |
| Plant operator | 12 | 12 | 144 | 148 | N/A | N/A | 21,312 | N/A | N/A | 1,092,026.88 |
| E. Time to enter and transmit information | | | | | | | | | | |
| <u>Initial:</u> | | | | | | | | | | |
| i. Storage vessels | 6 | 0.9 | 5.4 | 148 | 799.2 | N/A | N/A | 39.96 | 79.92 | 116,993.17 |
| ii. Process units – LDAR | 99 | 1.1 | 108.9 | 148 | 16,117.2 | N/A | N/A | 805.86 | 1,611.72 | 2,359,362.26 |
| iii. Process vents | 12 | 0.4 | 4.8 | 148 | 710.4 | N/A | N/A | 35.52 | 71.04 | 103,993.93 |
| <u>Periodic:</u> ^u | | | | | | | | | | |
| i. Storage vessels | 3.5 | 9 | 31.5 | 148 | 4,662 | N/A | N/A | 233.1 | 466.2 | 682,460.16 |
| ii. Process units – LDAR | 99 | 11 | 1,089 | 148 | 161,172 | N/A | N/A | 8,058.6 | 16,117.2 | 23,593,622.56 |
| iii. Process vents | 29 | 4 | 116 | 148 | 17,168 | N/A | N/A | 858.4 | 1,716.8 | 2,513,186.61 |
| iv. Heat exchange systems | 1 | 3 | 3 | 148 | 444 | N/A | N/A | 22.2 | 44.4 | 64,996.21 |
| F. Time to train personnel ^v | | | | | | | | | | |
| <u>Initial:</u> | | | | | | | | | | |
| i. Storage vessels | 1 | 0.9 | 0.9 | 148 | 133 | N/A | N/A | 6.7 | 13.3 | 19,498.86 |

| Burden item | (A) Person-hours per occurrence | (B) No. of occurrences per respondent per year | (C) Person-hours per respondent per year | (D) Respondents per year ^a | (E) Technical person-hours per year | (F) Installation, maintenance, and repair person-hours per year | (G) Plant operator person-hours per year | (H) Management person-hours per year | (I) Clerical person hours per year | (J) Cost ^b \$ |
|---|------------------------------------|---|---|--|--|--|---|---|---------------------------------------|--------------------------------|
| | | | (C=AxB) | | (E=CxD) | (F=CxD) | (G=CxD) | (Ex0.05) | (Ex0.1) | |
| ii. Process units – LDAR | 1 | 1.1 | 1.1 | 148 | 163 | N/A | N/A | 8.1 | 16.3 | 23,831.94 |
| iii. Process vents | 1 | 0.4 | 0.4 | 148 | 59 | N/A | N/A | 3.0 | 5.9 | 8,666.16 |
| <u>Periodic:</u> | | | | | | | | | | |
| i. Storage vessels | NA | | | | | | | | | |
| ii. Process units – LDAR | 0.5 | 11 | 5.5 | 148 | 814 | N/A | N/A | 40.7 | 81.4 | 119,159.71 |
| iii. Process vents | 1 | 4 | 4 | 148 | 592 | N/A | N/A | 29.6 | 59.2 | 86,661.61 |
| iv. Heat exchange systems ^w | 2 | 10 | 20 | 148 | 2,960 | N/A | N/A | 148 | 296 | 433,308.04 |
| Recordkeeping subtotal | | | | | | | | 440,483.5 | | 54,585,738.61 |
| TOTAL LABOR BURDEN AND COST (Rounded) | | | | | | | | 549,980 | | 66,483,527 |
| Annualized cost of capital ^x | | | | | | | | | | 0 |
| Operation and maintenance (O&M) ^y | | | | | | | | | | 178,042 |
| TOTAL ANNUAL COST (Labor, Annualized Capital, O&M) | | | | | | | | | | 66,661,569 |

Assumptions:

- We estimate there are 148 existing petroleum refineries in the U.S. subject to NESHAP subpart CC, based on recent Agency data gathered through an ICR collection request under Section 114 of the CAA. We assume that no new refineries will become subject to this regulation. Furthermore, we estimate that a refinery has the following affected units: 9 storage vessels; 11 process units subject to LDAR provisions; 9 process vents requiring monitoring, recordkeeping, and reporting; and 3 heat exchange systems subject to a monthly sampling program for VOC leak detection and repair, as well as recordkeeping and reporting requirements to ensure compliance with the program.
- This ICR uses the following labor rates: \$133.67 per hour for technical labor; \$60.31 per hour for installation, maintenance, and repair; \$51.24 per hour for plant operators; \$164.07 per hour for executive, administrative, and managerial labor; and \$45.19 per hour for clerical labor. These rates are from the United States Department of Labor, Bureau of Labor Statistics, "May 2011 National Industry-Specific Occupational Employment Wage Estimates" for NAICS code 324100 - Petroleum and Coal Products Manufacturing. The rates have been increased by 110 percent to account for the benefit packages available to those employed by private industry.
- The labor estimates are based on an EPA Maximum Achievable Control Technology (MACT) floor cost analysis, which estimates the planning burden for a single heat exchange system to be 32 hours for technical labor and 2 labor hours for management.

- d. We assume that initial notifications and periodic reporting requirements for existing sources are accounted for in other existing NSPS and NESHAP regulations for equipment leaks, wastewater, storage tanks, and heat exchangers. This ICR only addresses the additional industry burden associated with rule requirements for the compliance reports.
- e. We assume that all existing respondents have complied with initial monitoring, recordkeeping, and reporting requirements for existing units, including initial notifications; design analysis and establishment of operating parameters for storage vessels; LDAR initial requirements; initial performance testing for process vents routed to a control device; heat exchanger requirements; and development of startup and malfunction plans and record systems for each unit. Respondents having reconstructed units, however, must comply with initial requirements. We estimate that existing refineries will reconstruct 10 percent of their existing units (i.e., 0.9 storage vessels, 1.1 process units, 0.9 process vents, and 0.3 heat exchange systems per refinery).
- f. We assume that 4 process vents per refinery are routed to control devices, and of which existing refineries will reconstruct 10 percent. Also, we assume that 50 percent of respondents will repeat performance tests.
- g. We assume all heat exchange systems at existing refineries are in compliance with the heat exchange system monitoring requirements promulgated in the last rule amendment, but would need to meet the periodic requirements. We estimate the labor burden for setup of portable air stripping column and sampling/analysis for one heat exchange system to be 1 hour for technical labor and 3 labor hours for an operator. We assume there are 3 heat exchange systems per refinery, and that the event occurs 12 times per system per year, for a total of 36 occurrences per refinery per year.
- h. We assume 2 events per year at each refinery, and estimate the labor burden for additional sampling and analysis triggered by leak monitoring to be 1 hour for technical labor and 3 labor hours for an operator.
- i. We assume 2 events per year at each refinery, and estimate the labor burden to be 40 hours per repair.
- j. New and existing refineries must submit notifications of compliance status for new or reconstructed units affected by the standard.
- k. The rule requires that sources meet specific periodic requirements including: monitoring of storage vessels annually, LDAR monitoring of process units daily, monthly monitoring of process vents, recording of process parameters and monitoring results, and submittal of periodic semiannual compliance reports addressing each affected facility and performance test result.
- l. Notifications related to construction/reconstruction and to periodic reporting for existing sources are accounted for in other existing NSPS and NESHAP regulations for equipment leaks, wastewater, storage tanks, and heat exchangers.
- m. We assume 18 labor hours per occurrence, and that there will be 2 occurrences per refinery per year.
- n. We assume 1 labor hour per occurrence, and that there will be 18 occurrences per respondent per year (9 storage vessels/refinery x 2 occurrences/storage vessel/year).
- o. We assume 3 labor hours per occurrence, and that there will be 2 occurrences per refinery per year.
- p. We assume 3 labor hours per occurrence, and that there will be 22 occurrences per respondent per year (11 process units/refinery x 2 occurrences/process unit/year).
- q. We assume 1.5 labor hours per occurrence, and that there will be 8 occurrences per respondent per year (4 process vents routed to control devices/refinery x 2 occurrences/process vent/year).
- r. We assume 2 labor hours per occurrence, and that there will be 6 occurrences per respondent per year (3 heat exchange systems/refinery x 2 occurrences/heat exchange system/year).
- s. We assume sources already have record systems in place to monitor existing operations. The burden shown below reflects reconstructed units affected by the standard.
- t. We assume 12 occurrences per respondent per year and 24 labor hours per occurrence for recordkeeping requirements associated with heat exchange systems. The labor hours are divided equally between technical and plant operators.
- u. We have included the labor associated with recording and transmitting data to develop initial and semiannual reports. We assume it takes respondents approximately 3.5 hours at each of the 9 storage vessels, 99 hours for equipment leaks at each of the 11 process units, 29 hours at each of the 4 process vents routed to control devices, and 1 hour at each of the 3 heat exchange systems.

- v. We assume existing sources will provide initial training to employees associated with new affected facilities, and that there will be periodic refresher trainings.
- w. We assume annual training for heat exchange system requirements will require 2 labor hours per operator, and assume there are 10 operators per facility.
- x. We assume that no new refineries will become subject to this regulation. New refineries will need to purchase and install LDAR equipment for heat exchange systems, including an FID analyzer and a portable air stripping column apparatus, for sample collection. For each refinery, we estimate the total cost to be \$116,870, assuming a capital discount rate of 7 percent, annual interest over 10 years, and that there will be no other capital costs associated with other affected units.
- y. The O&M cost assumes one mid-point calibration of sampling equipment prior to each sampling event. For each refinery, we assume 0.25 technical labor hours per sampling event, 12 sampling events per refinery per year, and 3 heat exchange systems per refinery.

N/A – Not Applicable

**Table 2. Average Annual EPA Burden and Cost -NESHAP for Petroleum Refineries (40 CFR Part 63, Subpart CC)
(Renewal)**

| Activity | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) |
|--|---------------------------------|---------------------------------------|--|------------------------------|--|--|---|----------------------|
| | EPA person-hours per occurrence | No. of occurrences per plant per year | EPA person-hours per plant per year (C=AxB) | Plants per year ^a | Technical person-hours per year (E=CxD) | Management person-hours per year (Ex0.05) | Clerical person-hours per year (Ex0.1) | Cost ^b \$ |
| 1. Initial notifications^c | | | | | | | | |
| Notification of reconstruction – process vents ^d | 1 | 0.4 | 0.4 | 148 | 59.2 | 2.96 | 5.92 | 3,067.89 |
| Notification of compliance status – storage vessels ^e | 1 | 0.9 | 0.9 | 148 | 133.2 | 6.66 | 13.32 | 6,902.74 |
| Notification of compliance status – equipment leaks ^e | 1 | 1.1 | 1.1 | 148 | 162.8 | 8.14 | 16.28 | 8,436.69 |
| Notification of compliance status – process vents ^e | 1 | 0.9 | 0.9 | 148 | 133.2 | 6.66 | 13.32 | 6,902.74 |
| Notification of compliance status – heat exchange systems | 2 | 0.3 | 0.6 | 148 | 88.8 | 4.44 | 8.88 | 4,601.83 |
| Notification of performance test – process vent control devices ^e | 1 | 0.4 | 0.4 | 148 | 59.2 | 2.96 | 5.92 | 3,067.89 |
| Notification of storage vessel inspections | 1 | 0.9 | 0.9 | 148 | 133.2 | 6.66 | 13.32 | 6,902.74 |
| 2. Periodic reports^f | | | | | | | | |
| Review of startup, shutdown, malfunction reports | N/A | | | | | | | |
| Semiannual parameter exceedance reports | 4 | 2 | 8 | 148 | 1,184 | 59.2 | 118.4 | 61,357.72 |
| Annual tank inspection failure reports | 4 | 1 | 4 | 148 | 592 | 29.6 | 59.2 | 30,678.86 |
| Semiannual compliance – LDAR reports | 10 | 2 | 20 | 148 | 2,960 | 148 | 296 | 153,394.3 |
| Semiannual compliance – heat exchange system reports | 1 | 2 | 2 | 148 | 296 | 14.8 | 29.6 | 15,339.43 |
| TOTAL LABOR BURDEN AND COST (Rounded) | | | | | | 6,672 | | 300,653 |

Assumptions:

- a. We estimate there are 148 existing petroleum refineries, and that no new refineries will become subject to the rule over the 3-year period of this ICR. We have further assumed that a refinery has the following affected units: 9 storage vessels; 11 process units subject to LDAR provisions; 9 process vents for requiring monitoring, recordkeeping, and reporting; and 3 heat exchange systems subject to a monthly sampling program for VOC leak detection and repair, as well as recordkeeping and reporting requirements to ensure compliance with the program.
- b. Costs are based on the following labor rates: managerial rate of \$62.27 (GS-13, Step 5, \$38.92 + 60%), technical rate of \$46.21 (GS-12, Step 1, \$28.88 + 60%), and clerical rate of \$25.01 (GS-6, Step 3, \$15.63 + 60%). These rates are from the Office of Personnel Management (OPM) "2011 General Schedule," which excludes locality rates of pay.
- c. We assume that all existing respondents have complied with initial monitoring, recordkeeping and reporting requirements for existing units, including: initial

notifications; the design analysis and establishment of operating parameters for storage vessels, LDAR initial requirements, initial performance testing for process vents routed to a control device; heat exchanger requirements, and development of startup and malfunction plans and record systems for each unit. Respondents having reconstructed units, however, must comply with initial requirements. We estimate that existing refineries will reconstruct 10 percent of their existing units (i.e., 0.9 storage vessels, 1.1 process units, 0.9 process vents, and 0.3 heat exchange systems per refinery).

d. The notification of reconstruction is only required for process vents routed to control devices. We assume that 4 process vents per refinery are routed to control devices, and of which existing refineries will reconstruct 10 percent.

e. The notification of compliance status includes performance test results, as required by the general provisions.

f. The rule requires that respondents submit semiannual compliance reports addressing each affected unit subject to the rule.

N/A – Not Applicable