EPA-453/R-94-003e

# Hazardous Air Pollutant Emissions from Process Units in the Synthetic Organic Chemical Manufacturing Industry-- Background Information for Final Standards

## Volume 2E: Comments on Recordkeeping, Reporting, Compliance, and Test Methods

Emission Standards Division

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Office of Air Quality Planning and Standards
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ENVIRONMENTAL PROTECTION AGENCY

Background Information and Final Environmental Impact Statement for Hazardous Air Pollutant Emissions from Process Units in the Synthetic Organic Chemical Manufacturing Industry
Volume 2E: Comments on Recordkeeping, Reporting, Compliance, and Test Methods

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2/8/94

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(Date)

1. The standards regulate emissions of organic hazardous air pollutants (HAP's) emitted from chemical manufacturing process units in the Synthetic Organic Chemical Manufacturing Industry (SOCMI) and from other processes subject to the negotiated regulation for equipment leaks. Only those chemical manufacturing process units that are part of major sources under Section 112(d) of the Clean Air Act (Act) will be regulated. The standards will reduce emissions of 112 of the organic chemicals identified in the Act list of 189 HAP's.

2. Copies of this document have been sent to the following Federal Departments: Labor, Health and Human Services, Defense, Transportation, Agriculture, Commerce, Interior, and Energy; the National Science Foundation; and the Council on Environmental Quality. Copies have also been sent to members of the State and Territorial Air Pollution Program Administrators; the Association of Local Air Pollution Control Officials; EPA Regional Administrators; and other interested parties.

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# OVERVIEW

Emission standards under section 112(d) of the Clean Air Act (Act) apply to new and existing sources in each listed category of hazardous air pollutant (HAP) emission sources. This background information document (BID) provides summaries and responses for public comments received regarding the Hazardous Organic National Emission Standard for Hazardous Air Pollutants (NESHAP), commonly referred to as the HON. The HON will primarily affect the Synthetic Organic Chemical Manufacturing Industry (SOCMI). However, the provisions for equipment leaks also apply to certain polymer and resin production processes, certain pesticide production processes, and certain miscellaneous processes that are subject to the negotiated regulation for equipment leaks.

This BID comprises six volumes as follows:

- Volume 2A: Comments on Process Vents, Storage Vessels, Transfer Operations, and Equipment Leaks (EPA-453/R-94-003a);
- Volume 2B: Comments on Wastewater (EPA-453/R-94-003b);
- Volume 2C: Comments on Emissions Averaging (EPA-453/R-94-003c);
- Volume 2D: Comments on Applicability, National Impacts, and Overlap with Other Rules (EPA-453/R-94-003d);
- Volume 2E: Comments on Recordkeeping, Reporting, Compliance, and Test Methods (EPA-453/R-94-003e); and
- Volume 2F: Commenter Identification List (EPA-453/R-94-003f).

Volume 2A is organized by emission point and contains discussions of specific technical issues related to process

vents, storage vessels, transfer operations, and equipment leaks. Volume 2A discusses specific technical issues such as control technology, cost analysis, emission estimates, Group 1/Group 2 determination, compliance options and demonstrations, and monitoring.

Volume 2B addresses issues related to controlling emissions from wastewater. Specific technical issues include control technology, cost analysis, emission estimates, Group 1/Group 2 determination, compliance options and demonstrations, and monitoring.

Volume 2C contains the EPA's decisions regarding emissions averaging. Specific issues include the scope of emissions averaging in the HON, specific provisions related to credits and banking, and enforcement of an emissions averaging system for the HON.

Volume 2D discusses applicability of the HON in terms of selection of source category, selection of source, and selection of pollutants. Volume 2D also addresses the process for determination of the MACT floor and selection of the specific applicability thresholds for process vents, storage vessels, transfer racks, wastewater operations, and equipment leaks.

Volume 2E discusses the provisions for compliance, recordkeeping and reporting. Volume 2E also discusses issues related to the use of EPA test methods.

Volume 2F of each volume contains a list of commenters, their affiliations, and the EPA docket and item number assigned to each comment.

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## ACRONYM AND ABBRIEVIATION LIST

| ACRONYM | TERM |
|---|---|
| Act | Clean Air Act |
| ALAPCO | Association of Local Air Pollution Control Officers |
| ASPEN | advanced system for process engineering |
| BACT | best available control technology |
| BAT | best available technology |
| BD | butadiene |
| BID | background information document |
| BIF | boilers and industrial furnaces |
| CEM | continuous emissions monitoring |
| CFR | Code of Federal Regulations |
| CMA | Chemical Manufacturers Association |
| CMPU | chemical manufacturing process unit |
| CO | carbon monoxide |
| CTG | control techniques guideline |
| CWA | Clean Water Act |
| DMS | dual mechanical seal |
| DOT | Department of Transportation |
| DRE | destruction and removal efficiency |
| EB/S | ethylbenzene/styrene |
| EDC | ethylene dichloride |
| EFR | external floating roof |
| EO | ethylene oxide |
| E.O. | Executive Order |
| EPA | Environmental Protection Agency |
| Fe | fraction emitted |
| Fm | fraction measured |
| FR | FEDERAL REGISTER |
| Fr | fraction removed |
| FTIR | Fourier transform infrared |
| HAP | hazardous air pollutant |

ACRONYM AND ABBRIEVIATION LIST, CONTINUED

| ACRONYM | TERM |
|---|---|
| HON | hazardous organic national emission standards for hazardous air pollutants |
| IFR | internal floating roof |
| LDAR | leak detection and repair |
| LAER | lowest achievable emission rate |
| MACT | maximum achievable control technology |
| MIBK | methyl isobutyl ketone |
| MR | mass removal (actual) |
| NCS | Notification of Compliance Status |
| NESHAP | national emission standards for hazardous air pollutants |
| $NO_x$ | nitrogen oxides |
| NPDES | National Pollutant Discharge Elimination System |
| NRDC | Natural Resources Defense Council |
| NSPS | new source performance standards |
| NSR | new source review |
| OCCM | Office of Air Quality Planning and Standards Control Cost Manual |
| OCPSF | organic chemicals, plastics, and synthetic fibers |
| OMB | Office of Management and Budget |
| OSHA | Occupational Safety and Health Administration |
| P.L. | Public Law |
| PAV | product accumulator vessel |
| POM | polycyclic organic matter |
| POTW | publicly owned treatment works |
| PRA | Paperwork Reduction Act |
| PRV | pressure relief valve |
| PSD | prevention of significant deterioration |
| QIP | quality improvement program |

ACRONYM AND ABBRIEVIATION LIST, CONTINUED

| ACRONYM | TERM |
|---|---|
| R & D | research and development |
| RCRA | Resource Conservation and Recovery Act |
| RCT | reference control technology |
| RIA | Regulatory Impact Analysis |
| RMR | required mass removal |
| SARA | Superfund Amendment and Reauthorization Act |
| SIP | State Implementation Plan |
| SMS | single mechanical seal |
| SOCMI | synthetic organic chemical manufacturing industry |
| STAPPA | State and Territorial Air Pollution Program Administrators |
| TAC | total annual cost |
| TACB | Texas Air Control Board |
| TCI | total capital investment |
| THC | total hydrocarbon |
| TIC | total industry control |
| TOC | total organic compound |
| TRE | total resource effectiveness |
| TRI | toxics release inventory |
| TSDF | treatment, storage, and disposal facility |
| VHAP | volatile hazardous air pollutant |
| VO | volatile organics measurable by Method 25D |
| VOC | volatile organic compound |
| VOHAP | volatile organic hazardous air pollutant |

| ABBREVIATION | UNIT OF MEASURE |
|---|---|
| bbl | barrel |
| BOE | barrels of oil equivalent |

ACRONYM AND ABBRIEVIATION LIST, CONTINUED

| ABBREVIATION | UNIT OF MEASURE |
|---|---|
| Btu | British thermal unit |
| Btu/kW-hr | British thermal unit per kilowatt-hour |
| $^{o}C$ | degrees Celsius |
| $^{o}F$ | degrees Fahrenheit |
| gal | gallon |
| gpm | gallons per minute |
| hr | hour |
| kg/hr | kilograms per hour |
| kPa | kilopascals |
| kW-hr/yr | kilowatt-hour per year |
| $\ell$/hour•$m^2$ | liters per hour per square meter |
| $\ell$pm | liters per minute |
| gal | gallons |
| $m^3$ | cubic meters |
| Mg | megagrams |
| mg | milligrams |
| mg/dscm | milligram per dry standard cubic meter |
| MW | megawatts |
| ppb | parts per billion |
| ppm | parts per million |
| ppmv | parts per million by volume |
| ppmw | parts per million by weight |
| psia | pounds per square inch absolute |
| scm/min | standard cubic meter per minute |
| TJ | terajoules |
| yr | year |

## LIST OF FREQUENTLY USED TERMS

Accidental release prevention rule means the rule located in subpart C of part 68 of title 40 of the Code of Federal Regulations. This rule implements section 112(r) of the Act. This rule proposed a list of chemicals and threshold quantities that will identify facilities subject to subsequent accident prevention regulations to ensure that facilities reduce the likelihood and severity of accidental chemical releases that could harm the public and the environment. The proposed rule was published in the Federal Register on January 19, 1993 (58 FR 5102).

Act means the Clean Air Act as amended in 1990.

Administrator means the Administrator of the U. S. Environmental Protection Agency or his or her authorized representative (e.g., a State that has been delegated the authority to implement the provisions of part 63).

Enhanced monitoring rule means the rule to be located in sections 64.1 through 64.9 of part 64 of title 40 of the Code of Federal Regulations. This rule implements section 702(b) of title VII of the 1990 Clean Air Act Amendments. This rule establishes the criteria and procedures that owners or operators must satisfy in evaluating, selecting and demonstrating enhanced monitoring, and includes appendices containing enhanced monitoring performance and quality assurance requirements. The enhanced monitoring rule does not apply to sources subject to 40 CFR part 63, and therefore does not apply to sources subject to the HON. The proposed rule was published in the Federal Register on October 22, 1993 (58 FR 54648).

General Provisions means the general provisions located in subpart A of part 63 of title 40 of the Code of Federal Regulations. These General Provisions codify national

emission standards for hazardous air pollutants (NESHAP) for source categories covered under section 112 of the Act as amended November 15, 1990.

Implementing agency means the Administrator of the U. S. Environmental Protection Agency or a State, federal, or other agency that has been delegated the authority to implement the provisions of part 63. Under section 112(l) of the Act, States and localities may develop and submit to the Administrator for approval a program for the implementation and enforcement of emission standards. A program submitted by the State under section 112(l) of the Act may provide for partial or complete delegation of the Administrator's authorities and responsibilities to implement and enforce emission standards.

Operating permit program rule means the rule located in sections 70.1 through 70.11 of part 70 of chapter I of title 40 of the Code of Federal Regulations. This rule implements section 502(b) of title V of the 1990 Clean Air Act Amendments. Under this rule, States are required to develop, and to submit to the EPA, programs for issuing operating permits to major stationary sources (including major sources of hazardous air pollutants listed in section 112 of the Act), sources covered by New Source Performance Standards (NSPS), sources covered by emissions standards for hazardous air pollutants pursuant to section 112 of the Act, and affected sources under the acid rain program. The final rule was published in the Federal Register on July 21, 1992 (57 FR 32250).

Permitting authority means: (1) the State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit

program under part 70; or (2) the Administrator, in the case of EPA-implemented permit programs under part 71.

Section 112(g) rule means the rule to be located in subpart B of part 63 of title 40 of the Code of Federal Regulations. This rule implements section 112(g) of the 1990 Clean Air Act Amendments. This rule will impose control technology requirements on "constructed, reconstructed or modified" major sources of hazardous air pollutants not already regulated by a section 112(d) or 112(j) MACT standard.

Section 112(l) rule means the rule located in subpart E of part 63 of title 40 of the Code of Federal Regulations. Under this rule, a State or locality may submit a program to the Administrator to request partial or complete delegation of the Administrator's authorities and responsibilities to implement and enforce section 112 emission standards. The final rule was published in the Federal Register on November 26, 1993 (58 FR 62262).

Title III means title III of the 1990 Clean Air Act Amendments. Section 112 of the Act authorizes the EPA to establish MACT standards.

Title V means title V of the 1990 Clean Air Act Amendments, which authorizes the EPA to establish the operating permit program.

Title VII means title VII of the 1990 Clean Air Act Amendments. Section 702(b) of the Act authorizes the EPA to establish compliance certification procedures. The part 64 enhanced monitoring rule implements section 702(b).

# 1.0 INTRODUCTION

On December 31, 1992, the U.S. Environmental Protection Agency (EPA) proposed the Hazardous Organic National Emission Standard for Hazardous Air Pollutants (NESHAP) for process units in the synthetic organic chemical manufacturing industry (SOCMI) under section 112(d) of the Clean Air Act (57 FR 62608). Public comments were requested on the proposed standard and comment letters were received from industry representatives, governmental entities, environmental groups, and private citizens. Two public meetings were held, one in Research Triangle Park (RTP), North Carolina, on February 25, 1993, and another in Baton Rouge, Louisiana, on March 18, 1993. Both hearings were open to the public and 5 persons in RTP and 45 persons in Baton Rouge presented oral testimony on the proposed NESHAP.

On August 11, 1993, the General Provisions for part 63 (58 FR 42760) were proposed. In order to allow the public to comment on how the General Provisions relate to the Hazardous Organic NESHAP (HON), a supplemental notice (October 15, 1993; 58 FR 53478) was published. Public comments were requested on the overlap between the General Provisions and the HON and on some specific emissions averaging issues. Comment letters regarding the supplemental notice were received from 80 commenters.

The written comments that were submitted and verbal comments made at the public hearing regarding the policy and technical issues associated with recordkeeping and reporting, compliance, and test methods in the proposed rule and supplemental notice, along with responses to these comments, are summarized in the following chapters. In chapter 2.0, the

EPA responds to comments pertaining to the recordkeeping and reporting required by the HON. Chapter 3.0 provides summarized comments and responses on compliance matters. Chapter 4.0 contains the summarized comments regarding test methods utilized in the HON. The summary of comments and responses serves as the basis for the revisions made to the NESHAP between proposal and promulgation.

# 2.0 RECORDKEEPING AND REPORTING

## 2.1 FIVE REPORT SYSTEM

Comment: One commenter (A-90-19: IV-D-32) supported the proposed three-step system for one-time reporting, comprised of an Initial Notification, Implementation Plan (if no permit application has been filed), and Notification of Compliance Status. Another commenter (A-90-19: IV-D-73) suggested compiling all notifications and reports into the Initial Notification, Implementation Plan, or permit application, and Periodic Report, and not requiring any other additional notifications or reports.

Response: The EPA believes that the recordkeeping and reporting requirements in the HON are the minimum necessary to determine compliance on a continuous basis. Sources are required to submit the following five types of reports: (1) Initial Notification; (2) Implementation Plan; (3) Notification of Compliance Status; (4) Periodic Reports; and (5) other reports. The Initial Notification establishes an early dialogue between the source and the implementing agency, and allows both to plan for compliance activities. The Implementation Plan provides the details of how the source plans to comply with subpart G of the HON in those cases when an operating permit application has not already been submitted. The Notification of Compliance Status includes information necessary to demonstrate that compliance has been achieved, such as the results of performance tests, TRE determinations, and design analyses. The periodic reports are used to show that control devices continue to be operated and maintained properly and to identify periods when the values of monitored parameters are outside the specified ranges. A

limited number of other reports are required when it is necessary for the source to provide information to the implementing agency shortly before or after a specific event. The necessary information could not be included in the periodic report since the owner or operator will need a quick response from the implementing agency.

Commenter A-90-19: IV-D-73 is implicitly asking the EPA to remove from the HON the requirements for submitting the Notification of Compliance Status and other reports. For the reasons stated above, the EPA considers the timely submission of these reports essential to the successful implementation and compliance determinations of the HON, and the reports will not be removed from the rule.

2.1.1 Initial Notification

2.1.1.1 New Sources

Comment: Three commenters (A-90-19: IV-D-74; IV-K-24; IV-K-73) stated that the provisions requiring submittal of an Initial Notification for new sources are burdensome. One of the commenters (A-90-19: IV-K-73) argued that the Initial Notification is redundant with title V requirements. Two of the commenters (A-90-19: IV-D-74; IV-K-24) stated that the purpose of this notification has not been made clear. One of the commenters (A-90-19: IV-D-74) requested that the EPA review the HON reporting requirements for new sources taking into consideration that for existing technology-based programs, such as NSPS, notifications are not submitted by the source until construction has commenced and subsequent notices inform the agency of the start-up of the source.

Three commenters (A-90-19: IV-D-29; IV-K-6; IV-K-66) requested that the EPA clarify the notification requirements in the General Provisions and the HON by choosing one deadline for notification. Another commenter (A-90-19: IV-K-73) requested that the 45 days for preparation of the Initial Notification contained in the proposed HON be extended to 90 days to allow a source enough time to review and prepare the notification. Regarding new sources, the commenter (A-90-19: IV-D-29) noted that §63.9(b)(4)(i) of the draft

General Provisions requires an application for approval of construction or reconstruction, and §63.151(b)(2)(ii) of the proposed HON requires that the Initial Notification be submitted at least 180 days before construction is planned to commence.

Response: The provisions regarding submittal of the Initial Notification for new sources have been revised. In the final rule, new sources that start-up more than 90 days after promulgation are not required to submit an Initial Notification. Instead, these new sources are required to submit an application for approval of construction or reconstruction as described in §§63.5(d) and 63.9(b)(5) of the General Provisions. The application is due 180 days before commencement of construction, or 90 days after promulgation of the HON, whichever is later. The HON rule is changing the due date contained in the General Provisions §63.5(d) to 90 days after promulgation for submittal of the application. Because SOCMI sources are large and diverse and individual sources may have hundreds of emission points subject to the HON rule, and because of the complexity of the HON rule, a source may need more time than 45 days to review the promulgated rule and prepare the application. The Initial Notification is not required for these new sources because the information will be contained in the application for approval of construction or reconstruction. Instead, these new sources must submit the application for approval of construction or reconstruction with the Implementation Plan 180 days before commencement of construction or 90 days after promulgation of the HON, whichever is later.

However, new sources that have already started up prior to 90 days after promulgation are not required by the General Provisions or the HON rule to submit an application for approval of construction or reconstruction, because construction has already been completed. These sources will be required to submit an Initial Notification and an Implementation Plan within 90 days after promulgation of the HON.

Comment: Two commenters (A-90-19: IV-D-67; IV-D-74) opposed the provisions in proposed §63.151 (b)(2)(ii) requiring the Initial Notification to be submitted 180 days prior to the construction of a new source or reconstruction of an existing source, which would constitute a new source for the purposes of this rule. The commenters (A-90-19: IV-D-67; IV-D-74) stated that depending on the definition of construction and reconstruction, the source could experience delays for some projects.

One of the commenters (A-90-19: IV-D-67) suggested that provisions for agency review of new sources prior to construction similar to General Provisions in 40 CFR part 61 be written into the General Provisions in 40 CFR part 63. The commenter (A-90-19: IV-D-67) asserted that this would allow a source to start construction as soon as authorization is received from the regulatory agency, which could be sooner than 180 days.

Response: As described in the previous response, new sources that start up more than 90 days after promulgation are not required to submit an Initial Notification. These sources are required to submit an application for approval of construction or reconstruction and the information required in the Initial Notification will already be contained in the application. The application and the Implementation Plan are due 180 days before commencement of construction, or 90 days after promulgation, whichever is later. A source is always allowed to submit a report prior to the due date.

Comment: One commenter (A-90-19: IV-K-73) argued that the Initial Notification is redundant with title V requirements, where sources will be required to inventory all emission points and emissions, and detail their compliance strategies.

Response: As discussed already, new sources that start more than 90 days after promulgation are not required to submit an Initial Notification. These new sources are required to submit an application for approval of construction or reconstruction. New sources that have already started up

prior to 90 days after promulgation are not required to submit an application for approval of construction or reconstruction, because construction has already been completed, but are required to submit an Initial Notification. While it is true that the operating permit program does require an inventory of all emission points and detailed compliance strategies, the purpose of the Initial Notification is to list the chemical manufacturing process units that are subject to subpart G, and which provisions may apply (e.g., process vents, transfer operations, storage vessels, and/or wastewater provisions). A detailed identification of emission points is not necessary for the Initial Notification. A source is not required to detail their compliance strategy, as the commenter had suggested in their comment. However, the notification must include a statement of whether the source expects that it can achieve compliance by the specified compliance date.

Comment: Two commenters (A-90-19: IV-D-74; IV-K-24) expressed concern that substantial technical information must be submitted with the Initial Notification for new sources that may comply using emissions averaging. This information, which includes the definition of each point and the specific control technology for each point, may not be known 180 days in advance of commencement of construction. The commenter (A-90-19: IV-D-74) stated that construction permits may be granted based on a generic control efficiency requirement without specification of the device and therefore decisions on control device may not be made until after commencement of construction.

Response: During the period between proposal and promulgation, the EPA reviewed the emissions averaging provisions and decided not to allow new sources to use emissions averaging. A discussion of this emissions averaging decision is contained in section 2.3.2 of BID volume 2C.

2.1.1.2 Area Sources

Comment: Several commenters (A-90-19: IV-D-26; IV-D-32; IV-D-73; IV-D-98; IV-K-6; IV-K-24) opposed the provisions in §63.151(b)(1)(vi) requiring area sources to submit an Initial

Notification, which would include an analysis demonstrating that they are an area source. Two of the commenters (A-90-19: IV-D-26; IV-D-73) noted that area sources are not subject to subpart G of the HON. The commenters (A-90-19: IV-D-26; IV-D-73) argued that this level of reporting is burdensome and unnecessary for area sources and recommended deleting the requirement from the final rule. Three commenters (A-90-19: IV-D-26; IV-D-73; IV-K-6) went on to state that proposed §63.151(b) limits applicability to sources subject to subpart G, that the applicability of subpart G is limited to major sources [proposed §63.100(b)(1)(i)], and that the Act does not require such a notification from area sources.

On the other hand, one commenter (A-90-19: IV-K-72) supported requiring both affected (major) and unaffected (area) sources to submit an Initial Notification to allow the EPA to make a determination as to whether the source must comply with the HON or not. Although, the commenter (A-90-19: IV-K-72) recognized that requiring unaffected sources to submit an Initial Notification would be an additional reporting burden for the industry, the commenter felt this burden was outweighed by the advantages of all sources being made aware of the rule, so as to ensure identification of all affected sources.

Response: The final HON does not require area sources to submit an Initial Notification. The proposed General Provisions requested comment on whether to require an Initial Notification by area sources and commenters responded that area sources would not be subject to some NESHAP, such as the HON, and therefore should not be required to submit reports. Thus, the final General Provisions were revised and no longer require that area sources submit the Initial Notification. For these reasons, and so the HON would be consistent with the General Provisions, the provisions in the HON requiring an analysis to demonstrate that a source is an area source were removed from subpart G.

The EPA agrees with the concern of commenter (A-90-19: IV-K-72) that all affected sources comply with the HON.

Because each source within a regulated category of sources must determine whether it is a major or area source and maintain a record of this determination, each source would know whether they were subject to the HON or not.

2.1.1.3 Compliance Timing and Extensions

Comment: One commenter (A-90-19: IV-D-34) stated that at the time the Initial Notification is submitted (120 days after promulgation), it will be difficult to determine whether a source can achieve compliance by the compliance date and that this requirement [proposed §63.151(b)(1)(v)] should be deleted from the final rule.

One commenter (A-90-19: IV-D-29) was uncertain when to submit the request for compliance extension because the HON proposal overrode §§63.9(c) and 63.9(b)(2) and (b)(3) of the draft General Provisions, which required the submittal of a request for a compliance extension with the Initial Notification.

Response: The purpose of the statement required by §63.151(b)(1)(v) of the HON is merely to determine if the source anticipates having problems complying by the compliance date. This statement is not enforceable. As stated in §63.151(a)(6) of the proposed rule, requests for compliance extensions shall be submitted with the operating permit application. However, if a State does not yet have an approved operating permit program, the extension request may be submitted with the Initial Notification or as a separate submittal no later than the date the Implementation Plan is due. For an existing source, this would be 18 months before the compliance date for emission points included in an emissions average, and 12 months before the compliance date for emission points not included in an emissions average. This timing is consistent with §63.6(i) of the General Provisions.

Comment: One commenter (A-90-19: IV-D-74) requested that the EPA consider modifying the definitions of construction and reconstruction to allow equipment purchases

to occur without triggering submission of the Initial Notification.

Response: The definitions of construction and reconstruction are contained in the General Provisions. The General Provisions state that if the fixed capital cost of the components exceeds 50 percent of the fixed capital cost of constructing a comparable new source in that source category, and it is technologically and economically feasible for the reconstructed source to meet the promulgated emission standard, then the source is considered to be "reconstructed" and is subject to new source provisions of any NESHAP. In such a case, the source will be required to submit all required reports, including the Initial Notification or application for approval of construction or reconstruction, as applicable, for a new source. Provisions have been added to §63.102(l) of subpart F that clarify how do determine whether an addition or change constitutes a new or reconstructed source. This section cross-references and is consistent with the General Provisions. Section 63.100(l) also specifies reporting requirements.

It should be noted that, given the fairly broad definition of "source" in the HON, replacement of a single piece of equipment is unlikely to result in the source being considered new or reconstructed. Instead, the new equipment is likely to be considered an addition to the existing source and thus would have to meet the provisions for existing sources.

2.1.2 Implementation Plan

Comment: One commenter (A-90-19: IV-D-74) stated that the provisions requiring submittal of an Implementation Plan are burdensome and that the purpose of this report has not been made clear.

Two commenters (A-90-19: IV-D-32; IV-D-86) supported the provisions requiring sources to submit an Implementation Plan only if an application for an operating permit has not been submitted.

Response: Implementation Plans are required only for sources that have not previously submitted an operating permit application. If an operating permit program is in place in time, then the source will submit an operating permit application, and an Implementation Plan is not required. The operating permit application would contain all the types of information required in the Implementation Plan, so it would be redundant to require sources to submit both.

It is critical that the implementing agency have the Implementation Plans well before the compliance date so they can plan their implementation and enforcement activities. Submission of these plans may also benefit regulated sources by allowing them to receive feedback on their control plans prior to the actual compliance dates. The Implementation Plan will not be overly burdensome because sources are expected to have the information required in the Implementation Plan available by the time the plan is required (12 or 18 months before compliance). Regardless of the Implementation Plan, a source would need to know which points are Group 1 and what controls will be applied to each point by this time in order to install controls prior to the compliance date.

The Implementation Plan for points included in an emissions average are more detailed and thorough than the plans for other emission points. This additional information is necessary for the implementing agency to make an informed decision about approving the average. Because of the complexities and site-specific nature of emissions averaging, an approval process is necessary to assure all parties that the specific plan will result in emissions credits outweighing debits.

Comment: One commenter (A-90-19: IV-D-32) agreed with the proposed 12- and 18-month deadlines for sources to submit the Implementation Plan. Another commenter (A-90-19: IV-D-85) suggested that Implementation Plans be submitted 12 months after promulgation or 24 months before compliance because review of plans will take a substantial amount of time

and if a plan is disapproved the source will need time to adjust their compliance plans before the compliance date.

Response: After consideration, the EPA concluded that the current deadline system is reasonable and allows enough time for review by the implementing agency. One consideration is that it would be difficult for sources to develop complete plans in just 12 months. Sources may have hundreds of emission points subject to subpart G. It will take time for them to develop data characterizing each emission point in order to determine whether it is Group 1 or Group 2. For process vents and wastewater, testing may be necessary to make the group determination. The owner or operator will then need time to investigate the feasibility and costs of the various alternative control devices that can be used to achieve compliance and to investigate emissions averaging possibilities. After a decision is made, time is needed to prepare the written Implementation Plan.

The final rule reflects a balance between the time needed to prepare and to review the Implementation Plan within the three-year compliance timeframe. As at proposal, Implementation Plans for existing sources are due 12 months before compliance for emission points not included in emission averages, and 18 months before compliance for points in emissions averages. In the final rule, provisions were added requiring that Implementation Plans for sources that are emissions averaging be approved, whereas Implementation Plans for points not included in emissions averaging do not require approval. The schedule for new sources has been slightly revised in response to comments. See the response to the following comment for more details on this subject.

Comment: One commenter (A-90-19: IV-D-36) opposed the provisions in proposed §63.151(c)(2)(ii) requiring a new source that has commenced construction after the rule was proposed but before the rule was promulgated to submit an Implementation Plan within 45 days after the rule is promulgated. The commenter (A-90-19: IV-D-36) argued that 45 days is not enough time to read the rule and gather and

compile the required information and that additional personnel would be needed to assist in this enormous undertaking. The commenter (A-90-19: IV-D-36) realized that an Implementation Plan is not required if an application for an operating permit has been submitted, but the commenter thought it unlikely that a source would have done so at this point. Therefore, the commenter (A-90-19: IV-D-36) requested that new sources be allowed up to two years from promulgation to submit their Implementation Plans, as required for existing sources under proposed §63.151(c)(1)(ii).

Response: The EPA agrees with the commenters' concerns, and has revised the final rule to require new sources that start up shortly before or within 90 days after promulgation of the HON to submit the Initial Notification and Implementation Plan within 90 days after promulgation. The EPA agrees with the commenter that, because of the large number of emission points at sources subject to the HON, 45 days is inadequate to complete group determinations and prepare a detailed Implementation Plan. In order to minimize the number of reports, the Initial Notification and Implementation plan for new sources that start up before or within 90 days of promulgation may be submitted together.

New sources that start up later than 90 days after promulgation are required to submit an application for approval of construction or reconstruction described in §63.5(d) of the General Provisions. The contents of the application for approval of construction or reconstruction may be found in §§63.5(d)(1)(ii) and (d)(2) of the General Provisions. The EPA is overriding the provisions in §63.5(d)(1)(i) that require the application for approval of construction or reconstruction to be submitted within 45 days after promulgation or 180 days prior to construction, and is instead requiring that it be submitted within 90 days after promulgation or 180 days prior to construction, whichever is later. The Implementation Plan is required at the same time. These sources are not required to submit an Initial Notification, as this information would already be included in

the application for approval of construction or reconstruction.

In response to the commenter's request that new sources be allowed up to two years to submit their Implementation Plans, the Act requires new sources to comply at start-up or promulgation, whichever is later. Existing sources are required to be in compliance within three years of promulgation. The HON cannot override the Act.

Comment: One commenter (A-90-19: IV-F-7.39 and IV-F-12) indicated that the Implementation Plan provisions allow an operator to change the plan in order to avoid detection anytime a violation seems imminent, and that this would be an abuse of the system. Another commenter (A-90-19: IV-D-117) stated that enforcement of the HON will prove difficult if sources can change their Implementation Plans without prior approval.

Another commenter (A-90-19: IV-D-32) agreed with the provisions allowing a source to update the Implementation Plan in order to reflect changes in a source's compliance strategy as new information becomes available. The commenter (A-90-19: IV-D-32) stated that these provisions are along the same lines as the title V operating permit rule section 70.5(b) requiring sources to promptly submit supplementary facts or corrected information. One commenter (A-90-19: IV-D-98) requested provisions clarifying the process for modifying the Implementation Plan.

Response: Under §63.151(i) and §63.151(j), each owner or operator who has submitted an Implementation Plan and who changes their compliance strategy is required to submit written updates if there is: (1) a change from a control technique or monitoring parameter specified in the Implementation Plan; (2) a new emission point included in an emissions average; (3) a change in the Group status of an emission point; (4) for a point in an emission average, a change in the value of a parameter in the emission credit or debit equation so it is outside the range specified in the

plan and causes a decrease in the credit or an increase in the debit; or (5) a new emission point is added.

In response to comments, the EPA reviewed the provisions contained in the rule. For emission points in an emissions average, the final rule has been revised to require the source to submit written updates to the implementing agency for approval 120 days before a change that is planned in advance. This advance notice is required for the changes listed in §63.151(i)(1), (addition of a new emission point or change in control technique) because these types of changes are planned in advance. If the information concerning a change is not known in advance, such as an unanticipated operational change that affects the group status of a point or causes a parameter value to change as specified in §63.151(i)(2), the source must submit the written updates to the implementing agency within 90 days after the information is known, or in the next quarterly report if the compliance date has already passed. The implementing agency has 120 days in which to approve the written updates.

For emission points that are not in an emissions average, written updates to the Implementation Plan must be submitted within 180 days of when the change is made or the information concerning a change is known. The written update may be submitted in the next periodic report if the compliance date has already passed. The implementing agency need not approve the written updates for a source not emissions averaging. This is consistent with the requirement that Implementation Plans for emissions averaging must be approved, while Implementation Plans for points not included in emissions averaging do not require approval.

Updating a plan will not allow a source to "avoid detection" or evade compliance. Starting on the compliance date, all Group 1 points must be controlled to the levels achieved by the RCT or, if emission points are included in an emissions average, emission credits and debits (based on actual operation) must balance. Updating an Implementation Plan does not allow a source to violate these standards

because the Implementation Plan does not provide a shield. The control scenario documented in the Implementation Plan must meet the requirements of the HON, or the source will be considered in violation of the HON.

Comment: One commenter (A-90-19: IV-D-73) supported Implementation Plan updates to record significant changes such as Group 1/Group 2 status under proposed §63.151(h)(1). However, the commenter (A-90-19: IV-D-73) recommended deleting proposed §§63.151(h)(2) and (4) and any other unscheduled Implementation Plan updates for events other than those in proposed §63.151(h)(1). The commenter (A-90-19: IV-D-73) contended that these changes would be reported in the periodic reports.

The commenter (A-90-19: IV-D-73) also recommended revising proposed §63.151(h)(4) to require an update of the Implementation Plan only if a new Group 1 emission point is added and not for instances such as when a process pump or valve is installed.

One commenter (A-90-19: IV-D-64) stated that Implementation Plan updates should be included in the periodic reports.

Response: It is necessary to update the Implementation Plan if any of the circumstances listed in §63.151(h)(2) through §63.151(h)(4) of the proposed rule occur. These provisions are contained in §63.151(i) and (j) of the final rule.

As specified in §63.151(i) and §63.151(j), updates are required if there is: (1) a change from a control technique or monitoring parameter specified in the Implementation Plan; (2) a new emission point included in an emissions average; (3) a change in the Group status of an emission point; (4) for a point in an emission average, a change in the value of a parameter in the emission credit or debit equation so it is outside the range specified in the plan and causes a decrease in the credit or an increase in the debit; or (5) a new emission point is added. In order to plan for enforcement before the compliance date, and to enforce the rule after the

compliance date, the implementing agency needs to know which emission points are subject to subpart G and exactly how compliance will be achieved and monitored at each emission point.

Because the Implementation Plan for emissions averaging must be approved, a change in the parameters used to calculate credits and debits that is outside the ranges specified in the plan and that decreases credits or increases debits must also be submitted for approval. This will give both the source and the implementing agency confidence that the revised averaging plan will result in compliance.

Both new Group 1 and Group 2 points must be reported, along with the basis of the group determination, because it is necessary to verify that Group 2 points are correctly classified. New process pumps and valves would not be reported because these equipment are subject to subpart H, not subpart G. The Implementation Plan provisions are in subpart G and apply only to emission points subject to subpart G.

The dates for submittal of Implementation Plan updates are contained in the previous response. In some cases, these updates can be submitted as part of the periodic reports instead of separate submittals. Once an operating permit is issued, the Implementation Plan is no longer enforceable and written updates to the plan are not required. However, the source will be required to follow the procedures specified in the permit program rule if updates and changes are made to the operating permit.

Comment: Two commenters (A-90-19: IV-F-1.3 and IV-F-5; IV-F-1.4) urged the EPA to allow existing sources, who plan to emissions average and who have not been in operation for 18 months prior to the compliance date, to be allowed to calculate the plant site's emissions for the time it has been in operation if this period is less than 18 months.

Response: Because existing sources are defined as sources that commenced construction before proposal (December 1992), the vast majority of existing sources are already in

operation or will be in operation more than 18 months before the compliance date. Owners or operators of existing sources who plan to comply through emissions averaging and have not submitted an operating permit application must submit an Implementation Plan no later than 18 months prior to the compliance date.

The Implementation Plan will include emissions calculations to project credits and debits. The calculations do not require 18 months of data. In fact, no test data are required. Sections 63.151(d)(2) and (d)(6) through (d)(8) of subpart G make it clear that for the purpose of the Implementation Plan, the parameter values in the emission credit and debit equations may be estimated.

Comment: One commenter (A-90-19: IV-D-32) stated that the Implementation Plan is an important informational and planning document, not an enforceable commitment. Another commenter (A-90-19: IV-D-98) was unclear as to whether milestones discussed in the Implementation Plan are enforceable, or whether compliance by the effective date is the sole enforceable element.

Three commenters (A-90-19: IV-D-32; IV-D-33; IV-D-73) stated that the provisions to require written compliance certifications as part of the Implementation Plan should be deleted. One commenter (A-90-19: IV-D-73) suggested deleting all requirements for submittal of written statements in §63.151(d) for emission points in an emissions average. The commenter (A-90-19: IV-D-73) maintained that the certifications serve no purpose since these emission points will already be identified in the Implementation Plan, will be included in quarterly reports, and compliance is certified annually under the operating permit program rule. One commenter (A-90-19: IV-D-32) argued that compliance certifications are properly found under the part 70 operating permit program, and therefore should not be required in the Implementation Plan. The other commenter (A-90-19: IV-D-33) contended that certification should only be required when a source is required to submit a compliance plan with its permit

application in conformance with an approved operating permit program.

Response: While the commenter (A-90-19: IV-D-32) is correct in stating that the Implementation Plan is an important informational and planning tool for both the source and the permitting authority, it is enforceable after the compliance date, if an operating permit application has not been submitted for approval. Because an Implementation Plan is only required if an operating permit application has not already been submitted for approval, this does not duplicate or conflict with the operating permit program requirements. However, once the operating permit has been approved, the Implementation Plan will no longer be enforceable.

The EPA has revised the final rule in §63.151(e)(3) to require a statement that the compliance demonstration, monitoring, inspection, recordkeeping, and reporting provisions will be implemented beginning on the date of compliance. All references to "certifications" were removed from this section. The required statement is not the same as the annual compliance certifications which are required under section 114(a)(3) of the Act and section 70.6(c) of the operating permit program rule.

Comment: One commenter (A-90-19: IV-D-33) recommended that information required to be submitted in the Implementation Plan under proposed §63.151(e)(4) such as the requirements under proposed §63.120(d)(1) be submitted as part of the Notification of Compliance Status, instead of with the Implementation Plan as currently required, because the information will likely not be available until after start-up of the control devices.

Response: The EPA reviewed the commenter's request to include the design analysis requirements in §63.120(d)(1) for storage vessel closed-vent systems in the Notification of Compliance Status, instead of with the Implementation Plan as was proposed. However, the EPA decided to keep the information in the Implementation Plan. Because there is no performance test required, and monitoring requirements are

site-specific, the implementing agency will need to review the design analysis and suggested monitoring parameters ahead of time. This will allow the source and implementing agency to establish and agree on the site-specific monitoring requirements prior to the compliance date. The requested information can be developed from a design analysis prior to equipment installation and a test would not be required. For these reasons, the EPA will continue to require this design analysis with the Implementation Plan. In addition, the wording in §63.120(d) was clarified to make it clear that the analysis is not a test demonstration, but will show that the control is designed to achieve 95-percent emissions reductions.

Comment: One commenter (A-90-19: IV-D-33) argued that it would be redundant to require a source to provide detailed information about unique monitoring parameters in the Implementation Plan when this information is already required in the Notification of Compliance Status. The commenter (A-90-19: IV-D-33) suggested the Implementation Plan identify the parameters to be monitored, but not include the detailed information in proposed §63.151(f)(1) through (3). The commenter (A-90-19: IV-D-33) also suggested the same change be made to proposed §63.152(e) so that the detailed information would be required in the Notification of Compliance Status rather than the operating permit application or the Implementation Plan.

Response: The information in §63.151(f)(1) through (3) of subpart G is necessary for the regulatory authority to make an informed decision when reviewing a request for a unique site-specific monitoring parameter. Because the use of unique parameters must be approved prior to the use of the unique parameters, the information must be submitted before the compliance date with the Implementation Plan rather than with the Notification of Compliance Status, which is not due until 150 days after the compliance date. By submitting the information with the Implementation Plan, which is due 12 months before compliance for emission points not included

in emissions averages and 18 months before compliance for points in emissions averages, the source and the implementing agency can agree on the monitoring parameters and associated recordkeeping and reporting system before the compliance date.

The submittal of the information in §63.151(f) is required only if a source wishes to monitor a unique operating parameter, that is, a parameter not listed in the process vents, transfer, storage or wastewater provisions. In order to make a decision regarding approval, the implementing agency must be given the information in §63.151(f)(1), including the description of the parameters to be monitored and an explanation of the criteria used to select the parameter. Also, the information in §63.151(f)(2), a description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device and the schedule for this demonstration must be provided, and the owner or operator must certify they will establish a range for the monitored parameters as part of the Notification of Compliance Status. In order to determine if the proposed monitoring recordkeeping and reporting system is sufficient to determine compliance, the implementing agency also needs the information in §63.151(f)(3), which includes the frequency and content of monitoring, recordkeeping, and reporting if it will differ from the requirements in §63.152.

It should be noted that the actual numerical range of the parameters is submitted later in the Notification of Compliance Status. This is because testing may be needed to establish the exact range, and it would be impractical to require testing before the compliance date because control devices may not be installed and operational until the compliance date.

Comment: One commenter (A-90-19: IV-D-87) requested that the calibration and maintenance procedures and records of the recording devices be included in the Implementation Plan.

Response: The Implementation Plan must include a statement that the owner or operator will follow the compliance demonstration, monitoring, recordkeeping, and

reporting provisions in §§63.113 through 63.148 that are applicable to each emission point. These sections (e.g., §63.114 for process vents) state that monitoring equipment must be installed, calibrated, maintained, and operated according to the manufacturer's specifications. The Notification of Compliance Status required in §63.152(b) of subpart G includes the results of any continuous monitoring system performance evaluations that have been performed.

The EPA believes the provisions provide assurance that monitors will be properly calibrated and maintained without causing the reporting burden of submitting detailed information on calibration plans and procedures for the numerous emission points and control devices that will be subject to the HON at each facility. The specific monitor calibration and maintenance descriptions suggested by the commenter need not be submitted prior to the compliance date to allow implementing agencies to plan their programs. Such information would significantly increase the recordkeeping and reporting burden for both the industry and the implementing agency. Therefore, the rule has not been changed.

2.1.3 Notification of Compliance Status

Comment: One commenter (A-90-19: IV-D-32) supported the deadline of 150 days after the compliance date for submitting the Notification of Compliance Status, stating that it should provide sufficient time for a source to complete the performance tests, set parameter ranges, and complete status determination.

One commenter (A-90-19: IV-D-32) supported the EPA's effort to avoid duplicative reporting in the Notification of Compliance Status by requiring only one complete test report for each test method used for a particular kind of emission point.

Three commenters (A-90-19: IV-D-32; IV-D-69; IV-D-81) supported the provisions in §63.152(b)(2)(iii) requiring a source to define an operating day for purposes of determining daily average values for monitored parameters as part of the Notification of Compliance Status. Two of the commenters

(A-90-19: IV-D-32; IV-D-81) stated that source's operating periods vary greatly and that allowing each source to define its own operating day enables it to fashion an operating period that most closely corresponds with the sources' actual operating procedures. One commenter (A-90-19: IV-D-79) stated that the 24-hour operating day appropriately measures compliance.

Response: The provisions supported by these commenters have been retained in the final rule.

Comment: One commenter (A-90-19: IV-D-36) requested that §63.152(b) be clarified to specify that the Notification of Compliance Status be submitted "within 150 days after" the compliance date, instead of "within 150 days of" which does not specify whether the report is due after or before the compliance date.

Response: The word "after" was added in §63.152(b) for clarification.

Comment: One commenter (A-90-19: IV-K-66) questioned whether proposed 63.152(b), which requires the submittal of a Notification of Compliance Status with 150 days after the compliance date, overrides 63.9(h)(2)(ii) of the proposed General Provisions which requires the same notification be submitted with 45 days after the compliance date.

Response: The commenter (A-90-19: IV-K-66) is correct. The Notification of Compliance Status requirements in section 63.152(b) override of the HON override the Notification of Compliance status requirements contained in the General Provisions. A table (table 3) has been added to the final rule in subpart F. This table lists the General Provisions sections and whether they do or do not apply to the HON.

2.1.4 Periodic Reports

Comment: Several commenters (A-90-19: IV-D-32; IV-D-48; IV-D-69; IV-D-75; IV-D-77; IV-D-79; IV-D-89; IV-D-112) favored eliminating the requirements for submitting negative reports (i.e., periodic reports covering periods where no excursions have occurred) in order to reduce the burden to the regulated

community and to the regulatory agencies. Instead, one commenter (A-90-19: IV-D-69) suggested that the facility submit a statement that there were no excursions during the reporting period.

Response: The rule requires periodic reports on a semiannual or quarterly schedule. The reports must include the required information on all the emission points that have excursions or other reportable information (such as results of any TRE determinations and performance tests, results of seal gap measurements for storage vessels, descriptions of routine maintenance for storage vessels, credits and debits for points in emissions averages, and other items). However, if no excursions or other reportable events occurred, then a statement that there were no reportable events will be adequate. The statement could simply state that there were no reportable events at any emission points or no reportable events at any emission points other than those for which data are reported. The report would not need to include a point-by-point list of all the emission points that had no reportable events.

Comment: Two commenters (A-90-19: IV-D-32; IV-D-33) recommended that the rule be revised to allow the first periodic report to cover the six months after the Notification of Compliance Status is filed. The commenters (A-90-19: IV-D-32; IV-D-33) stated that timing the first periodic report from the Notification of Compliance Status and not the compliance date, as the proposed rule reads, would be more beneficial to sources who will be completing their performance tests and performing equipment adjustments during the 150-day period between the compliance date and the Notification of Compliance Status report.

Response: The EPA has revised the final rule in agreement with the commenter's suggestion. Under the final rule, the first Periodic Report covers the six-month period after the Notification of Compliance Status is due, and must be submitted eight months after the Notification of Compliance Status is due. The control devices must be installed and the

monitoring equipment operating by the compliance date. Site-specific operating parameter ranges must be established and included in the Notification of Compliance Status. The reason parameter ranges are established after the compliance date is that, in most cases, they will be based on performance test data which will not be available until after the compliance date. Excursion recordkeeping and reporting begins on the date the Notification of Compliance Status is due. Prior to this time, the range would not have been established, so there would be no indication that an excursion had occurred.

Comment: One commenter (A-90-19: IV-D-32) supported the 1 and 5 percent threshold for triggering quarterly reporting and the option of reverting back to semiannual reporting after 1 year of not exceeding the set limits.

Another commenter (A-90-19: IV-D-77) maintained that based on their experience with CEM's, the 95 percent monitoring system time provision is feasible but would be very expensive and could require redundant monitoring systems. The commenter (A-90-19: IV-D-77) suggested that 80 to 90 percent would be a more realistic period when using CEM's. The commenter (A-90-19: IV-D-77) also contended that the selection of a 1-percent deviation as a trigger for possible quarterly monitoring is too restrictive and does not reflect the industry practices of process control. The commenter (A-90-19: IV-D-77) stated that a process parameter is generally considered in control if the measured value is within 2 standard deviations (5 percent) of the target or expected values and therefore 5 percent should be used as the trigger for more frequent reporting instead of 1 percent.

Another commenter (A-90-19: IV-D-73) suggested expressing the 1 percent and 5 percent requirements as hours instead of a percentage to prevent triggering quarterly reports for sources with short operating hours. The commenter (A-90-19: IV-D-73) requested a 1 percent outage of 44 hours and 5 percent of 219 hours for semiannual periods.

Response: The EPA has revised the final rule. Under the final rule, quarterly reports are required if: (1) the

emission point has more than the allowed number of excused excursions for a semiannual reporting period; and (2) the implementing agency requests the owner or operator to submit reports on a quarterly basis. The provisions requiring quarterly reporting if the monitored parameter values for the emission point are outside the permitted range for more than 1 percent of the point's operating time, or the continuous monitoring system is inoperable for more than 5 percent of the operating time during a semiannual reporting period were not included in the final rule. The excused excursion system is discussed in section 3.2.5 of this BID volume.

In response to commenter IV-D-77, the HON does not require CEM's. Instead, continuous parameter monitoring can be used. Further discussion of parameter monitoring and CEM's can be found in sections 3.2.2 and 3.2.4 of this BID volume.

2.1.5 Other Reports

Comment: Two commenters (A-90-19: IV-D-32; IV-D-64) suggested allowing the information required under proposed §§63.118(g), (h), (i), and (j) when a process change affects the TRE or flow rate or HAP concentration of a Group 2 process vent to be submitted in the source's semiannual report instead of a special report as proposed.

One commenter (A-90-19: IV-D-73) suggested clarifying in §63.118(g) that the reports of changes are required regardless of whether or not such changes constitute a modification under section 112(g) of the Act.

Response: The final rule has been revised to allow a Group 2 emission point, such as a process vent, that becomes a Group 1 emission point to report the Group status change in the next periodic report. Section 63.118 of the HON clearly states that all process changes meeting the criteria in §63.115(e) of subpart G need to be reported. After the HON has been promulgated, the modification rules developed under section 112(g) do not apply to sources subject to the HON. Instead, the HON specifies the compliance provisions notifications and reports that apply to modified sources.

Section 63.100(K)(4) of subpart F was revised to state that a Group 2 emission point that becomes a Group 1 emission point must come into compliance as expeditiously as practical, but not later than three years. The source must work out the compliance details with their implementing agency, and obtain approval of their compliance schedule.

Comment: One commenter (A-90-19: IV-D-73) recommended that all "one-time" reports, notifications, and requests for approval of alternate methods either be incorporated into the periodic report or eliminated.

Response: The commenter's suggestion is not feasible when the report is a request for approval for a nominal control efficiency for use in calculating credits for an emissions average or some other item that must be acted on immediately. (Other reports are described in §63.152(d) of the final rule.)

Also, some information, such as requests for alternative monitoring parameters, must be approved before the periodic reporting system begins.

Comment: One commenter (A-90-19: IV-D-33) indicated that the list of other reports included in proposed §63.152(d)(3) should be simplified to cross-reference reports required by §§63.122(h) and (i); the commenter included suggested wording.

Response: The list of other reports for storage vessels contained in proposed §63.152(d)(3) was revised for the final rule. In the final rule, storage vessel other reports are discussed in §63.152(d)(2) and only notifications of inspections required by §63.122(h)(1) must be submitted. Reports previously included under proposed §63.122(i) pertaining to requests for extensions of repair were removed from the final rule. The rationale for these changes is contained in section 3.5 of BID volume 2A.

## 2.2 FREQUENCY OF REPORTING

Comment: Three commenters (A-90-19: IV-D-32; IV-D-64; IV-D-112) supported the two-tiered reporting frequency, semiannually for most periodic reports, and quarterly for

emission points using emissions averaging or when monitoring results show parameter values are outside the established ranges. Two commenters (A-90-19: IV-D-32; IV-D-112) stated that the two-tiered reporting frequency provides incentive for good monitoring performance.

One commenter (A-90-19: IV-D-77) suggested that information about Group 2 emission points be submitted annually.

Another commenter (A-90-19: IV-D-63) maintained that annual reporting would be adequate to monitor compliance and that most implementing agencies are not adequately staffed to review quarterly or semiannual reports.

Response: As suggested by the commenters, the periodic reporting system of semiannual or quarterly reporting for Group 1 emission points provides an incentive for sources with good performance to continue operating in that manner. These requirements are in conformance with section 70.5(c) of the operating permits program, which states that sources are required to submit reports no less frequently than once every six months.

Annual reporting was not selected as requested by the commenters, because it would significantly reduce the EPA's ability to take administrative enforcement actions. Section 113(d) of the Act limits assessment of administrative penalties to violations that occur no more than 12 months prior to the initiation of the administrative proceeding. Periodic reports are a primary means of identifying possible violations, and annual submittal would not give the enforcement agency time to review the report and take action on a violation that occurred early in the reporting period within one year after the event. Administrative proceedings are far less costly than judicial proceedings for both the EPA and the regulated community.

In general, information on Group 2 emission points is not required in the periodic reports unless they become Group 1. Group 2 process vents with TRE index values between 1 and 4 are required to monitor parameter values and report any daily

average values that are outside the established ranges in the periodic reports. This assures that they are operating in such a way that they will not become a Group 1 emission point.

When operating permit program fees become available, the permitting authority is expected to increase their staff as necessary to keep up with the large number of operating permit applications and subsequent reports. This will allow the permitting authority to review the periodic reports on a semiannual basis.

Comment: One commenter (A-90-19: IV-K-1) believed the HON reporting requirements were less stringent than the General Provisions' requirements and requested that the HON rule require at least quarterly reports.

Response: Section 63.10(d)(1) of the General Provisions states that sources should submit reports in accordance with the reporting requirements in the relevant standard. As discussed in a previous comment, the HON requires semiannual or quarterly reporting and these requirements are consistent with the operating permits program. These reporting frequencies are adequate to ensure continuous compliance.

Comment: One commenter (A-90-19: IV-D-85 and IV-K-1) stated that plant operators should be required to promptly report all deviations from permit requirements including any excursion beyond a permitted parameter range or malfunction of a monitor, as required by sections 503(b)(2) and 504(a) of the Act. Another commenter (A-90-19: IV-D-87) suggested that if a parameter value is outside of the operating range or a monitoring system is out of service it should be reported immediately and the report should contain the reasons why the emission point is outside the operating range, and the potential adverse effects to human health and the environment. The commenter (A-90-19: IV-D-87) requested that the State or local districts have final approval in determining whether the process should be allowed to operate under out-of-specification conditions at any time.

One commenter (A-90-19: IV-D-115) stated that the proposed rule allows an emission point to be outside an

approved operating range without requiring the source to submit an immediate report. The commenter (A-90-19: IV-D-115) recommended including in the rule those circumstances that require immediate notification of the implementing agency and requested that these reports include sufficient information to determine whether a malfunction poses a serious threat to the public. Another commenter (A-90-19: IV-D-77) maintained that requiring immediate reports of exceedances would be burdensome, does not improve control effectiveness, and should not be required.

Response: Based on information available about emissions from SOCMI facilities, operation of a control in an excursion state is expected to result in some increased emissions, but not an increase that is likely to have a direct and immediate impact on public health. Therefore, immediate reporting of every instance when a monitoring device is not functioning or an operating parameter is outside of the permitted range would be burdensome and is not necessary to determine compliance. Monitors may be temporarily out of service for a variety of reasons, but the process and control equipment may still be functioning normally.

For the HON, the EPA considers periodic reporting of parameter excursions and days when sufficient monitoring data were not collected to be consistent with sections 503(b)(2) and 504(a) of the Act. In this case, compliance with permit conditions means operating with the excused number of parameter excursions or fewer. Section 504(a) requires submission of results of required parameter monitoring no less often than every six months.

If a parameter excursion or monitoring system downtime is caused by a "malfunction," the reporting requirements contained in the General Provisions apply. As described in the General Provisions, a malfunction is defined as "any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation

are not malfunctions." The General Provisions require that actions taken during the malfunction be consistent with procedures specified in the source's start-up, shutdown, and malfunction plan, and that the malfunction be reported in the next periodic report. However, if an action taken is not completely consistent with the plan, §63.6(e)(3)(iv) and §63.10(d)(5)(ii) of the General Provisions require the source to report (by telephone or facsimile) within 2 working days after the event commences, followed by a letter within 10 working days. This report would explain the circumstances of the event, the reasons for not following the start-up, shutdown, and malfunction plan, and whether any excess emissions and/or parameter monitoring excursions are believed to have occurred.

A few commenters expressed concern about possible adverse effects to human health and the environment from exceedances and malfunctions. In the event that an operating parameter is outside the permitted range, and an accidental release occurs, the source will be subject to the proposed accidental release prevention rule. This rule identifies those substances that are most likely to cause serious adverse effects that could harm the public and the environment. The proposed accidental release prevention rule, along with subsequent accident prevention regulations that will be proposed later, include the requirement that facilities develop and implement a risk management plan covering off-site consequence analysis, including worst-case scenarios, a five-year accident history, a prevention program, and an emergency response program.

## 2.3 RECORDKEEPING FOR CONTINUOUS MONITORING SYSTEMS AND RECORD RETENTION

### 2.3.1 Data Collection and Recording Frequency

Comment: Several commenters offered examples and specific details of their experience with computer data retention systems and questioned whether some of these systems would be considered acceptable for compliance with the HON. The systems that one commenter (A-90-19: IV-D-33) described could be varied by data acquisition rate (10 seconds,

30 seconds, or 6 minutes) and by data retention times (between 1 day and 90 days; data can be kept for longer periods of time by using backups or averaging; however, these retention times are the most often used). The more frequently acquired data are kept for a shorter period of time, while less frequently acquired data are kept for a longer period of time. Another commenter (A-90-19: IV-D-57) stated that many processes monitor data many times per minute, average data for a period of time such as 15 minutes, and retain the data for a period of time such as 2 hours, after which the data is overwritten. The commenter (A-90-19: IV-D-57) noted that daily averages are usually maintained. Another commenter (A-90-19: IV-D-79) stated that, for compliance with the Burning of Hazardous Waste in Industrial Furnaces and Boilers (BIF) regulations (40 CFR 266), they have the option to use hourly rolling average control for process data acquisition. The commenter (A-90-19: IV-D-79) stated that a reading is taken every 6 seconds, and 10 of the readings are averaged to determine a 1-minute average, which is printed. The commenter (A-90-19: IV-D-79) went on to say that the most recent 60 1-minute readings are averaged to make up the hourly rolling average, which is printed. Commenters stated that many of their systems calculate and retain hourly averages (A-90-19: IV-D-32; IV-D-33; IV-D-69); 3-hour averages (A-90-19: IV-D-32; IV-D-69); and/or 24-hour averages (A-90-19: IV-D-32; IV-D-69).

Response: The EPA appreciated the specific information provided by the commenters on the capabilities of their computer data retention systems.

As described in a later response, the final HON allows owners or operators to discard the 15-minute values and instead retain hourly average values for operating days when the daily average value is not an excursion. For days when the daily average is an excursion, the 15-minute records must be retained. These provisions should allow some of the commenters to continue to use their current computer systems

that retain hourly averages, as long as the systems are capable of retaining 15-minute averages for excursion periods.

Comment: Two commenters (A-90-19: IV-D-32; IV-D-64) asked whether retention of 6-minute averages would comply with the HON. One commenter (A-90-19: IV-D-64) explained that most of their process control instruments measure data values two or three times per second. The commenter (A-90-19: IV-D-64) continued that one-minute averages are averaged to obtain a six-minute average, which is retained. The commenter (A-90-19: IV-D-64) requested that they be allowed to retain the six-minute average, and not retain the twice-per-second measurements. For this reason, the commenter (A-90-19: IV-D-64) requested that the phrase "all measured values" be deleted from the definition of continuous record and continuous recorder. Another commenter (A-90-19: IV-D-32) noted that the required 15-minute averages will be very difficult for systems that work on 6-minute multiples to accommodate.

Response: The definition of "continuous record" in §63.111 was revised for the final rule and now requires that data values be measured at least once every 15 minutes and recorded at the frequency specified in §63.152(f) of the HON. Under §63.152(f), sources required to keep continuous records must record either each measured data value or block average values for 15-minute (or shorter) periods calculated from all measured data values during each period. This does not prohibit a source from measuring and recording values more often than once every 15 minutes or from keeping 6- or 12-minute averages instead of 15-minute averages. For days when an excursion does not occur, the 15-minute (or more frequent) records may be discarded and hourly average records retained instead.

Comment: Some commenters requested retention of hourly or daily averages instead of 15-minute averages.

One of the commenters (A-90-19: IV-D-33) stated that the current HON recordkeeping requirements would require more effort and substantially more disk storage than hourly

averages. Two commenters (A-90-19: IV-D-33; IV-D-70) suggested that the operating parameters be measured at least once every 15 minutes, but that records be maintained only for hourly averages or less frequent time periods. Two commenters (A-90-19: IV-D-32; IV-D-69) recommended the use of systems that take continuous measurements and calculate average parameter values for time periods longer than 15 minutes. The commenters (A-90-19: IV-D-32; IV-D-69) maintained that this change would allow companies to continue using their current systems and would be adequate to verify compliance.

One commenter (A-90-19: IV-D-33) recommended that only daily averages be required for days during which no excursions from the range occur. One commenter (A-90-19: IV-D-74) recommended maintaining only the records of daily averages, and another (A-90-19: IV-D-73) suggested sources be given the choice of retaining daily averages instead of detailed monitoring records. One of the commenters (A-90-19: IV-D-74) also suggested that the EPA reduce the recordkeeping for sources that consistently demonstrate good compliance, similar to the concept in subpart H of less frequent monitoring as leak frequencies are decreased.

Response: The EPA agrees that hourly average values are generally sufficient to determine compliance and has determined that 15-minute records should be kept only if there is an excursion. As at proposal, compliance with the operating conditions is based on the daily average value of continuously monitored parameters. If the daily average value is outside the established range, this is an "excursion." The proposed HON required retention of 15-minute average data values to substantiate the daily average calculations and provide a record of trends in control device operation over a shorter time period. Records of hourly average values are sufficient to accomplish these purposes, and will greatly reduce the recordkeeping burden of the HON. This change will reduce by a factor of four the number of records that must be digitally converted by computer systems, copied onto tapes and/or printed as hard copy, duplicated, and stored. It will

avoid the cost of reprogramming existing computerized recordkeeping systems that commenters said are currently programmed to retain hourly averages. The reduction in the number of records will also simplify review of these records by enforcement agencies.

The reduction in the number of records will not impair the ability to detect parameter excursions. The final rule requires continuous monitors to measure parameter values at least once every 15 minutes. Many monitors are designed to measure more frequently. The final rule differs from the proposal only in that hourly rather than 15-minute average values may be retained on record for operating days when there is not an excursion. Furthermore, the final rule requires retention of the 15-minute values of parameters for operating days when there is an excursion. This will provide a more detailed record of those periods when there are problems. It will not significantly increase the recordkeeping burden because there should only be a few days per year when there are parameter excursions for any given emission point.

The equipment leak provisions referred to by one commenter (A-90-19: IV-D-74) are based on periodic monitoring (leak detection) rather than continuous monitoring. Thus, the equipment leak provisions are not relevant to emission points required to be continuously monitored under subpart G.

Comment: One commenter (A-90-19: IV-D-73) requested that §63.103(b)(4) allow reduction of data by methods specified in the HON or approved in the Implementation Plan or operating permit application. The commenter (A-90-19: IV-D-73) supported data reduction, but maintained that the proposed methods are too restrictive. The commenter (A-90-19: IV-D-73) contended that the 5-minute and 15-minute average for data retention [i.e., the transfer operation provisions in proposed §61.130(a)(i) and (ii)] would be an "unnatural" time span for many process control computers. The commenter (A-90-19: IV-D-73) stated that they have analyzed the effort that would be required for one plant to change from 6-minute averages or spot readings. Such an effort would require

21 person-weeks of work if only 500 data tags are involved and could impact basic computer capacity and operational control if additional tags are involved. The commenter (A-90-19: IV-D-73) stated that no estimation to convert to 15-minute averages was made because this time span would be incompatible with the current data collection or computation programs and conversion would be so costly and disruptive that it would not be a realistic option. The commenter (A-90-19: IV-D-73) contended that long-term retention of hourly average data should be adequate to demonstrate compliance and that shorter averages would be arbitrary, burdensome, and of no environmental benefit.

Response: The transfer operation provisions have been revised for the final rule and no longer require retention of 5-minute records. Hourly records (and 15-minute records for excursions) are required for transfer operations as well as the other kinds of emission points. See section 4.2.2 of BID volume 2A for more information on monitoring and recording frequencies for transfer operations. Furthermore, the rule provides flexibility to keep averages for periods shorter than 15 minutes (e.g., 6-minute averages) for days when there are excursions.

Comment: One commenter (A-90-19: IV-D-57) recommended that records for each 15-minute average be maintained for each day of operation until the end of the operating day, at which time the 15-minute average readings for the full period of any excursions will be maintained and all other data discarded. The commenter (A-90-19: IV-D-57) maintained that such a system would ensure compliance and proper operation and maintenance of control devices, while making data retention more manageable.

Response: The EPA agrees with the commenter that 15-minute average readings need to be maintained only for those days when an excursion occurs. However, the final rule requires that hourly average values be retained for days when there are no excursions, if the 15-minute values are discarded. The EPA determined that the commenters suggestions

to maintain no records other than excursion records would not be adequate for enforcement purposes. The hourly records are needed to document that the required monitoring was conducted and to allow verification of the daily average values for days when the source has not reported an excursion.

Comment: One commenter (A-90-19: IV-D-57) requested that preamble language, which seeks at least one monitored value for every 15 minutes, be clarified because §63.111 of the proposed rule allows retention of 15-minute averages which may not ever be one of the monitored values. Another commenter (A-90-19: IV-D-79) requested that records of 15-minute averages be allowed instead of recording every 1-minute measurement. Another commenter (A-90-19: IV-D-73) requested that the HON rule be clarified to state whether for a parameter that is monitored very frequently (say once per second), all data, 15-minute averages, hourly averages, or daily averages should be retained.

Response: The definition of "continuous record" in §63.111 was revised for the final rule to mean documentation, either in hard copy or computer-readable form, of data values measured at least once every 15 minutes and recorded at the frequency specified in §63.152(f) of subpart G. The source required to keep continuous records under §63.152(f) must record either each measured data value or block average values for 15-minute or shorter periods calculated from all measured data values during each period. This definition allows sources some flexibility to select the option that is easiest for them. Furthermore, for days when there are no excursions, the source is given the flexibility to discard the 15-minute (or more frequent) records and retain only the hourly average values.

Comment: One commenter (A-90-19: IV-D-74) supported the proposed definitions of "continuous record" and "continuous recorder" in those circumstances where continuous recording is appropriate, such as when a device exists that can automatically record the data (i.e., temperature monitor). The commenter (A-90-19: IV-D-74) also supported the

definition of continuous meaning every 15 minutes (as opposed to more frequent recording) and stated that this appears consistent with the draft enhanced monitoring provisions and the existing NSPS program. The commenter (A-90-19: IV-D-74) suggested that a source also be allowed to monitor less frequently than every 15 minutes, since operational problems occur over a period of several hours. The commenter (A-90-19: IV-D-74) suggested that the EPA consider in future MACT standards whether continuous records are appropriate and stated that they are generally not appropriate for batch processes.

Three commenters (A-90-19: IV-D-64; IV-D-68; IV-D-73) suggested changing the definition of "continuous record" to require a record of data values recorded at least once each hour, instead of every 15 minutes. The commenter (A-90-19: IV-D-68) said that recording values every 15 minutes would require installation of computer systems at plants that do not currently have computers and would be very costly. The commenter (A-90-19: IV-D-68) stated that monitoring every 15 minutes would result in 96 values per day, whereas statistical methods for calculating an average require no more than 20 to 30 readings for a representative grouping.

Response: Continuous parameter monitoring is feasible for the HON and is consistent with enhanced monitoring. "Continuous" is defined in previous NSPS and NESHAP and the General Provisions as at least one monitored value every 15 minutes. This frequency is appropriate for accurate portrayal of control device operation.

The final rule is the same as the proposal in that a record of a monitored value must be made at least every 15 minutes. However, for reasons explained in previous responses in this section, if there are no excursions during an operating day, the owner or operator may discard the 15-minute records and retain hourly average values instead.

Most SOCMI plant sites use computer monitoring systems. However, provisions were added in the final rule for non-automated sources to request approval on a case-by-case basis

to monitor at least once an hour instead of once every 15 minutes. The monitoring provisions for non-automated systems are discussed in more detail in section 2.3.3.

2.3.2 Data Compression Systems

Comment: Many commenters (A-90-19: IV-D-32; IV-D-33; IV-D-36; IV-D-48; IV-D-67; IV-D-69; IV-D-73; IV-D-74; IV-D-75; IV-D-77; IV-D-79; IV-D-97; IV-D-110; IV-D-112) suggested allowing the use of data compression technologies to reduce the volume of data that must be retained while still allowing determination of when exceedances have occurred. Data compression technologies are computerized data acquisition systems that do not record data at a given frequency, but record all data points that vary significantly from the previously recorded data points or go outside a pre-set range.

One commenter (A-90-19: IV-F-3) mentioned that computer systems can be designed to identify and record data that are out of range. Two commenters (A-90-19: IV-D-32, IV-D-97) stated that data compression systems have been successfully used in the chemical industry for over 10 years and are reliable for compliance verification; adding that one company uses computerized process control and data compression for monitoring at 50 facilities and hundreds of process units. The commenters (A-90-19: IV-D-32, IV-D-97) stated that calibration is conducted at the same frequency as with other monitoring systems and that data are displayed in the control room and periodically verified by checks between the field and control room. The commenters (A-90-19: IV-D-32, IV-D-97) said data listings and displays can be readily generated for compliance inspectors and software programs can be written to audit data storage.

Three commenters (A-90-19: IV-D-32; IV-D-33; IV-D-97) listed the advantages of compression data acquisition systems to be: the ease of data retrieval from archived data; a reduced amount of information retained on-site resulting in reduced costs for data handling and storage, and reduced burden for inspectors who review the information; reduced data storage requirements for the computer system resulting in

reduced computer costs; computer systems designed to generate records automatically, reducing the likelihood of recordkeeping and reporting errors; and the ability to detect operating problems quickly, access past data, and predict future problems.

Two commenters (A-90-19: IV-D-32; IV-D-97) attached published articles on computer data compression techniques. The articles described various algorithms that can be used to determine which data values are recorded and other features of the systems including graphical display of information and data storage capabilities.

One commenter (A-90-19: IV-D-33) attached copies of published manuals describing computer systems that can store, summarize, and report historical process information such as monitoring data. The manuals describe data compression techniques used by these systems as well as statistical and graphical capabilities and file size and file management considerations.

One commenter (A-90-19: IV-D-67) stated that through the use of data compression, two years of data can be maintained before being archived. The commenter (A-90-19: IV-D-67) typically backs up the computer hard-drives to disk or tape every week or two. The disks or tapes have a shelf life of over 10 years. Every year or two, the data is archived to tapes, which also have shelf lives of 10 years and can be up-loaded if needed. The commenter (A-90-19: IV-D-67) stated that paper copies, strip charts, and operator logsheets are subject to degradation, fading, and smearing.

Some of the commenters (A-90-19: IV-D-32; IV-D-67; IV-D-97) referred to data compression as a valuable tool and stated that their plant site typically uses a 1-percent variance to determine which data points are recorded, although any value can be selected. The commenter (A-90-19: IV-D-67) stated that, if the variance is set appropriately, data is typically stored more often than every 15 minutes, even when using data compression. The commenter (A-90-19: IV-D-67) acknowledged that the computer system could be programmed to

just record data once every 15 minutes; however, the commenter contended that valuable data trends would be lost.

The commenter (A-90-19: IV-D-67) stated that their data compression system looks for unchanging data (no variability) and uses internal alarms to bring this to the attention of control room operators, since unchanging data can mean something is wrong with the monitoring system.

The commenter (A-90-19: IV-D-67) contended that the validity and accuracy of the data are a function of the instrument measuring the value for the data point and not the computer system. Another commenter (A-90-19: IV-D-97) contended that no data are "lost" with data compression systems because the absence of a value simply means that the data does not vary outside the permitted parameters or significantly from the last recorded value.

Response: In response to the many commenters requesting that the HON accommodate data compression as an alternative monitoring method, the EPA reviewed published articles, manuals, and other information submitted by the commenters describing how these data compression systems operate. With data compression systems, the monitor usually measures the parameter much more frequently than once every 15 minutes; however, the computer records a value only when a data value varies from previously recorded values by more than a set variance. The final rule has been revised to allow a source to request approval to monitor using data compression as an alternative monitoring, recordkeeping, and reporting system. The source must apply to the permitting authority for the approval of this alternative.

The EPA has established minimum criteria that data compression systems must satisfy in order to ensure recorded data are sufficient to represent the process and determine whether an excursion has occurred.

In order to be approved under §63.151(g)(4) of the rule, an acceptable data compression system must be capable of: (1) measuring the operating parameter value more frequently than at least once every 15 minutes; (2) recording at least

four values each hour during periods of operation; (3) recording the date and time when monitors are turned off or on; (4) recognizing unchanging data that may indicate the monitor is not functioning properly, alerting the operator, and recording the incident; and (5) computing daily average values of the monitored operating parameter based on recorded data. At the end of the day, if the daily average value is not an excursion, the data may be converted to hourly averages and the four individual records per hour may be discarded. The request for approval must contain a description of the monitoring system and data compression recording system, including the criteria used to determine which monitored values are recorded and retained, the method for calculating daily averages, and a demonstration that the system meets the five criteria previously discussed.

The EPA expects that by allowing sources to request to use data compression systems as an alternative monitoring and recording system, the burden of the HON will be reduced. If sources' data compression requests are approved, then sources that have already installed data compression systems or plan to install such systems can utilize the data compression systems instead of incurring the burden of purchasing an additional system or redesigning their current system.

Comment: One commenter (A-90-19: IV-D-97) suggested the language of §63.103(a)(5) of the proposed rule be rewritten to specifically allow data compression techniques. One commenter (A-90-19: IV-D-67) recommended changing the definition of "continuous record" to allow data compression techniques with a 1 percent or less variance range.

One commenter (A-90-19: IV-D-33) suggested that the EPA allow facilities to choose from a variety of monitoring options by eliminating the "continuous record" definition and creating new definitions for "complete records" and "complete hourly records" that allow data compression system records.

Response: Data compression will be allowed in the final rule as an alternative monitoring, recordkeeping, and reporting system that must be approved on a case-by-case

basis. Specific provisions have been added in §63.151(g)(4) of subpart G. See the response to the previous comment for details.

Comment: One commenter (A-90-19: IV-D-36) noted that the proposal preamble discusses allowing the use of monitoring systems that only store data outside of a predetermined range of values. The commenter contended that preamble language in proposed section VII.G.6 contradicts this concept by stating that all data in between the stored values is the same as the last recorded value. The commenter (A-90-19: IV-D-36) stated that the opposite was true and the language should be corrected to read "It is then deemed that all data in between the stored values does not exceed the specified range."

Response: There are various types of data compression systems. The commenter is correct that some data compression systems record only data that is outside a predetermined range of values. The commenter is also correct that for properly calibrated systems that record only data that is outside a predetermined range of values, all data in between the stored values does not exceed the specified range. Other data compression systems record data that varies from the previously recorded data points by more than a set variance. The proposed preamble language, which states that all data in between the stored values is the same as the last recorded value, is accurate for the system that records data that varies from the previously recorded data points.

Data compression systems that record only data that is outside a predetermined range of values would not provide a true record of the process variations, but would only record the extreme values that might be likely to result in an excursion. Also, it is likely that too few data points would be recorded, so that daily averages may not be representative. Therefore, these types of data compression systems are not allowed by the HON.

However, after review of data compression systems that record based on variability, the EPA determined that these data compression systems could meet the purposes of the HON.

As described in a previous response in this section, owners or operators can request approval to use such systems if they meet specified minimum criteria.

Comment: Three commenters (A-90-19: IV-D-35 and IV-D-36 and IV-D-121; IV-D-77; IV-K-24), (A-90-20: IV-D-19), (A-90-21: IV-D-17), (A-90-22: IV-D-13), (A-90-23: IV-D-20) recommended that only excursions be recorded since there is no benefit to keeping records that show normal operating conditions, unless the EPA considers the sources "guilty until proven innocent" (A-90-19: IV-D-35 and IV-D-36 and IV-D-121), (A-90-20: IV-D-19), (A-90-21: IV-D-17), (A-90-22: IV-D-13), (A-90-23: IV-D-20). One commenter (A-90-19: IV-D-77) stated that by only recording excursions, attention is focused on problems, resulting in the use of fewer implementing agency and facility resources.

Four commenters (A-90-19: IV-F-1.1 and IV-F-3; IV-D-36; IV-D-77; IV-K-24) stated that data should be retained only when parameters or emission limits have been exceeded (deviation-only recordkeeping/reporting). One of the commenters (A-90-19: IV-D-77) recommended that the focus be on recording deviations and corrective actions, rather than keeping vast amounts of data reflective of normal operating conditions. The commenter (A-90-19: IV-D-77) said that process control computer systems utilize principles of statistical process control in which only the true deviations from expected operational variability require action. The commenter (A-90-19: IV-D-77) added that actions based on deviations which are not statistically significant can actually create loss of process control, and that such statistically insignificant deviations which represent normal operation should not be recorded. The commenter included references for additional information on statistical process control.

One of the commenters (A-90-19: IV-D-77) stated that a source which establishes the representativeness, precision, and accuracy of a CEM or parameter monitor for an emission point should be allowed the option to discard data acquired

during monitoring periods during which no values outside of acceptable operating limits are recorded. The commenter explained that the accuracy of the CEM or parameter monitor could be demonstrated through a quality assurance program of periodic system response, precision checks and data capture greater than 90 percent. The commenter (A-90-19: IV-D-77) recommended averaging the continuously recorded data, for example, over a three-hour average, and if the average is found to be within acceptable operating limits, discarding the data after a limited retention time. The commenter (A-90-19: IV-D-77) suggested retaining accessible records of excursions for five years.

Response: Although these commenters did not specifically mention the term "data compression," some of them have described systems characteristic of data compression systems. As stated earlier in this section, the final rule has been revised to allow sources to request on a case-by-case basis to use data compression systems in place of the 15-minute continuous record monitoring system. The EPA hopes this will allow sources with data compression systems already in place or planned for the future to utilize these systems in complying with the HON. Excursion-only recording will not be allowed in the HON because it would be impossible to verify how the process and controls were operating during long periods when there were no records.

2.3.3 Current Use of Automated and Non-Automated Monitoring Systems

Comment: The proposal preamble requested information on existing process control computer monitoring systems. In response to this request, a number of commenters (A-90-19: IV-D-32; IV-D-57; IV-D-67; IV-D-77) stated that their facilities operate process control computer monitoring systems. One of the commenters (A-90-19: IV-D-77) listed the advantages of process control systems to be accessible historical records of excursions and of the actions taken to correct them; reduced storage of data volume, resulting in

decreased cost and increased availability; and increased ease of implementing agency inspections.

One commenter (A-90-19: IV-D-73) mentioned that some parameter monitoring systems both control the manufacturing process, treatment, and recovery equipment, and obtain monitoring data. The commenter (A-90-19: IV-D-73) explained that these systems monitor parameters one or more times per second, but do not retain all data points. The commenter (A-90-19: IV-D-73) requested that the rule allow other systems that provide a record sufficient to determine compliance. The commenter (A-90-19: IV-D-73) suggested the requirements be defined through the Implementation Plan or operating permit application.

Another commenter (A-90-19: IV-D-79) urged the EPA to promulgate a flexible rule which reflects the wide variation in process control techniques, continuous data acquisition systems, and manual instrumentation reading and logging procedures currently in use at plant sites.

One commenter (A-90-19: IV-D-67) explained that a few years ago their facility began switching from strip chart recorders and indicators, which require a tremendous amount of maintenance, to computer-based control and data storage. The commenter (A-90-19: IV-D-67) maintained that the computer-controlled system allows large amounts of data, approximately 50,000 data points every minute, to be manipulated and analyzed, resulting in significant cost benefits from more efficient operations. The commenter (A-90-19: IV-D-67) stated that computerized systems are really the only cost-effective way to accurately manage large amounts of data for extended periods of time.

Another commenter (A-90-19: IV-D-57) said that their facility maintains a backup record on a strip chart of some key parameters relating to compliance. However, the commenter (A-90-19: IV-D-57) acknowledged that the strip charts are not required to run the process, and are utilized less frequently because computerized process control systems are superior in most circumstances. The commenter (A-90-19: IV-D-57) also

stated that readings are sometimes recorded manually, although this is not common. Their facilities (A-90-19: IV-D-57) may also have records storage on magnetic media and hard copy. One commenter (A-90-19: IV-D-64) stated that the use of computer systems will be a necessity to meet the extensive recordkeeping requirements for the HON, title V, and title VII.

Response: The EPA appreciates the information provided by these commenters, and agrees that process control computer monitoring systems can be used to comply with the HON monitoring, recordkeeping, and reporting requirements if they provide all of the information specified in subpart G. The EPA has made every effort to provide flexibility in the HON rule. The rule specifies the minimum acceptable recordkeeping and reporting requirements but allows sources to design their own systems to meet the requirements. Furthermore, §63.151(f) and (g) allow sources to apply to monitor alternative parameters and to propose alternative monitoring, recordkeeping, and reporting systems. As noted in section 2.3.2, provisions have been added to allow for use of process control computer systems that utilize data compression, on a case-by-case basis. While the HON does not specifically require computer systems, it is expected that use of computer systems will expedite recordkeeping and reporting and will be used by most sources.

Comment: Three commenters (A-90-19: IV-D-73; IV-D-110; IV-F-1.1 and IV-F-3) requested that the rule allow utilization of existing recordkeeping equipment to the maximum extent possible. One of these commenters (A-90-19: IV-D-110) was concerned that some existing computerized monitoring systems that were installed for process control, may be capable of providing accurate and reliable data for determining compliance, yet may not satisfy the proposed requirements for continuous monitoring systems. The commenter (A-90-19: IV-D-110) noted that older facilities without computerized process controls will be especially burdened by the requirements.

Response: Sections 63.151(f) and (g) and 63.152(e) allow case-by-case applications to request alternative monitoring parameters, alternative monitoring frequencies, and alternative recordkeeping and reporting systems. These requests, along with the required information, must be included in the Implementation Plan or operating permit application. Further details on minimum requirements for requests to use non-automated monitoring systems are provided in a later response to this section. Section 63.8(f) of the General Provisions also allows applications to the Administrator to use alternative monitoring methods.

Comment: Three commenters (A-90-19: IV-D-32; IV-D-73; IV-D-81) suggested that non-automated facilities be allowed to use strip charts and pie charts of monitored parameters to determine exceedances and to review the charts and record values that exceed established parameters rather than values at a given time interval.

Response: The HON does not preclude use of strip chart recorders. However, in order to comply with the requirement to record daily average values and report those that are outside the established range, the source would need to calculate daily average values from points read off the strip chart on days when any recorded value was outside the range. In order to reduce the burden of daily average calculations, §63.152(f), specifies that if all recorded values during an operating day are within the established range, an owner or operator may record a statement to that effect rather than calculating a daily average.

Comment: Two commenters (A-90-19: IV-D-32; IV-D-81) recommended allowing sources that do not have automated monitoring systems to monitor operating parameters periodically (for example, every 4 hours) instead of once every 15 minutes in order to reduce the recordkeeping and reporting burden. The commenter (A-90-19: IV-D-32; IV-D-81) provided specific language to allow such monitoring with enforcement agency approval.

Response: The EPA estimates that there are relatively few facilities that do not already have automated computer monitoring systems in place. However, in response to public comments and in order to reduce the burden on those sources that are not automated, provisions were added in §63.151(g) to allow non-automated sources to request approval from the permitting authority to manually read and record the value of the relevant operating parameter no less frequently than once per hour. Daily average values must be calculated from the hourly values and recorded. The request must contain: (1) a description of the planned monitoring and recordkeeping system; (2) documentation that the source does not have an automated system; (3) reasons the source is requesting an alternative monitoring and recordkeeping system; and (4) demonstration that the proposed monitoring frequency is sufficient to represent control device operating conditions considering typical variability of the specific process and control device operating parameter being monitored. In approving the request, the implementing agency may consider the variability of the parameter, and whether a monitoring frequency that is longer than once every 15 minutes is sufficient to characterize control device operation.

2.3.4 Record Retention Time and Accessibility

Comment: Several commenters (A-90-19: IV-F-1.3 and IV-F-5; IV-D-32; IV-K-38; IV-D-48; IV-D-59; IV-D-75; IV-D-82; IV-D-83) requested that sources have the option of storing records at an accessible off-site location.

Some of the commenters (A-90-19: IV-F-1.3 and IV-F-5; IV-D-82; IV-D-83) suggested storing the data off-site consistent with the requirements under the operating permit program rule. Commenters suggested that off-site storage be allowed after keeping the records on-site for a period of one year (A-90-19: IV-D-59); and two years (A-90-19: IV-D-32; IV-D-48; IV-D-75; IV-K-38). Two commenters (A-90-19: IV-D-32; IV-D-97) claimed that inspectors seldom request to review data that is more than 18 months old. One of the commenters (A-90-19: IV-D-59) recommended that on-site

records be retrievable within a four-hour period and that off-site records be retrievable within three days.

One commenter (A-90-19: IV-D-57) contended that additional on-site warehouses for storage of monitoring records would need to be built to facilitate storage of all records.

One commenter (A-90-19: IV-K-38) requested provisions for facilities that may not be occupied by humans (i.e., remote pumping stations) and for which no computer terminal is present to allow access to central records (i.e., for security purposes).

Two commenters (A-90-19: IV-D-33; IV-D-34) requested that the Agency define the term "readily accessible" in §63.103 of subpart F. One of the commenters (A-90-19: IV-D-34) recommended that the term "readily accessible" refer to storage that is reasonably accessible given the time of data collection and consistent with the owner's/operator's record collection and retention policies. The commenter (A-90-19: IV-D-34) suggested that for recent records (last six months operating data) readily accessible records be available at the operating location on the day of inspection. For records older than six months, readily accessible records could be stored in compressed fashion or at a separate location and would be available for inspection within one week of request, the commenter (A-90-19: IV-D-34) suggested. The commenter (A-90-19: IV-D-34) stated that alternate options of "readily accessible" could be defined with the permitting authority. The other commenter (A-90-19: IV-D-33) recommended that the term "readily accessible" allow a reasonable amount of time for someone with an understanding of the computer system to become available, restore the backup tape to the system's hard disk which can take one to several hours, and provide the enforcement agency with a process engineer to assist in understanding the data.

Response: In response to comment, the record retention provisions contained in subpart F were revised. Section 63.103(c) of the HON requires that all records

specified in subparts F, G, and H be maintained in such a manner that they can be readily accessed. The most recent two years of records must be retained on site at the source or must be accessible from a central location by computer. The remaining three years of data may be retained off site. The records may be maintained in hard copy or computer readable form including, but not limited to, on paper, microfilm, computer, floppy disk, magnetic tape, or microfiche.

These provisions reduce the burden of record storage by providing flexibility to store records in the location and format that are most convenient for the source.

In response to commenter (A-90-19: IV-K-38), special provisions should not be needed for remote facilities. The sources subject to the HON are major sources, and the "source" includes emission points from all the SOCMI process units at a site. A remote pumping station not occupied by humans not be a separate source. Records can be retained anywhere at the source (e.g., at individual process units or in a central building) as long as they are readily accessible.

Comment: Several commenters (A-90-19: IV-F-1.3 and IV-F-5; IV-D-32; IV-D-59; IV-D-75; IV-D-82) maintained that retaining records at a source for five years as required in the proposal would be burdensome and expensive. One commenter (A-90-19: IV-D-59) suggested that records be retained for two instead of five years in order to reduce the recordkeeping burden and file space needs. One commenter (A-90-19: IV-D-32) stated that their systems currently calculate and maintain monitored parameters for up to one year, but could be programmed to retain data for five years.

Response: The HON and General Provisions require records to be kept for five years, which is consistent with the recordkeeping requirements of section 70.6 of the operating permit program. As explained in the previous response, records must be maintained in such a manner that they are readily accessible. The most recent two years of data must be retained on site or accessible from a central location by computer and the remaining three years may be stored off site.

## 2.4 REQUIREMENTS FOR GROUP 2 EMISSION POINTS

Comment: Several commenters (A-90-19: IV-F-1.1 and IV-F-3; IV-D-62; IV-D-75; IV-D-79; IV-D-82; IV-D-92; IV-D-102; IV-D-110; IV-D-112) recommended that monitoring, recordkeeping, and reporting requirements for Group 2 emission points be eliminated. Another commenter (A-90-19: IV-D-77) recommended requiring Group 2 emission points to submit reports only on an annual basis. Some of the commenters maintained that a source should not have to spend valuable resources or risk incurring significant penalties for recordkeeping and reporting violations when no additional corresponding environmental benefit is achieved (A-90-19: IV-D-32; IV-D-62; IV-D-102; IV-D-112) or when the emission point "is not even subject to the emission standard" (A-90-19: IV-F-1.1 and IV-F-3; IV-D-82).

One commenter (A-90-19: IV-D-35 and IV-D-36 and IV-D-121), (A-90-20: IV-D-19), (A-90-21: IV-D-17), (A-90-22: IV-D-13), (A-90-23: IV-D-20) contended that all provisions requiring records identifying equipment that is not subject to the rule should be deleted because by requiring records, the EPA has in a sense made the source or equipment subject to the rule, and the source could be fined for failing to keep these records.

Response: Every Group 1 and Group 2 process vent, storage vessel, transfer operation, wastewater operation, and equipment leak emission point associated with a SOCMI process unit, as defined in subpart F, is subject to the HON. However, only Group 1 points are required to be controlled to the level of the RCT. The HON requires only minimal recordkeeping and reporting for Group 2 emission points. This approach has been used in previous NSPS and NESHAP such as the SOCMI distillation and air oxidation NSPS and the benzene NESHAP. The requirements for Group 2 emission points are used to determine that the emission point is classified correctly, thus showing that control requirements are not applicable, and to catch changes that cause a Group 2 point to become Group 1.

The records required for Group 2 points include, for example, storage vessel capacity, annual transfer rack throughput and rack-weighted average vapor pressure, and wastewater flow and concentration. A source would be required to determine this information even if HON did not require these records because, in order to develop plans to comply with HON, the source would need to determine whether or not each point was Group 1 (subject to control requirements). It makes sense to retain this information on record and identify Group 2 points in the Implementation Plan or operating permit application to avoid having to recreate such information whenever there is a question on whether a point is Group 1 or Group 2.

In general, there is minimal ongoing recordkeeping and reporting for Group 2 points. The only recordkeeping that is required is needed to determine whether the emission point remains Group 2 or becomes Group 1. For example, for transfer racks, throughputs and rack weighted average partial pressure must be calculated each year from the previous year's data because these values vary from year to year and, therefore, the Group classification of a rack could change. However, more extensive reporting is not required if the rack remains Group 2.

Additional comment summaries, and responses that are specific to monitoring, recordkeeping, and reporting for Group 2 process vents and transfer racks are contained in sections 2.4.2 and 4.3 of BID volume 2A, respectively.

## 2.5 MONITORING, RECORDKEEPING, AND REPORTING BURDEN

### 2.5.1 General

Comment: Many commenters (A-90-19: IV-D-32; IV-D-35; IV-D-46; IV-D-62; IV-D-63; IV-D-64; IV-D-72; IV-D-74; IV-D-75; IV-D-79; IV-D-82; IV-F-5 and IV-D-83; IV-D-86; IV-D-92; IV-D-98; IV-D-102; IV-D-106; IV-D-110; IV-D-115; IV-F-1.1) stated that the monitoring, recordkeeping, and reporting requirements of the HON are excessive or burdensome. Two commenters (A-90-19: IV-D-72; IV-D-106) asserted that the

requirements were especially burdensome for those sources that plan to emissions average.

One commenter (A-90-19: IV-D-32) stated that there is no rationale for verification for administrative requirements that are duplicative or unrelated to a control requirement.

Many commenters (A-90-19: IV-D-32 and IV-F-1.1 and IV-F-3; IV-D-32 and IV-F-1.3 and IV-F-5; IV-D-32; IV-D-46; IV-D-48; IV-D-50; IV-D-62; IV-D-63; IV-D-69; IV-D-74; IV-D-75; IV-D-77; IV-D-82; IV-D-83; IV-D-102; IV-D-108; IV-D-110; IV-D-112) cautioned the EPA against requiring monitoring, recordkeeping, and reporting provisions that are overly costly, unnecessary for assessing a source's compliance status, and provide no environmental benefit.

Response: The EPA has made every effort to reduce the recordkeeping and reporting burden, and to require only those records and reports necessary to determine compliance. For example, in the proposed and promulgated subparts G and H, almost all reports have been consolidated into the Initial Notification, the Implementation Plan, the Notification of Compliance Status, and the Periodic Reports. This simplifies and reduces the frequency of reporting. Sources have the option of retaining records either in paper copy or in computer readable formats, whichever is less burdensome. If multiple performance tests are conducted for the same kind of emission point using the same test method, only one complete test report is submitted along with summaries of the results of the other tests. This reduces the number of lengthy test reports to be copied and submitted. For continuously monitored parameters, periodic reporting is limited to excursions outside the established ranges. The in-range values are not required to be reported. Recordkeeping and reporting for Group 2 points has been minimized.

The single most significant change made to the proposed rule to reduce the burden is allowing retention of hourly average values of monitored parameters instead of 15-minute values for days when there is not an excursion. This change reduces by a factor of four, the number of records that must

be digitally converted by computer systems, copied onto tapes or printed as hard copy, duplicated, and stored.

There are a number of other areas where the burden has been reduced in the final rule. For instance, the transfer operation provisions were revised to no longer require five minute records and to allow design analyses instead of performance testing for racks that are used infrequently (see chapter 4.0 of BID volume 2A). Equipment leaks recordkeeping and reporting requirements have been reduced by streamlining the reporting system so there are semiannual reports which can be submitted at the same time as the subpart G reports. To reduce the leak detection burden, the final rule does not require response factor adjustments to Method 21. The requirements to identify and document equipment not in VOHAP service and equipment in vacuum service have been deleted. (The rationale for these equipment leaks changes is contained in the preamble to the final rule and chapter 5.0 of BID volume 2A).

Wastewater operations monitoring, recordkeeping, and reporting requirements have also been reduced. Method 21 is now required only initially, instead of annually as proposed, and visual inspections are performed on an annual basis. Monthly measurements required in table 11 of the proposed subpart G were deleted, because the initial performance test is sufficient to determine compliance. A change to the location of point of generation sampling will reduce the testing, monitoring, reporting, and recordkeeping requirements for some sources because sampling may be done at fewer locations. The compliance requirements for maintenance wastewater and maintenance turnaround wastewater have been combined, which simplifies compliance and reporting. Very small wastewater containers (less than 0.1 $m^3$ capacity) are no longer subject to the rule, reducing the monitoring and recordkeeping burden. These and other changes to the wastewater provisions are discussed in the wastewater sections of the policy and technical BID's.

The provisions to request to use alternative monitoring and recordkeeping systems have been expanded, providing sources the flexibility to use their existing monitoring and recordkeeping equipment as long as the source can demonstrate compliance with the rule. Non-automated sources can now request approval to take manual readings and record a value at least once an hour, for use in determining daily average values. Sources wishing to use data compression systems can now request approval to do so. This will allow sources that have data compression systems already installed or who plan to install a system to monitor process control, to utilize these systems if they demonstrate compliance with the rule. These new provisions should reduce the burden considerably on affected sources.

Comment: One commenter (A-90-19: IV-D-98) stated that the level of monitoring in the HON is unwarranted on a "risk-to-reward" basis and is not mandated by the Act.

Response: The continuous monitoring of control device operating parameters required by the HON is used to determine continuous compliance with the operating permit requirements for proper operation of control devices. The parameter monitoring is necessary to provide information that will satisfy the requirements of section 114(a)(3) of the Act to certify compliance status and whether compliance is continuous or intermittent. The EPA considers the level of monitoring appropriate and necessary for compliance and disagrees with the commenter's assertion that the level is unwarranted.

Comment: One commenter (A-90-19: IV-D-64) recommended deleting the reporting requirements in proposed §§63.117, 63.118, 63.129, and 63.130, claiming that they are burdensome and unnecessary to sources and regulatory agencies.

Response: The sections of subpart G referred to by the commenter (A-90-19: IV-D-64) contain all of the reporting requirements for process vents and transfer. They include the information that must be submitted in the Notification of Compliance Status, such as performance test results, and information for the periodic reports, such as monitored

parameter excursions. These reports are clearly necessary to determine whether a source is in compliance with the standard.

2.5.2 Violations

Comment: Three commenters (A-90-19: IV-D-32; IV-D-77; IV-D-110) stated that regulatory agencies should not spend their resources pursuing minor paperwork violations which do not contribute to emissions reductions, but should spend their resources implementing other important programs, such as the operating permit program (A-90-19: IV-D-32).

One commenter (A-90-19: IV-D-115) suggested that the EPA determine the "bare-minimum" requirements for recordkeeping and reporting that will still render the operating permit federally enforceable.

Two commenters (A-90-19: IV-D-64; IV-D-77) stated that excessive reporting requirements invite enforcement for trivial reporting mistakes or omissions. One commenter (A-90-19: IV-D-64) reminded the EPA that the Act contains self-reporting requirements and penalties for sources that ignore or attempt to elude requirements.

Another commenter (A-90-19: IV-D-35 and IV-D-36 and IV-D-121); (A-90-20: IV-D-19); (A-90-21: IV-D-17); (A-90-22: IV-D-13); (A-90-23: IV-D-20) objected to provisions stating that a source can be fined for noncompliance because a datapoint was misplaced even if all equipment at the facility meets all legal standards.

Response: Under section 114(a) of the Clean Air Act, source owners or operators have the burden of demonstrating that each emission unit remains in compliance with all applicable standards at all times. Although continuous emission monitors (CEM's) are not always required, there must still be some means of verifying compliance on a continuous basis. Regulations must therefore establish monitoring requirements that are capable of determining continuous compliance with the applicable standards.

Consistent with the PRA, the EPA always attempts to reduce the burden of recordkeeping and reporting requirements on the regulated community to the maximum extent, while still

maintaining the enforceability of the rule. The types of data required and frequency of monitoring and recordkeeping are based on the likely variability of emissions from the kind of point being regulated. The EPA believes that the recordkeeping and reporting requirements in the HON are the "bare minimum" necessary to determine compliance on a continuous basis.

Because such data are used directly to determine compliance, the Agency considers monitoring, recordkeeping, testing, and reporting requirements to be an integral part of all regulations developed under the Act. Consequently, not all "paperwork" violations would be considered minor. While the EPA attempts to target the majority of its enforcement resources on major violators of the Act, the EPA does not disregard "minor" violations of the Act. Moreover, with field citation authority, the EPA has been provided with a specific enforcement tool to address these types of violations. The field citation rule will be proposed in the future under 40 CFR part 59.

Comment: One commenter (A-90-19: IV-D-98) requested clarification regarding penalties imposed by 1990 amendments to the Act of $25,000 per "incident" for violations of emissions limit. The commenter (A-90-19: IV-D-98) claimed it was not clear whether these penalties would be assessed on the basis of the overall plant limit or with respect to each emissions point, nor what the implications of using emissions averaging as a means of compliance are with respect to a violation of the emissions limit.

Response: The rule does not establish an overall plant limit; rather each emission point in a source subject to the HON must comply with control or operating requirements established for each kind of point. If any individual emission point experiences an unexcused excursion, this constitutes a violation that could be subject to the maximum penalty of $25,000 per day of violation. This penalty may be assessed for each violation at each control device per day. (If more than one rule applies to a point or control device,

more than one violation may be cited for each point or control device found to be out of compliance.)

These same provisions apply to emission points involved in an emissions average. If any controlled point in an average experiences an unexcused excursion, the point is liable for up to the $25,000 maximum penalty per violation per day. Moreover, if the violation also results in noncompliance with the quarterly averaging check or the annual averaging balance, it counts as yet another violation, which is subject to the penalty. Therefore, the source may be penalized up to a maximum of $25,000 for every day a point experiences an unexcused excursion and another $25,000 for every day of the quarter or year that the average is out of balance. It should be pointed out, however, that the EPA will exercise its enforcement discretion in assessing penalties.

2.5.3 Cost Estimates

Comment: Several commenters commented on the EPA's estimates for costs of monitoring, recordkeeping, and reporting, and others provided their own estimates. Some of the commenters (A-90-19: IV-F-1.1; IV-D-82; IV-F-5 and IV-D-83) stated that the preamble indicates that as much as 25 percent of the HON's cost is attributable to monitoring, recordkeeping, and reporting and that this cost is too high.

One commenter (A-90-19: IV-D-102) criticized the EPA for not addressing the significant recordkeeping and reporting costs in the preamble and Economic Impacts Analysis that accompanied the proposed rule. The commenter (A-90-19: IV-D-102) stated that an October 8, 1992 memorandum from the EPA to OMB predicted annual costs of $48.1 million. The commenter (A-90-19: IV-D-102) asserted that this estimate may be low and that the EPA should re-evaluate the extensive recordkeeping and reporting requirements before issuing the final rule.

Commenters estimated that the monitoring, recordkeeping, and reporting requirements of the HON will require the equivalent of: one person for each major SOCMI unit (as much as 8 person-years) for a resource cost of up to $750,000 per

year per plant (A-90-19: IV-D-57); and 0.5 to 1.5 person-years for each process unit (A-90-19: IV-D-32; IV-D-62; IV-D-77; IV-D-102; IV-G-4).

One commenter (A-90-19: IV-D-35 and IV-D-36 and IV-D-121), (A-90-20: IV-D-19), (A-90-21: IV-D-17), (A-90-22: IV-D-13), (A-90-23: IV-D-20) stated that the HON recordkeeping burden will greatly exceed the 1600 person-hours per initial response, and 3200 person-hours per source annually that the EPA estimated in the proposal. The commenter (A-90-19: IV-D-35 and IV-D-36 and IV-D-121), (A-90-20: IV-D-19), (A-90-21: IV-D-17), (A-90-22: IV-D-13), (A-90-23: IV-D-20) maintained that the cost to hire another two or four people per process unit would come at the expense of making their operations less efficient, less productive, and possibly less protective of health, safety, and the environment.

One commenter (A-90-19: IV-D-115) reported that one source has estimated they will need to hire seven full-time employees to comply with recordkeeping and reporting requirements even though they already meet most control requirements. Three of the commenters (A-90-19: IV-D-32; IV-D-77; IV-D-115) stated that the additional employees will be required regardless of whether a source has to install any new control equipment to comply with the HON.

Response: As described in the response in section 2.5.1, several changes were made between proposal and promulgation to reduce the recordkeeping and reporting burden. The costs of monitoring, recordkeeping, and reporting were recalculated considering both the commenter's suggestions that the original burden may have been underestimated, and the changes made to the rule.

In reevaluation of the associated burdens over the first three years after promulgation, including the requirement revisions, the EPA estimates that the monitoring, recordkeeping, and reporting will require approximately 5,200 person-hours per year at an average size existing source. About 2,500 of these hours per year are attributed to

the equipment leaks standards. For a new source at a site with an existing source, the EPA estimates that this burden would be increased by approximately 500 hours per year on the average. For a new source, not at an existing source site, the EPA estimates the burden to be approximately 10,700 hours per year on the average. The new estimated costs associated with monitoring, recordkeeping, and reporting will generally add an additional one third to the estimated control costs over the first three years after promulgation. The total national annual cost of monitoring, recordkeeping, and reporting is estimated to be $70 million per year, compared to total national costs of the rule of $230 million per year. For additional information on this topic, see section V.C of the preamble to the final rule, or the SF-83 and Supporting Statement, which is contained in Docket number A-90-19, category IV-H.

Comment: Several commenters (A-90-19: IV-D-32; IV-D-74; IV-D-110) asserted that for a single operating parameter being monitored on a control device, a total of at least 175,200 data values must be recorded and retained over a five-year period (four data values/hr X 24 hr/day X 365 day/yr X 5 yr = 175,200 data values). The commenters (A-90-19: IV-D-32; IV-D-74; IV-D-110) contended that multiple emission points and control devices are present at each major plant site and that the total number of data elements required to be recorded, retained, and readily accessible at a source will be staggering.

Response: The final rule allows retention of hourly average data instead of 15-minute data for continuously monitored parameters on days when there are not excursions. This will reduce the number of data elements that must be retained by a factor of four. The rationale for this change is explained in section 2.3.1. It should also be noted that data values are recorded only during periods of process or control device operation, which may be less than 24 hours per day. Furthermore, if multiple emission points are routed to a common control device, this will reduce the number of data

values obtained, because the parameter monitoring is done at the control device, not at each of the emission points ducted to the device.

Comment: One commenter (A-90-19: IV-D-98) stated that the HON will require reporting on 10 to 100 times as many emission or internal control points compared to NPDES monitoring. The commenter (A-90-19: IV-D-98) estimated that a typical facility will need to devote at least 50 times the resources to HON testing, reporting, and recordkeeping as compared to the NPDES program.

Response: The EPA acknowledges that because a typical SOCMI facility releases HAP emissions to the atmosphere from many emission points, the required monitoring, recordkeeping, and reporting may be extensive. A source may release emissions from multiple reactor or distillation process vents, numerous storage tanks, a number of loading racks, various points in the wastewater collection and treatment system, and equipment leaks. Therefore, to reduce HAP emissions to the level of MACT controls, the associated monitoring and reporting must be required for many individual emission points at a facility. This is a different situation from NPDES discharges. Typically, plants release plant wastewaters to water bodies through only a few points. Therefore, only a few effluent discharge points must be monitored under the NPDES program.

It should be noted that if a SOCMI facility routes multiple emission points together to the same control device, this will reduce the monitoring burden of the HON, because the monitoring requirements apply to each control device. The relative resources required for HON monitoring and NPDES monitoring will vary depending on site-specific characteristics for each source.

### 2.5.4 Compliance with the General Provisions

Many comments were received on the overlap between the HON and the General Provisions. These comments are summarized and responded to in section 6.1 of BID volume 2D.

### 2.5.5 Impact on Regulatory Agencies

Comment: Four commenters (A-90-19: IV-D-32; IV-D-62; IV-D-63; IV-D-64) suggested eliminating any unnecessary monitoring, recordkeeping, and reporting requirements that will be burdensome to the implementing agencies responsible for enforcing the rule. One of the commenters (A-90-19: IV-D-63) stated that reducing the requirements may enhance enforcement of the rule because implementing agencies would not be required to evaluate unnecessary data and information.

One commenter (A-90-19: IV-D-32) contended that the public will benefit from streamlined monitoring, recordkeeping, and reporting requirements because the amount of extraneous information available for review will be lessened.

Response: The EPA recognizes that unnecessary monitoring, recordkeeping, and reporting requirements would burden both the source and the enforcement agencies. Every attempt has been made to reduce the amount of monitoring, recordkeeping, and reporting to only that which is necessary to demonstrate compliance. Examples of actions the EPA has taken to reduce the monitoring, recordkeeping and reporting burden are described in section 2.5.1 of this BID volume.

## 2.6 RECORDKEEPING AND REPORTING CONSISTENCY WITH OTHER REQUIREMENTS

Comment: One commenter (A-90-19: IV-D-108) urged the EPA to make the frequency and timing of reports consistent for all MACT standards and for operating permits.

Response: The HON requires periodic reports to be submitted semiannually in most cases, although certain circumstances require quarterly reporting instead. Semiannual reporting is consistent with §70.6(a)(3) of the operating permit program rule.

The General Provisions also provide a consistent framework. However, other reporting schedules and frequencies may be appropriate in future MACT standards.

Comment: One commenter (A-90-19: IV-D-108) recommended that the EPA develop standardized reporting forms in order to

organize reporting and recordkeeping requirements for all Clean Air Act regulations on one form.

Another commenter (A-90-19: IV-D-92) favored consolidating the HON recordkeeping and reporting requirements with existing requirements whenever possible. One commenter (A-90-19: IV-D-58) requested that the EPA provide guidance in the General Provisions, the HON, and other MACT rules to describe which recordkeeping, monitoring, and reporting requirements are preeminent and address any inconsistencies among the HON and other rulemakings, such as NSPS and existing NESHAP.

Response: In order to clarify which requirements to comply with when regulations overlap, the EPA has included a list of the requirements and which is more stringent in §63.110 of the final rule.

The EPA believes that in most cases the HON contains more stringent requirements than in other existing regulations. For these cases, the EPA has decided to override the requirements of the existing regulations with the requirements of the HON. In other cases, the EPA has specified which parts of each rule are still required. And in other cases, the EPA has allowed for site-specific determination of requirements. This topic is discussed further in section 6.6 of BID volume 2D. The particular recordkeeping and reporting provisions that apply to the HON are listed in table 3 of subpart F of the HON.

If an emission point is covered by HON and a standard not specifically addressed in §63.110 of subpart G, the operating permit will establish requirements based on what is in the standards. A case-by-case determination of which standard is more stringent will be made.

Unfortunately, due to the site-specific information that must be included in reports, standardized reporting forms are not feasible. However, the operating permit program addresses this issue to some extent by helping coordinate amongst rules and by reducing the overlap.

Comment: One commenter (A-90-19: IV-K-68) requested that the HON and the General Provisions provide flexibility to State and local agencies that require emission controls more stringent than the HON by requiring less burdensome monitoring, recordkeeping and reporting.

Response: The Act allows State and local agencies to enforce regulations that are more stringent than Federal rules. A more stringent rule may or may not have more stringent monitoring, recordkeeping, and reporting provisions. All sources subject to the HON must comply with the monitoring, recordkeeping, and reporting provisions contained in subparts F, G, and H. The HON contains provisions which specify which requirements owners or operators must comply with when they are subject to existing Federal regulations. A source with a more stringent State or local standard would be required to comply with the provisions of that standard.

Comment: One commenter (A-90-19: IV-D-74) requested that the HON contain monitoring, recordkeeping, and reporting requirements that are consistent with and not duplicative of the requirements under the operating permits program rule and the enhanced monitoring rule. The commenter (A-90-19: IV-D-74) recommended that the EPA review the HON in light of the title V and VII requirements as implementation of the Act progresses. Other areas of concern for the commenter (A-90-19: IV-D-74) included: use of parameter monitoring data to assess compliance with the permit conditions and the emissions limits; *de minimis* emission points; consistency in the conditions for parameter monitoring; and emission calculations. The commenter (A-90-19: IV-D-74) stated that the HON appears to be consistent with many title VII issues.

Another commenter (A-90-19: IV-D-29) questioned the frequency with which reports will be required to be submitted to ensure compliance under the HON once the enhanced monitoring regulation is promulgated, because the HON currently requires semi-annual reporting, and the draft enhanced monitoring regulation requires quarterly reporting.

Another commenter (A-90-19: IV-D-68) claimed that the HON monitoring, recordkeeping, and reporting requirements are more stringent than requirements in the draft enhanced monitoring regulation.

Response: Recordkeeping and reporting requirements play an important role in both the operating permits program and enhanced monitoring program, as these programs rely heavily on self-monitoring and self-reporting by individual sources. While the EPA certainly aims to avoid duplication in its regulatory programs, it is important to note that there are basic differences between the programs highlighted above. Although regulations developed under title III will incorporate the basic concepts of enhanced monitoring, the enhanced monitoring rule itself will not apply to part 63 sources, and hence, will not affect those sources subject to the HON. While the Agency will use the enhanced monitoring reference document as guidance for developing monitoring requirements for many of the MACT standards, the two programs are distinct and not duplicative.

The operating permits program contains monitoring, recordkeeping, and reporting requirements minimally sufficient for some sources to verify their own compliance and submit compliance certifications. These monitoring, recordkeeping, and reporting requirements serve as a baseline minimum for all sources subject to title V. However, for certain sources, more frequent or substantial monitoring, recordkeeping, and reporting are necessary to certify compliance. Consequently, regulations developed under title III, including the HON, will incorporate additional requirements that go beyond the compliance provisions established under the operating permits program. Although these additional compliance requirements may appear to overlap, duplicate records or reports are not required. Sources must comply with only the most stringent requirements.

If an emission point is subject to existing NSPS or RACT requirements and HON control is the most stringent, then HON monitoring, recordkeeping, and reporting requirements would

apply. Consequently, after the enhanced monitoring rule is promulgated, emission points subject to NSPS or RACT would be required to conduct monitoring of sufficient quality to meet the standard for enhanced monitoring. These requirements may be more stringent than the monitoring provisions required of sources subject only to the HON.

## 2.7 MISCELLANEOUS REPORTING AND RECORDKEEPING

Comment: One commenter (A-90-19: IV-D-68) stated that the HON is a "distributed process control regulation" instead of a technology-based standard because of the excessive requirements for reporting, recordkeeping, and continuous monitoring.

Response: It is unclear what the commenter means by a "distributed process control regulation." All NESHAP, as well as other standards set under the Act such as NSPS, contain not only emission limits (or design, equipment, work practice, or operational standards) but also associated testing, monitoring, recordkeeping, and reporting requirements. The monitoring, recordkeeping, and reporting provisions are necessary to provide both the source and the implementing agency the ability to determine compliance with the standards.

Comment: One commenter (A-90-19: IV-D-98) recommended that only emission points likely to emit more than 1 ton/yr be required to comply with the testing and reporting requirements for 5 years and that the implementing agency could expand this on a case-by-case basis.

Response: In order to determine compliance, it is necessary to keep the required records and submit the required reports for each emission point subject to the HON. The rule is structured to require less recordkeeping and reporting for Group 2 emission points, which tend to be emission points with less emissions potential. The 1 ton/year recommendation would be very complex to implement. This approach would require the source to calculate emissions from each emission point to determine whether each point is subject to reporting, and the HON regulation would need to specify detailed emission calculation procedures and equations so that emissions were

determined on a consistent basis. The recordkeeping and reporting system that was developed for the HON is less burdensome and more effective than the approach suggested by the commenter.

Comment: Two commenters (A-90-19: IV-D-32; IV-D-115) suggested all reports be allowed to be submitted electronically. One commenter (A-90-19: IV-D-115) argued that this would reduce paperwork and be useful in establishing national databases for MACT, Pollution Prevention, and alternative test methods.

Response: Subpart F has been revised to specify that, if acceptable to both the regulatory agency and the owner or operator of the source, reports may be submitted on electronic media. This provision applies to reports required by subparts F, G, or H.

Comment: One commenter (A-90-19: IV-K-38) requested that the HON continue to override proposed §63.10(b)(1) of the General Provisions [as was done in proposed §63.103(a)(5)], which requires that computer files be backed up on a floppy disk. The commenter (A-90-19: IV-K-38) discussed how their company has progressed beyond the use of floppy disks and now uses cassette tapes for storage purposes.

Response: The final HON rule overrides §63.10(b)(1) of the final General Provisions. A source may use whatever means is most useful and cost effective for storing records and other data.

Comment: One commenter (A-90-19: IV-D-86) suggested that §§63.152 and 63.182 define who may sign the documents, certifications, and reports required to be submitted, as is done in the Clean Water Act and RCRA regulations.

Response: The signature of reports is addressed in the General Provisions, so it is not necessary to include provisions in §63.152 or §63.182. All reports must be signed by a "responsible official" as defined in §63.2 of the General Provisions. Compliance demonstrations and reports required by the operating permit program rule must also be signed by a

"responsible official" as defined in section 70.2 of 40 CFR 70.

Comment: One commenter (A-90-19: IV-D-32) commended the EPA for limiting reporting to periods when operating parameters are outside established ranges and results of other inspections where problems are detected, stating that this significantly reduces the amount of unnecessary information required to be reported.

Response: The EPA appreciates the commenter's (A-90-19: IV-D-32) support. The EPA has tried to keep the reporting requirements to only those instances when problems are detected. Monitoring data that is within range must be recorded and maintained but need not be reported. This approach minimizes the paperwork burden, yet assures the information necessary to determine compliance is available.

# 3.0 COMPLIANCE

## 3.1 COMPLIANCE SCHEDULE

Comment: One commenter (A-90-19: IV-D-36) requested that proposed §63.100(f)(2) be revised to specify that the compliance deadline is measured from the date the final rule is promulgated and not from the final rule's "effective date," because this wording may be confusing.

Response: Subpart F has been revised to specify the date of promulgation (the date of publication in the Federal Register) as suggested by the commenter. This revision improves the clarity, but does not change the meaning of the section.

Comment: Three commenters (A-90-19: IV-D-36; IV-D-89; IV-K-73) opposed more stringent compliance deadlines for new sources than for existing sources. One of the commenters (A-90-19: IV-D-36) requested that sources which are new or reconstructed between December 31, 1992 and the compliance date be granted the same compliance date as existing sources (3 years after promulgation).

The second commenter (A-90-19: IV-D-89) asserted that new sources should be allowed at least a six-month interim status from promulgation to the compliance date, during which time industries could be certain of the final requirements.

Response: Section 112(i) of the Act requires new sources to comply at start-up or promulgation (whichever is later). The HON cannot override the Act.

Comment: Many commenters (A-90-19: IV-D-32; IV-D-33; IV-D-48; IV-D-56; IV-D-57; IV-D-69; IV-D-73; IV-D-75; IV-D-77; IV-D-79; IV-D-81; IV-D-86; IV-D-92; IV-D-112; IV-F-1.1 and IV-F-3) stated that it will be difficult or impossible for

some sources to meet the HON's 3-year compliance date due to both obvious and unforeseen circumstances. The commenters went on to say that the need for a compliance extension may not be recognized until after the Implementation Plan is due, and that sources should be allowed to apply for a compliance extension up until the compliance date. Reasons the commenters included for needing additional time to reach compliance were: vendor/supplier delivery delays and vendor problems in keeping up with the high demand for control devices for complying with the HON, other Act programs, and company voluntary programs; permitting delays; construction delays; labor strikes; inclement weather; safety concerns in modifying processes or adding control devices; safety inspections; engineering, design, testing, procurement, and construction steps and the increased demand for engineering, testing, and construction services caused by the HON and other air programs; studies; and unexpected performance problems encountered during start-up. One commenter (A-90-19: IV-D-33) cited an instance where they were first quoted a delivery time of 6 to 12 weeks for an analyzer, but when they ordered the analyzer, the delivery time had increased to 24 to 26 weeks due to high demand caused by the BIF rule. The commenter (A-90-19: IV-D-33) believed similar vendor supply delays could occur due to the HON.

One commenter (A-90-19: IV-D-92) stated that the additional time could be used to determine the impact of the Benzene Waste NESHAP, and to allow the development of pollution prevention and waste minimization practices instead of "end-of-pipe" controls.

Several of the commenters (A-90-19: IV-D-32; IV-D-33; IV-D-75; IV-D-81) contended that the Act places no restrictions on the timing of an application for a compliance extension.

Two commenters (A-90-19: IV-D-86; IV-F-1.1 and IV-F-3) requested that a deadline for the EPA to approve the compliance extension be added to the rule.

Response: In the preamble to the proposed HON rule, the EPA requested comment on the potential difficulties of complying with the HON in the 3-year compliance time and use of the 1-year extension.

Section 63.151(a)(6)(i) of the final HON rule, which overrides and replaces §63.6(i)(4)(i)(B) of the General Provisions, states that requests for extensions for a source as a whole must be submitted in one of 3 ways: (1) as part of the operating permit application; (2) as part of the Initial Notification; (3) or as a separate submittal no later than the date the Implementation Plan is required. The Implementation Plan is due 12 months before compliance for emission points not included in an emissions average, and 18 months before compliance for emission points in an emissions average. It is reasonable that the owner or operator should know by these dates whether there are likely to be unavoidable delays that could cause the source to need a compliance extension.

Information to include in the request for a compliance extension is included in §63.6(i)(6)(i) of the General Provisions. A deadline for EPA approval has not been added to the HON because it is addressed in the General Provisions under §63.6(i)(12)(i). Section 63.6(i)(12)(i) of the General Provisions states that the Administrator will notify the owner or operator in writing of approval or of intention to deny approval of a request for an extension of compliance within 30 calendar days after receipt of the information necessary for review. The 30-day approval or denial period begins after the owner or operator is notified in writing that their application is complete. The Administrator will notify the owner or operator in writing of the status of their application within 30 calendar days after receipt of the original application and within 30 calendar days after receipt of supplementary information that is submitted.

As stated in the promulgation BID for the General Provisions, the EPA considers the compliance extension provisions contained in the General Provisions to provide ample time for a source to determine whether they can meet

their compliance date. The advance request allows sufficient time for the implementing agency to make a determination before the compliance date while still allowing the source adequate time to come into compliance if an extension request is denied. The EPA considers the deadline for compliance extension requests to be reasonable and, therefore, no changes have been made in the final rule.

Letters were also submitted to the General Provisions docket requesting that industry be allowed to submit requests for compliance extensions up until the compliance date. This issue has been addressed in Chapter 2 of the promulgation BID to the General Provisions.

Comment: One commenter (A-90-19: IV-D-85) recommended that §63.100(f) of the proposed rule be changed to require compliance "as expeditiously as practicable, but no later than 3 years after the compliance date." The commenter (A-90-19: IV-D-85) also recommended that the compliance schedule include intermediate dates for completing contracts, beginning construction, etc., so that the implementing agency may intervene if it appears a source will not reach compliance on schedule. The commenter (A-90-19: IV-D-85) also suggested that §63.100(f) clearly state that a 1-year extension may be granted if the additional period is necessary for the installation of controls.

Response: The EPA understands the commenter's desire that sources reach compliance as soon as practicable. However, in most cases, it is likely to take sources about 3 years to comply with the HON and the commenter's suggestions will not result in earlier emissions reductions.

Several steps will be necessary to achieve compliance. For example, sources will need to determine which processes and emission points are subject to the HON, characterize each emission point through calculations or testing to determine whether it is a Group 1 or 2 emission point, assess alternative compliance strategies for their emission points, design control equipment, order and install control equipment, and check whether control equipment is operating properly.

Because the HON may affect a large number of emission points at a source, these activities will take longer than if only a few points were affected. In fact, several commenters believed there could be unavoidable delays that would cause compliance to take longer than 3 years (see previous comments in this section).

Establishing site-specific schedules would increase the paperwork and regulatory burden for both industry and the implementing agencies; and because compliance is likely to take 3 years in most cases, site-specific schedules probably would not result in significant additional emission reductions. However, if States wish to require earlier compliance or specific schedules for attaining compliance, they could do this through the delegation process established under section 112(l) of the Act. This process is implemented through subpart E and was published in the Federal Register on November 26, 1993 (58 FR 62262). Such a change could be made by a State under the "Option 1 - adjustment to Federal rule" provisions of the section 112(l) rules.

Both §63.100(k) [previously §63.100(f) in the proposed rule] and the paragraph on extension requests in §63.151(a)(6) of subpart G state that a request for an extension must include the data described in §63.6(i)(6)(i) of the General Provisions. The General Provisions [§63.6(i)(8) through (16)] govern the review and approval of requests for extensions of compliance for HON and other NESHAP. With these requirements in mind, the EPA decided not to revise §63.100(k) of subpart F as suggested by the commenter.

Comment: One commenter (A-90-19: IV-D-69) suggested requiring HON sources to be in compliance at the time the source's operating permit is issued. The commenter (A-90-19: IV-D-69) stated that such provisions would simplify the applicability determination, eliminate the need for some sources to submit Implementation Plans, and others to submit applications for compliance deadline extensions.

Response: The Act does not allow a source more than 3 years to reach compliance. The due date for HON compliance

cannot be based on issuance of the operating permit because issuance will vary fr state to state and plant to plant. In some cases, the opera g permit could be issued well before the compliance date, while in other cases it may be issued much later. Thus, it is more appropriate to specify a 3-year compliance period and not tie the compliance date to the operating permit issuance.

Comment: A number of commenters (A-90-19: IV-D-32; IV-D-34; IV-D-36; IV-D-81; IV-D-98; IV-D-112) advocated granting a Group 2 emission point that becomes a Group 1 emission point [proposed §63.100(f)(4)] up to 3 years to come into compliance with Group 1 control requirements. Two commenters (A-90-19: IV-D-32; IV-D-81) noted t section 112(i)(3)(A) of the Act allows up to 3 ears for existing sources to meet MACT requirements. The commenters (A-90-19: IV-D-32; IV-D-34; IV-D-81; IV-D-112) maintained that the proposed 150-da period is not enough time for a source to e ineer, perm , purchase, and construct control equipment to meet Group 1 MACT requirements and that it conflicts with draft language for both the section 112(g) rule and the General Provisions. Two of the commenters (A-90-19: IV-D-32; IV-D-81) suggested that when a facility notifies the EPA of a Group 2 to a Group 1 status change, that the facility could inform the EPA of the time required to install the controls.

Response: The EPA agrees with the commenters that 150 days may not be a sufficient amount of time for a source making a group status change to come into compliance. Therefore, the final rule in §63.100(k)(4) of subpart F has been revised to state that a Group 2 emission point that becomes a Group 1 emission point must come into compliance as expeditiously as practical, but not later than 3 years after the change in group status occurs. The source must obtain approval of their compliance schedule from the implementing agency. The rule was also revised to require that a Group 2 emission point that becomes a Group 1 emission point must report the group status change in the next Periodic Report

instead of in a separate report. This change will simplify reporting.

## 3.2 THE ROLE OF MONITORING IN DETERMINING COMPLIANCE

### 3.2.1 Compliance Certification

Comment: Two commenters (A-90-19: IV-D-72; IV-D-106) supported the provisions specifying the type of information necessary to certify compliance. One commenter (A-90-19: IV-D-85 and IV-K-1) contended that the provisions for compliance certification in the proposed rule are inadequate and that the rule should require operators to certify that emission points are achieving the reference control efficiencies, and should require adequate emission monitoring to determine compliance. The commenter (A-90-19: IV-D-85) said the allowance of excused excursions is inconsistent with the compliance certification provisions in sections 114(a)(3) and 504(b) of the Act.

Response: The EPA has considered how sources would demonstrate compliance in light of the requirements of section 114(a)(3) of the Act and §70.6(c) of the operating permit program rule, which require submission of "compliance certifications" from sources subject to the operating permits program rule. The continuous monitoring of control device operating parameters required by the HON is used to determine continuous compliance with the operating permit requirements for proper operation of control devices. The parameter monitoring results will satisfy the requirements of section 114(a)(3) to certify compliance status and whether compliance is continuous or intermittent. For the HON, compliance with permit conditions means operating with the excused number of parameter excursions or fewer. As explained in section 3.2.5, a limited number of daily excursions outside the established parameter range are excusable, to account for infrequent, unforeseen circumstances that may be beyond the operator's control and cause parameter fluctuations. Over three years, the number of excusable excursions phases down to one per semiannual reporting period.

Continuous emission monitoring was considered, but was found to be technically infeasible as described in section 3.2.4. Continuous parameter monitoring is a feasible alternative, and is consistent with section 504(b) of the Act which states that "continuous emission monitoring need not be required if alternative methods are available. . .for determining compliance."

3.2.2 Use of Operating Parameter Monitoring to Determine Compliance

Comment: A number of commenters (A-90-19: IV-D-32; IV-D-57; IV-D-62; IV-D-73; IV-D-77; IV-D-81; IV-D-112) supported the compliance approach in the rule that requires installation and proper operation of the RCT, and measurement of operating parameters.

One commenter (A-90-19: IV-D-74) supported monitoring of a surrogate operating parameter instead of emissions monitoring, and maintained that this approach appears consistent with the draft enhanced monitoring provisions.

Two commenters (A-90-19: IV-F-1.1 and IV-F-3; IV-D-77) favored basing compliance determinations on the installation and proper operation of the RCT or its equivalent, and not on whether a surrogate parameter has been exceeded.

Three commenters (A-90-19: IV-D-32; IV-D-81; IV-D-112) commended the EPA for developing compliance provisions which recognize that even the best-maintained control equipment cannot continuously operate within prescribed operating parameters and that measured operating parameters are merely surrogates for measuring actual control efficiency. The commenters (A-90-19: IV-D-32; IV-D-81; IV-D-112) further argued that operation outside parameter ranges does not prove a device is not achieving the desired operating conditions.

One commenter (A-90-19: IV-D-69) stated that a distinction should be made between a sampling failure and a control system failure.

Response: The EPA appreciates the commenters' support of the compliance approach in the HON. Under the NSPS and NESHAP programs, parameter monitoring has traditionally been used as

a tool in determining whether control devices are being maintained and operated properly. As at proposal, the HON rule requires monitoring of control device operating parameters and reporting of periods when parameter values are outside site-specific ranges. If the daily average value is outside the established range for more than the excused number of excursions, then it is a violation of the operating conditions. The response to the next comment more fully discusses the rationale for using operating parameters to determine compliance. Several commenters referred to monitoring of a "surrogate" parameter. The HON requires monitoring of the control device operating parameters instead of monitoring of the actual emissions.

The commenter (A-90-19: IV-D-69) is correct in pointing out that there is a difference between a monitoring failure and a control device failure. A monitoring failure could result in a disruption of continuous monitoring of a control device. If a control device monitor is out of operation for more than the amount of time allowed in §63.152(c) of subpart G, then it is considered an excursion. Generally, if measured data values are not available, due to a monitor malfunction or other reason, for at least 75 percent of the operating hours in a day, then this constitutes an excursion. Section 63.152(c) also provides additional details on monitoring data sufficiency and excursions for days when control devices operate for only short periods (i.e., less than 4 hours) and for data compressions systems. Excursions are discussed in section 3.2.5 of this chapter.

If a control system failure occurs, then it would either be classified as a malfunction or an excursion. If it is a malfunction that has been included in the source's start-up, shutdown, and malfunction plan, and the owner or operator followed the procedures outlined in their plan, which is required in §63.6(e)(3) of the General Provisions, then the event would not be counted as an excursion. Otherwise, if a control system problem causes the daily average value to be outside the established range for more than the excused number

of excursions, then it is a violation of the operating conditions.

Comment: Seven commenters (A-90-19: IV-D-32; IV-D-57; IV-D-77; IV-D-81; IV-D-97; IV-D-106; IV-D-112) maintained that monitored control device operating parameters will fluctuate for a variety of reasons, such as electronic noise, sensor problems, mechanical problems such as thermocouple or condenser failure, electrical problems, power surges, off-specification feedstocks or fuel, control device short malfunctions, process unit upsets, statistical variability, instrument problems, control valve problems, extreme environmental conditions, catalyst poisoning, coding water contamination, vendor error/miscalculation, sample transfer line plugging and excessive moisture, dirt, or meteorological conditions such as temperature fluctuations, icing, and thunderstorms, and that such fluctuations should not be considered excursions.

Numerous commenters (A-90-19: IV-D-32; IV-D-57; IV-D-69; IV-D-75; IV-D-77; IV-D-79; IV-D-81; IV-D-112) recommended removing the provisions in proposed §63.152(c)(2) stating that parameter range exceedances indicate that the owner or operator has failed to apply control in a manner that achieves the required permit conditions because of the unanticipated fluctuations described in the preceding paragraph, and because they do not believe a parameter excursion is proof that the MACT standard has been violated. Five of these commenters (A-90-19: IV-D-32; IV-D-75; IV-D-77; IV-D-81; IV-D-112) contended that variations and fluctuations occur, and that sources should be allowed to demonstrate through performance testing or other evidence that no violation of MACT has occurred. A number of commenters (A-90-19: IV-F-1.1 and IV-F-3; IV-D-77; IV-D-82; IV-D-83) stated that a direct correlation between the parameter values monitored and the efficiency of the control devices has not been established.

Response: It is reasonable to use monitored operating parameter excursions to determine compliance with the requirements for proper operation and maintenance, because the

selected monitoring parameters are the key parameters representing control device operation and performance. The EPA, however, appreciates the reasons commenters provided for why control device operating parameters may fluctuate and has allowed for excused excursions and malfunctions that are not considered violations.

Under the rule, monitoring of control device operating parameters and reporting of periods when parameter values are outside site-specific ranges is required. The source is provided the flexibility to establish appropriate site-specific ranges that represent proper operation with their permitting authority. These operating parameter ranges are then written into their operating permit and are enforceable. If the daily average value is outside the established range for more than the excused number of excursions, then it is a violation of the operating conditions. To demonstrate annual compliance, section 114(a)(3) of the Act and section 70.6(c) of the operating permit program rule require the submission of annual "compliance certifications" from sources subject to the operating permit program. In the case of the HON, a source can certify compliance if it operates within the excused number of excursions for each control device.

The rule includes provisions that would allow for some of the events cited by the commenters to be considered malfunctions instead of excursions. While it is not possible to foresee every possible event that could cause an exceedance of an operating parameter, a number of these would be considered malfunctions, and should be included in the source's start-up, shutdown, and malfunction plan, required in §63.6(e)(3) of the General Provisions. If a malfunction occurs and it is included in the start-up, shutdown, and malfunction plan, and the source follows their plan, then the occurrence is not counted as an excursion. If an occurrence that fits the characteristics of a malfunction occurs, but it is not described in the source's plan, and the daily average parameter value is outside the established range, then the event counts as an excursion. If the owner or operator

believes the same type of malfunction may occur in the future and cannot be prevented, then they are encouraged to revise their plan to include the malfunction.

As explained in section 3.2.5 of this chapter, a limited number of excursions per reporting period are "excused" and are not considered violations. This provision addresses the concern that some unavoidable parameter fluctuations may occur that are not included in a source's malfunction plan.

If a source operates outside the established parameter ranges for more than the excused number of excursions, this is a violation of the operating conditions, but not the emission limit. The EPA recognizes that for the emission points regulated by the HON, an operating parameter outside the established range does not conclusively mean that the emission limit has been violated. The emission points regulated by the HON are more diverse than most sources that will be regulated by other NESHAP. These emission points exhibit a wide range of characteristics; for example, a large number of different HAP's can be emitted, and there are wide ranges of flow rates and HAP concentrations. There are also a number of factors that influence the percent emission reduction achieved by some of the possible control devices. Because of this complexity, it would be difficult to determine, without extensive testing, whether operation slightly outside a parameter range means that the emission limit has been violated. The implementing agency may request testing to determine compliance with the emission limit if there is a concern.

Comment: One commenter (A-90-19: IV-D-74) supported the use of only one surrogate operating parameter for each type of control device as shown in table 3. One of the commenters (A-90-19: IV-D-69) requested that the number of monitored operating parameters be kept to a minimum to minimize the burden and expense of complying with the rule.

Response: While monitoring one parameter is sufficient for many control devices, some types of control devices will have multiple surrogate operating parameters. For example, if a scrubber is applied after a combustor to control a

halogenated stream, pH, liquid flow rate, and gas flow rate are monitored to determine proper operation. In this case, both pH and the liquid/gas ratio are important in determining whether the scrubber is operated properly. These parameters are shown on the table referred to by the commenter. The operating parameter(s) listed in the table were selected because they have a significant impact on control device performance and are technically feasible to monitor at a reasonable cost.

Owners or operators can apply to monitor site-specific parameter(s) as provided in §63.151(f) and §63.152(e) of subpart G. The request will need to justify why either one parameter or a combination of parameters are sufficient to indicate proper control device operation.

3.2.3 Site-Specific Ranges

Comment: Numerous commenters (A-90-19: IV-D-32; IV-D-33; IV-D-34; IV-D-57; IV-D-69; IV-D-74; IV-D-77; IV-D-81; IV-D-97) supported the provisions requiring sources to establish site-specific parameter ranges to indicate proper operating conditions. Several commenters (A-90-19: IV-D-32; IV-D-57; IV-D-69; IV-D-81) contended that the site-specific approach balances the need for control with the reality of operational variability. One commenter (A-90-19: IV-D-74) suggested that the EPA clarify that manufacturers' specifications could be appropriate for establishing the range.

One commenter (A-90-19: IV-D-34) strongly supported the provisions for each source to develop specific ranges for each emission point and include these in the operating permit or Notification of Compliance Status; and the same commenter also strongly supported the provisions to allow sources to request to monitor site-specific alternative parameters. The commenter (A-90-19: IV-D-34) provided the results of an evaluation they had performed on the example parameters and ranges provided in table 6A of the preamble. Based on this analysis, the commenter (A-90-19: IV-D-34) concluded that in some cases, the example ranges in the proposal preamble seemed

appropriate, but in other cases, a different parameter and/or a different range would be needed to accommodate site-specific conditions. Some of the examples cited by the commenter (A-90-19: IV-D-34) include:

- Silty water or high summertime temperatures in the south may make the 6 $^{o}C$ exit temperature range for condensers unachievable.
- Incinerator temperatures may vary by more than 50 $^{o}F$ depending on the BTU content of the feed and excess oxygen; however, excess oxygen, CO, and/or residence time may be more important than temperature, and some sites may wish to monitor these parameters.
- For scrubbers on halogenated streams, maintaining pH within a range of ±1 is feasible for scrubbers operating at low pH, but may be difficult for scrubbers with effluent pH in the range of 4 to 7 where a small change in $OH^-$ or $H^+$ concentrations result in a relatively larger fluctuation in pH value; furthermore, differential pressure or flow rate of the absorbent may be more easily monitored.

One commenter (A-90-19: IV-D-77) supported establishing site-specific ranges, but asserted that selecting an arbitrary minimum or maximum value or alternative range is inappropriate, and that it can be difficult to establish definite correlations by testing a source operating at maximum conditions. The commenter (A-90-19: IV-D-77) stated that extreme (e.g., maximum) conditions may show a different degree of control than that achieved on the average. The commenter (A-90-19: IV-D-77) suggested that corrective action should be taken if the value of a parameter is two or more standard deviations above or below the mean value of the parameter, and that this would be an appropriate way to establish a site-specific range.

<u>Response</u>: The promulgated HON retains the site-specific parameter range approach favored by the commenters. Allowing site-specific ranges accommodates site-specific variation in emission point characteristics and control device designs. As

stated in the proposal preamble, based on the information available, it appears to be difficult to establish ranges or maximum values that would be applicable in all cases. The promulgated methods for establishing operating parameter ranges balances the need for technical certainty and operational feasibility. The ranges may be established by performance testing supplemented by engineering assessments and manufacturer's recommendations. However, the performance test is not required to be conducted over the entire range of permitted parameter values, because such a requirement could impose significant technical difficulties and costs on the source. The EPA believes that a performance test conducted for a smaller, yet representative, range of operating conditions can still provide a range for the operating parameters that ensures proper operation of the control device. For emission points and control devices where a performance test is not required (for example, a transfer rack with a low throughput of HAP-containing liquids), the range may be established by engineering assessment. The rule has been clarified to better explain the EPA's intent regarding how ranges may be established and is now consistent with the proposal preamble and this response.

In response to commenter A-90-19: IV-D-77, a range of two standard deviations from the value measured during the performance test may not be appropriate in all cases. Instead, each source is required to develop a site-specific justification based on the available data and other information. Section 63.103(b)(3) of subpart F requires testing at "maximum representative operating conditions for the process," because this would generally be the condition with the greatest emission potential. The wording includes "representative" rather than just "maximum," to allow the source to operate under conditions representative of the range of normal operation, as opposed to, for example, a design maximum that is never reached in practice at a particular source. Section 63.103(b)(3) also specifies that the control or recovery device may be operated at "maximum or minimum

representative operating conditions for mon- -red control or recovery device parameters, whichever results in lower emission reduction." Again, the control device operating conditions should be those conditions that are within the normal operating range that would result in the greatest emissions potential. For example, a performance test for an emission point controlled by an incinerator should be conducted near the minimum temperature end of the normal operating temperature range, because lower temperatures would tend to result in lower efficiencies and greater residual emissions. If the required percent reduction is demonstrated at the minimum normal incinerator operating temperature, it can be assumed that the required reduction would also be achieved at a higher temperature (assuming the residence time and mixing are not significantly altered). Because of the diversity of emission points subject to HON and the need to accommodate site-specific considerations, the HON is written to allow sources and their implementing agencies to determine representative test conditions for a particular site and to establish site-specific parameter ranges.

The provisions allowing requests to monitor alternative parameters, supported by commenter A-90-19: IV-D-34, have been retained in the final rule, as explained in section 3.3.

3.2.4 Continuous Emission Monitoring

Comment: Many commenters (A-90-19: IV-D-96; IV-D-117; IV-F-7.3; IV-F-7.26; IV-F-7.34; IV-F-7.39 and IV-F-12 and IV-D-85 and IV-K-1; IV-F-7.44; IV-G-13; IV-G-18; IV-K-17; IV-K-67) requested that CEM's be included in the HON rule.

A number of these commenters (A-90-19: IV-D-96; IV-F-1.5; IV-F-7.6; IV-F-7.[illegible]; IV-F-7.39 and IV-F-12 and IV-D-85; IV-F-7.44) asserted that the HON monitoring requirements are inadequate because they indicate whether or not control equipment is operating properly instead of monitoring the actual emissions levels.

Another commenter (A-90-19: IV-D-120) maintained that the proposed monitoring and testing provisions are too lax and do not use state-of-the-art technology. The commenter

(A-90-19: IV-D-120) included vendor information about one type of continuous emission monitor manufactured by Fourier Transform Infrared Technology used to monitor ambient air. Another commenter (A-90-19: IV-G-13) provided a journal article supporting the use of continuous emission monitoring.

One commenter (A-90-19: IV-D-85) asserted that in order to adequately check compliance with percent reduction requirements, inlet and outlet concentrations of speciated HAP's must be monitored using CEM's whenever feasible. The commenter (A-90-19: IV-D-85) added that speciated data is needed to ensure that the percent reductions are achieved for all pollutants, to protect the public right to know, and to assess the seriousness of a violation. The commenter (A-90-19: IV-D-85) argued that, if monitoring does not generate actual emission data, some violations may not be detected; plants will be able to avoid enforcement and "drag out" cases in court by claiming that violations are trivial. The commenter concluded that these factors provide a disincentive to invest in proper application, operation, and maintenance of control devices and will lead to greater emissions.

One commenter (A-90-19: IV-F-7.42) requested that the final HON rule require monitoring of all toxic emissions with no exemptions allowed. Another commenter (A-90-19: IV-F-7.10 and IV-F-9) advocated requiring every emission point to be equipped with a monitoring device. Another commenter (A-90-19: IV-F-7.35) requested that a monitoring program be established to measure the amount of chemicals each industry releases into the atmosphere. Two commenters (A-90-19: IV-D-117; IV-F-7.34) recommended that ambient air monitors be used to record fugitive emissions. One commenter (A-90-19: IV-D-85) said that the EPA should require companies in communities with large numbers of plants to establish community ambient monitoring programs.

One commenter (A-90-19: IV-D-87) recommended that the HON rule require additional continuous monitoring of total organic carbon and/or periodic compliance monitoring in a

quality control program to make sure control devices are able to meet the requirements considering the various emission matrixes which may be present. One commenter (A-90-19: IV-D-96) stated that actual monitoring of emissions is essential in light of associated public health risks. Another commenter (A-90-19: IV-F-7.9) favored monitoring requirements strong enough to protect workers at the plant sites.

One commenter (A-90-19: IV-D-74) interpreted the Act as not requiring CEM's if alternative methods are available.

Response: The commenters raise three general points: (1) that they believe CEM's are necessary to determine compliance with the standards, (2) that they believe CEM's are available and could feasibly be used to measure HAP emissions, and (3) that they believe ambient air monitoring should be required.

In response to the first point, the use of CEM's is not necessary to demonstrate or assure compliance. The HON, as NSPS and NESHAP programs have traditionally done, requires a combination of performance testing and continuous monitoring of the control device operating parameters instead of monitoring the actual emission levels. Continuous parameter monitoring, as previously stated in section 3.2.2 of this volume, is consistent with section 504(b) of the Act, which states that "continuous emission monitoring need not be required if alternative methods are available. . .for determining compliance."

The EPA reviewed the CEM data submitted by commenters prior to promulgation. The EPA encourages HON sources to install CEM's where it is technically and economically feasible. However, CEM's are not required for the HON.

The HON requires that organic HAP emissions be limited to the level achievable by application of a reference control technology to each emission point requiring control. Each emission point is required to control to the specified percent reduction (i.e., 98-percent emission reduction of total organic HAP emissions for process vents), or to apply specific equipment and work practices (e.g., floating roofs with proper

seals and fittings for storage vessels). Therefore, the HON requires a compliance demonstration for each emission point through use of a control device that meets the equipment specifications or achieves the required percent total HAP control demonstrated by a performance test, or in some cases, a design evaluation. Because they are technology-based, the standards do not require demonstration of a specific percent reduction for each individual organic HAP. In addition, the parameter monitoring approach provides the information needed to know whether control systems are properly operated and maintained on a continuous basis. The EPA considers the parameter monitoring program contained in the HON as providing clear criteria for what is considered a violation. A violation of the operating conditions will have occurred if the daily average value of a monitored parameter is outside the site-specific ranges for more than the excused number of excursions. Sources will not be able to "drag out" cases as asserted by one commenter. These compliance determination approaches are consistent with statutory requirements as discussed above and in other responses in this chapter.

In response to the commenter's second point that CEM's are feasible for all emission points, the EPA asserts that use of CEM's is not technically feasible or reasonable for all emission points. There are a number of different types of CEM's available to sources. The CEM's capable of measuring emissions of a single compound (i.e., concentration monitors) have been available for a number of years. These CEM's cost roughly $20,000 to $40,000 each. The CEM's must be calibrated daily. However, these CEM's are not useful for many HON emission points because they measure individual compounds. Most process vent and wastewater emission points will contain multiple compounds, and it would be very costly to install, calibrate, and operate monitors to measure all the HAP's emitted. In addition, CEM's are not necessarily available for each of the HAP's in the stream.

The CEM's that use optical remote sensing have recently been developed, but are not widely available. They cost

$50,000 to $150,000 each to purchase. These CEM's are capable of analyzing multiple compounds and some companies are purchasing them to monitor for accidental releases.

As these examples illustrate, new technology is being developed daily. However, CEM's are currently not available for all 112 HAP's regulated by the HON. For instance, one type of optical remote sensing technology, FTIR, is capable of measuring for approximately 200 miscellaneous compounds; however, it is unable to detect a number of HAP's, because these compounds are not visible in the infrared spectrum.

Furthermore, concentration monitors alone would not measure emissions effectively because emissions are a function of both flow and concentration. Therefore, in order to continuously measure emissions, both continuous concentration monitors and continuous flow monitors would need to be installed at each and every control device. The HON specifies a percent reduction for most control devices. To measure percent reduction, concentration and flow, monitors would have to be installed at both the inlet and outlet of every control device. After installation, periodic calibration, maintenance, and QA/QC programs would be necessary to ensure accurate data. Even if it were technically feasible, such monitoring requirements would be extremely costly relative to the proposed parameter monitoring approach. The increased costs would result from the number of monitors (inlet and outlet) that would need to be installed and the fact that costs to purchase, calibrate, and maintain CEM's (for compounds that can be monitored with CEM's) are higher than costs for temperature monitors or most other operating parameter monitors. For very limited additional assurance that emission reductions are achieved, the cost would be very high. With the selected parameter monitoring approach, the national costs of monitoring, recordkeeping, and reporting are estimated to be $70 million per year (or 30 percent of the total annual costs of the rule). Requiring use of CEM's would significantly increase this cost and result in an unreasonable burden.

Another reason CEM's are not feasible for many emission points is that emissions are not emitted through stacks or ducts, so measurement of concentration, flow and mass emission rate is not feasible. An example of this is fugitive emissions from storage vessels.

The third point made by commenters was the suggestion that ambient air monitoring be required. The specific technology mentioned by the commenter (A-90-19: IV-D-120) monitors ambient air. The NESHAP program is technology-based and requires control of specific emission points; it is not designed to achieve a specific pre-established ambient air concentration. The purpose of the HON's monitoring requirements is to verify that the source is in compliance with the rule. Ambient air monitoring is not useful for determining compliance because the HON does not establish an ambient air target concentration. The EPA must comply with the PRA in developing monitoring, recordkeeping, and reporting requirements for the HON and other NESHAP. The objectives of the PRA are to improve the quality of data that are collected and minimize the burden on the public. The requirements of the HON are consistent with the PRA. The collection of additional information that is not necessary to determine compliance cannot be justified.

In conclusion, the HON is not requiring the use of CEM's.

3.2.5 Excused Excursions

Comment: Two commenters (A-90-19: IV-D-29; IV-D-97) requested clarification of the definition for "excursions" because §63.7(e)(1) of the draft General Provisions and §63.152(c)(2)(ii)(B) of the proposed HON each contain different definitions.

Response: The HON has overridden the definition for excursion contained in the General Provisions. For the HON, an excursion has occurred when the source's daily average falls outside the established ranges or if insufficient monitoring data are available [as defined in §63.152(c) of subpart G]. If the occurrence is a malfunction covered in the source's start-up, shutdown, or malfunction plan and the plan

has been followed, then it is not an excursion. If the malfunction is not covered in the plan or the plan is not followed, then an excursion has occurred. The source is allowed a few excused excursions. See the next comment and response for a discussion of the number of allowed excused excursions.

Comment: One commenter (A-90-19: IV-D-21) concurred with the proposed provisions in §63.152(c)(2)(ii)(A) that allow three to six excused excursions per semiannual reporting period for each control device. Several commenters (A-90-19: IV-D-32; IV-D-73; IV-D-81) supported the requirements allowing a number of excused periods before a source is considered to be in violation. Several commenters (A-90-19: IV-D-33; IV-D-56; IV-D-73; IV-D-74) supported the requirement allowing six excused excursions each semi-annual compliance/reporting period, as long as: the type of excursions are defined in the rule (A-90-19: IV-D-56); the number of excursions may be adjusted after 5 years (A-90-19: IV-D-73) based on experience at each source; or the number may be adjusted after the life of the first operating permit (A-90-19: IV-D-33) based on experience at each source. One of the commenters (A-90-19: IV-D-33) stated that their incinerator experiences outages on several days per year, but since they correct each outage within a few hours, the total on-line time and overall efficiency is high. Using the assumption that each day there was an outage would be an excursion, the commenter (A-90-19: IV-D-33) believed six excursions per reporting period to be appropriate. Two commenters (A-90-19: IV-D-73; IV-D-74) supported three days of excused excursions for sources submitting quarterly reports. One of the commenters (A-90-19: IV-D-74) said this is necessary because a single excursion may take more than a day to correct.

Several commenters (A-90-19: IV-D-32; IV-D-57; IV-D-62; IV-D-69; IV-D-77; IV-D-81; IV-D-112) recommended that sources be allowed at least 3 percent excused excursions per reporting period to account for inevitable and/or unanticipated fluctuations in operating parameters (see the comment in

section 3.2.2 of this chapter on parameter fluctuations). One of the commenters (A-90-19: IV-D-77) added that the monitoring systems that are required are complex and of unknown reliability, so excused excursions are important.

Two commenters (A-90-19: IV-D-32; IV-D-81) suggested that, because: (1) the controls required by the rule are complex; (2) the technology does not exist to directly measure their operation in a manner that is both cost-effective and totally reliable; and (3) unanticipated events can cause parameter fluctuations, 3 percent excused excursions per reporting period should be allowed for at least the first 5 years after the compliance date. Two commenters (A-90-19: IV-D-32; IV-D-81) recommended that the EPA promulgate a new standard in the future if data from sources' periodic reports show that excursions are occurring more or less frequently.

Another commenter (A-90-19: IV-F-7.39 and IV-F-12 and IV-D-85) stated that six to twelve excursions per year were too many. The commenter (A-90-19: IV-D-85) stated that any time parameter ranges are exceeded, a violation of the standard may have occurred, and therefore, no excursions should be excused. The commenter (A-90-19: IV-D-85) argued that allowing excused excursions will encourage poor maintenance of control devices.

Response: The EPA agrees that some excused excursions are necessary for those unforeseen circumstance that cause parameter fluctuations. The EPA requested comment in the proposal preamble on the number of days or percent of operating time that should be allowed as excused excursions (a range of 3 to 6 days was proposed), and whether the number of excused days should decrease over time, after an initial break-in period. Based on information provided by the commenters and discussions within the EPA, the provisions were revised for the final rule. The final provisions allow a maximum of 6 excused excursions for the first semiannual reporting period, decreasing by 1 excursion each semiannual reporting period, down to 1 excused excursion within 3 years. Thereafter, sources are allowed one excused excursion per

semiannual reporting period. This system is based on the fact that, as sources become more familiar with control device operation and possible causes of fluctuations, they will learn to prevent or quickly correct these occurrences.

Many of the causes of parameter excursions mentioned by the commenters could be considered malfunctions. As explained in §63.6(e)(3) of the General Provisions, if a malfunction is in a source's malfunction plan and the source follows that malfunction plan, this does not count as an excursion. If a source encounters a malfunction that is not included in their malfunction plan, the malfunction counts as an excursion; however, the source may amend their malfunction plan so that similar problems in the future will be considered malfunctions if they appropriately satisfy the definition of a malfunction that is contained in the General Provisions in §63.6(e)(3). Therefore, it is important for the source to include all known malfunctions in the malfunction plan, and amend these plans based on their experiences to reduce the chance that a malfunction is counted as an excursion. This "phasing down" from 6 excused excursions to 1 excused excursion after 3 years will allow for a limited number of circumstances causing parameter excursions that are not in a source's malfunction plan.

In response to the commenter (A-90-19: IV-D-85), it is necessary to allow for a few excused excursions to account for the unforeseen circumstances that can cause parameter fluctuations. However, because only a few excursions may be excused, the sources will have to maintain their control and monitoring devices to be in compliance with the rule.

Comment: Three commenters (A-90-19: IV-D-21; IV-D-57; IV-D-72) noted that there will be situations when long delays are necessary. The commenter cited examples of delays including difficulty in obtaining parts or scheduling maintenance, and time-consuming repairs such as replacement of boiler refractory. For such situations, two commenters (A-90-19: IV-D-21; IV-D-106) encouraged the EPA to take into consideration that operational difficulties will occur and

that the length of time for correction and the number of excused excursions should depend on the type of operation.

One commenter (A-90-19: IV-D-21) requested that the EPA specify procedures, such as Agency notification or estimation of uncontrolled emissions, to be followed in the event a delay longer than 6 days is necessary, and consider these periods excusable.

Two commenters (A-90-19: IV-D-72; IV-D-106) supported a combination of the second and third options discussed in the proposal preamble for defining what constitutes a violation. Under the commenters' (A-90-19: IV-D-72; IV-D-106) suggested approach, an excursion would not be a violation if it is corrected within a reasonable period of time; and a certain number of short-term excursions that were not corrected would be excused.

Response: The EPA has decided not to allow extra days of excused excursions for periods of long delay caused by difficulty in obtaining parts, scheduling problems, or lengthy repairs. During periods when a source knows that the repair or maintenance may take longer than the number of excused excursion days, the source should shut down the affected unit, rather than continue to operate in violation. When the source is unaware how long the delay would take and exceeds the allowed number of excused excursions, these will still be considered violations; but the implementing agency may choose to exercise its enforcement discretion and resolve these violations without seeking a penalty. The reason that the EPA chose not to allow additional excused excursions is that it would cause enforcement difficulties to decide when a delay is caused in spite of best efforts and when the delay is caused by less than best efforts. Therefore, all excursions other than excused ones will be considered violations. As noted in previous responses, if the delay is caused by a malfunction and the source follows their malfunction plan, it is not considered an excursion or a violation.

Comment: Two commenters (A-90-19: IV-D-56; IV-D-74) requested clarification of the provisions stating that when a

source is subject to multiple monitoring requirements or limitations under the HON, multiple NSPS or NESHAP, or under State or Federal construction or the operating permit program rule, that the source is subject to only one potential violation for an excursion during any single averaging period or required monitoring period and would be subject to only one penalty and one enforcement action.

Two commenters (A-90-19: IV-D-74; IV-D-92) requested that a single operational occurrence which leads to simultaneous violations of one or more parameters be treated only as a single violation, consistent with the Clean Water Act Enforcement Policy.

Response: For purposes of enforcing the HON, each emission point can only have one HON-related excursion per day. An excursion occurs when: (1) the daily average value of one or more monitored parameters is outside the permitted range; (2) the period of control device operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours; or (3) the period of control device operation is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data. If one problem causes multiple parameters to be out of range on the same day for a single emission point, this is considered to be only one excursion. Furthermore, one control device can have only one HON-related excursion per day. If multiple emission points are ducted to one common control device, and the operating parameters for the control device are outside the established range, this is considered to be only one excursion. If the excursion is not an excused excursion, it would be considered one violation.

When a source violates the section 112 regulatory requirements and that violation is simultaneously a violation of another provision (e.g., a violation of the HON and the title I VOC requirements), then that will be considered by the EPA as two violations for each day that the violation

continues. This has been the traditional EPA interpretation of the statutory language authorizing the implementing agency to seek penalties "per day for each violation." The reason for this is that if, for some reason, the proof of one violation fails, the evidence for the other violation may stand the test of trial and the EPA will be able to collect penalties for the violations. Thus, the EPA seeks penalties for both violations if there are multiple violations.

Comment: One commenter (A-90-19: IV-D-34) requested that an excursion that is the result of start-up, shutdown, or malfunction not count toward the excusable excursions, regardless of whether or not the source is operated consistent with the start-up, shutdown, malfunction plan. One commenter (A-90-19: IV-D-74) suggested that provisions be made to allow for longer periods of excused excursions when a malfunction occurs that is no fault of the owner.

Response: The HON specifies in §63.152(c)(2)(ii)(C) that if a monitoring parameter excursion occurs during start-up, shutdown or malfunction, and the source follows their start-up, shutdown, and malfunction plan, as required in §63.6(e)(3) of the General Provisions, then it is not counted as an excursion. As long as the malfunction plan is followed, the event will not be considered an excursion, even if it takes more than 1 day to repair or correct. If an excursion occurs during start-up, shutdown, or malfunction, and the plan is not followed, the excursion would count as a violation. If the start-up, shutdown, and malfunction plan fails to address an event that meets the characteristics of a malfunction, the event will be counted as an excursion; however, the source can revise the plan to include procedures for addressing similar future events so that future events will not be excursions.

Comment: One commenter (A-90-19: IV-D-33) argued that, on their system, if the thermocouple verifying that the flare pilot flame is lit fails, this should not be viewed as an excursion. The commenter (A-90-19: IV-D-33) argued that there are three pilot lights at the flare, so even if one were to go out, the flare would still operate. The commenter

(A-90-19: IV-D-33) said they usually wait until the next shutdown, which may be as much as one to two years later, to fix a failed thermocouple.

Response: The provisions in the process vents, transfer, and wastewater sections of subpart G have been revised to require reporting only if all pilot flames to a flare are out. Records must be kept of periods when each individual monitoring device or pilot light is not working, but if the flare has multiple pilot lights, reporting is not required unless all pilot flames are out.

Comment: One commenter (A-90-19: IV-D-85) stated that use of a daily averaging period for parameter monitoring is inappropriate and commented that hourly or continuous compliance should be required. The commenter (A-90-19: IV-D-85) was concerned that sources could release peak emissions at night. Other commenters (A-90-19: IV-F-7.35; IV-K-1) requested that all peak and accidental releases of chemicals be required to be reported.

Response: The HON provisions are designed to require installation and proper operation of controls that will meet the standard. Operating parameters are monitored continuously. However, daily averages are used for compliance determination. Parameter values fluctuate over the short term for many reasons, such as those cited previously by other commenters. If hourly or shorter periods were used to determine compliance, either the acceptable ranges would need to be set wider or a large number of "violations" would occur as a result of very temporary fluctuations. The daily average balances process variability with the need to determine continuous compliance.

In regard to commenters' concerns about peak releases, the EPA considers the current monitoring requirements adequate to protect against peak releases of emissions for several reasons. Peak releases are not routine in the chemical industry. The chemical industry has continuous processes, and it is unlikely that a source could collect emissions and release them during the night or at one time. For example,

during periods of operation, process vents and process wastewater streams have relatively steady emissions that are unlikely to peak at night or otherwise. Storage vessels and transfer operation emissions occur during loading and unloading of trucks and railcars. These activities are more likely to occur during the day. As a safeguard, the HON provisions contain adequate requirements for reporting operating problems. Monitoring parameter excursions and problems detected during inspections must be reported in the periodic reports. The General Provisions also require reporting of malfunctions. Additionally, in the event that an accidental release occurs, the source will be subject to the proposed accidental release prevention rule.

3.2.6 Emissions Averaging Monitoring Requirements

Comments on monitoring requirements for sources that use emissions averaging may be found in section 2.8.2 of BID volume 2C, Monitoring, Recordkeeping, and Reporting.

3.2.7 Other

Comment: One commenter (A-90-19: IV-D-46) favored more flexible monitoring provisions. Two commenters (A-90-19: IV-D-72; IV-D-106) suggested a system of monitoring "typical" emission points instead of every emission point, coupled with a periodic roving monitoring program similar to that in subpart H of the HON. One commenter (A-90-19: IV-D-97) stated that the EPA has excessively specified continuous monitoring and that section 504 of the Act, "Permit Requirements and Conditions," is very specific in not requiring the level of continuous monitoring specified in the proposed HON.

Response: The HON rule requires monitoring of all Group 1 and some Group 2 emission points to ensure proper operation and maintenance of the control device. Because operating problems will be specific to each control device, a system of monitoring "typical" emission points instead of every emission point would not be effective in controlling emissions.

By the "roving monitoring program" used in subpart H, the EPA assumes the commenter means periodic leak detection measurements using Method 21. Under this method, an inspector periodically walks around the plant using a portable analyzer to detect leaks by measuring whether organic concentration is significantly above background levels. This method is not technically applicable for measuring emissions from most of the control devices used to control process vent, transfer, storage, and wastewater emissions, because many of the emissions regulated under subpart G are emitted from tall stacks at high temperatures (e.g., from an incinerator or flare).

The HON requires continuous monitoring of some control devices. For other emission points and controls, periodic (e.g., monthly, quarterly, or annual) inspections or measurements are required. With regards to the comment comparing the HON to section 504, that section of the Act states that continuous emission monitoring need not be required if alternative methods are available. The HON requires continuous parameter monitoring, <u>not</u> continuous emission monitoring.

<u>Comment</u>: One commenter (A-90-19: IV-D-77) recommended that the HON rule allow a procedural demonstration of attainment and maintenance of control rather than a point-by-point demonstration.

<u>Response</u>: The commenter did not provide details of what they meant by a "procedural demonstration." Even if a source has written standard operating procedures or computer programs for monitoring and recording, point-by-point data and reports would still be necessary to determine compliance.

<u>Comment</u>: One commenter (A-90-19: IV-D-64) stated that the requirement for keeping records of daily averages of each monitored parameter in proposed §63.130(a)(2) should instead be an option in place of keeping detailed monitoring records. The commenter (A-90-19: IV-D-64) stated that for some facilities, it may be less burdensome to keep continuous records than to calculate daily averages.

Response: Daily averages are required to determine if an excursion has occurred. However, if the continuous records for a day show that none of the recorded values are outside the established range, this can be noted in the records instead of calculating and recording a daily average. This reduces the burden of calculation. If some values are outside the range, then the daily average must be calculated in order to determine if the data from the entire day results in a daily excursion. Detailed records must be maintained to assure that daily averages are calculated correctly.

3.3 ALTERNATIVE APPROACHES TO MONITORING

Comment: One commenter (A-90-19: IV-D-110) requested provisions that allow for alternative approaches to monitoring operating parameters, particularly where continuous monitoring is required. The commenter (A-90-19: IV-D-110) stated that the use of alternative approaches would better take into account technological differences among facilities, and provide more flexibility among the monitoring requirements.

Several commenters (A-90-19: IV-D-32; IV-D-74; IV-D-81; IV-D-86; IV-D-98; IV-D-112) commended the EPA for allowing sources to request approval to monitor alternative operating parameters. Two of the commenters (A-90-19: IV-D-32; IV-D-81) recommended that the provisions for monitoring alternative operating parameters be streamlined in the final rule to ensure that it encourages innovation and opportunity for cost-effective approaches. In contrast, one commenter (A-90-19: IV-D-85) urged the EPA to specify parameters to be monitored and their ranges, and to require any plant that seeks to deviate from the specified monitoring parameters to demonstrate by performance testing that the variation will produce more, not less, accurate detection of emission increases and poor equipment function. The commenter (A-90-19: IV-D-85) was concerned that industry would select operating parameters that would be met with the least investment rather than parameters designed to detect malfunctions in control equipment or indicate control efficiency.

Response: As requested by some of the commenters, the provisions allowing sources to apply to monitor alternative operating parameters on a site-specific basis have been retained in the final rule. In order to monitor a site-specific parameter, the source must submit a justification containing the information specified in §63.151(f) with the Implementation Plan or operating permit application. This justification includes a demonstration that the parameter indicates proper operation. Performance test data could be included as part of the justification, but is not required because performance testing would not be feasible or necessary for all potential control devices and parameters. All alternatives are subject to approval by the implementing agency. This will ensure that monitored parameters adequately reflect proper control operation.

The EPA is also retaining the provisions that require a source to establish site-specific ranges for monitored parameters. The reasons for this approach are explained in the proposal preamble and in responses in section 3.2.3 of this chapter.

In response to commenter IV-D-110, provisions allowing site-specific requests to use alternative monitoring systems have been added to the final rule. The rationale and details are contained in the responses in section 3.3 of this chapter.

Comment: Several commenters (A-90-19: IV-D-32; IV-D-54; IV-D-77) discussed allowing process safety interlock devices as an alternative to continuous monitoring of control device operating parameters. Two of the commenters (A-90-19: IV-D-32; IV-D-81) explained that, for example, a scrubber controlling transfer operation emissions could be equipped with a flow meter to monitor the scrubber's operation. An interlock device can be set to automatically shut down the transfer loading pump if the minimum acceptable flow is not maintained. Several commenters (A-90-19: IV-D-32; IV-D-54; IV-D-77) requested that interlock devices be allowed in the rule, and that monitoring, recordkeeping, and reporting requirements not be imposed because the operation will

automatically shut down when the monitoring parameter limit is reached. One of these commenters (A-90-19: IV-D-77) stated that alarms can be installed on the interlock devices to alert operators before an excursion occurs so that control can be regained; and if control is not regained, shut down automatically occurs.

Response: While the EPA wishes to encourage innovative technologies such as interlock systems, the EPA has insufficient information on the variety of designs and applications of interlock systems to specify alternative recordkeeping procedures that would be appropriate for all such systems. Sources wishing to use alternative monitoring methods, including interlock devices, may apply to do so as described in the General Provisions §63.8(f).

3.4 PERFORMANCE TESTING

Comment: Two commenters (A-90-19: IV-D-87; IV-D-115) requested that the HON require annual performance tests to ensure continued compliance. One of the commenters (A-90-19: IV-D-115) stated that there are many cases where monitoring of process parameters does not accurately indicate control efficiency.

Response: Sources are required to achieve the specified emissions reduction, and most equipment must be tested initially. The continuous monitoring of control device operating parameters is used to determine continued compliance with the source's operating requirements, and ensures that controls continue to be properly operated and maintained. Performance tests, as well as engineering assessments and manufacturers' recommendations, are used to establish the site-specific acceptable ranges for the monitored parameters. Annual tests would be burdensome and would only provide a "snapshot" of how the equipment is operating at that point in time. Ongoing parameter monitoring is preferred in determining continued compliance. For these reasons, annual performance tests will not be required in the HON rule.

Comment: One commenter (A-90-19: IV-D-36) requested that provisions be added to the HON rule, perhaps in a new

§63.103(b)(5), stating that any provisions of subparts F, G, or H in the proposed rule which require a performance test should also allow engineering calculations, manufacturers' specification, or other reasonable and appropriate methods. The commenter (A-90-19: IV-D-36) considered these alternatives to be less expensive ways to both demonstrate compliance with the percent emission reduction requirements and establish operating parameter ranges. The commenter (A-90-19: IV-D-36) also suggested that performance be considered to have been demonstrated only within those conditions or parameter ranges that are reliably supported by the method used, and the operating permit incorporate those conditions or parameters as requirements.

Response: The standard requires performance testing to determine compliance with emission limits where the EPA has determined testing to be feasible, and allows process knowledge or calculations only for specific emission points and control techniques where testing is not feasible. This approach will provide the best assurance that the emission limits are met. However, the rule allows use of either a performance test or analyses to establish the site-specific parameter ranges for parameters that must be continuously monitored. The procedures for establishing parameter ranges are addressed in §§63.114, 63.120(d), 63.127, and 63.143(f).

Comment: One commenter (A-90-19: IV-D-29) stated that the provisions for conducting performance testing in §63.7(e) of the draft General Provisions and §63.103 (b)(3) of the proposed HON are different, and that the HON should be revised to include only one set of performance test requirements. The commenter (A-90-19: IV-D-29) also claimed that §63.7(e) implies that the Administrator will specify the test conditions, while §63.114(e) of the proposed rule states that the owner or operator will specify the monitoring conditions that will be used during testing. Two commenters (A-90-19: IV-D-70; IV-D-99) contended that it is necessary for performance testing provisions in the General Provisions to be written such that the clearest and highest level of proof

possible is obtained during initial performance testing of each control technology considered by the HON. The commenters (A-90-19: IV-D-70; IV-D-99) also contended that Method 301, which was mentioned as an alternative means to demonstrate compliance, must also guarantee this level of proof.

Response: The EPA assumes that the commenter (A-90-19: IV-D-29) is referring to the General Provisions requiring performance tests under representative conditions and the HON requiring performance tests under maximum capacity conditions. The requirements of the General Provisions are only meant to provide general directions for all NESHAP. Specific requirements in each NESHAP may override directions in the General Provisions. Therefore, the HON performance test requirements override the General Provisions performance test requirements. This has been clarified in the final HON provisions. The reader is also referred to the discussion of overlapping regulations in section 6.6 of this chapter.

The EPA also believes that the commenter may have misinterpreted the HON regulation. Section 63.114 in the proposed rule does not address performance test conditions, but requires a source to establish operating parameter ranges for monitoring of the control or recovery device. The EPA believes that it has written the HON to ensure that an accurate representation of the operating parameters is obtained during initial tests.

The EPA would also like to explain that Method 301 is a quality control/quality assurance procedure used to demonstrate that an alternative test method gives comparable results to the specified EPA method. Method 301 does not address demonstration of compliance.

3.5 ENFORCEMENT

Comment: Several commenters (A-90-19: IV-F-1.5; IV-F-7.1; IV-F-7.10 and IV-F-9; IV-F-7.22; IV-F-7.33; IV-F-7.34; IV-F-7.35; IV-G-15) contended that industry does not comply with existing regulations. One commenter (A-90-19: IV-F-7.45) maintained that chemical plants use a number of strategies to escape liability, including changing corporate

names every two years; declaring that long-term diseases are not work-related; and sounding horns at multiple plants when an accidental chemical release occurs.

Five commenters (A-90-19: IV-D-43; IV-F-7.5; IV-F-7.14; IV-F-7.15; IV-F-7.26) expressed concern that regulations are not being enforced by either State or Federal governments. One commenter (A-90-19: IV-F-7.4) expressed concern that States are too lenient in administering, monitoring, and enforcing Federal regulations, citing examples such as allowing temporary exemptions for a plant due to its use of an innovative technology. One commenter (A-90-19: IV-F-7.3) elaborated that in one State, new industries are being granted variances for air emissions, and existing industries are being granted variances for emissions associated with expansions. Several commenters (A-90-19: IV-F-7.2; IV-F-7.3; IV-F-7.4; IV-F-7.7; IV-F-7.8; IV-F-7.26; IV-F-7.34; IV-F-7.38) expressed concern that Federal, State, or local governments are allowing increases in emissions.

One commenter (A-90-19: IV-F-7.15) concluded that a particular State is not enforcing its own, new air toxics law, because the penalty amounts assessed by the State declined by 92 percent from 1991 to 1992. Two commenters (A-90-19: IV-F-7.7; IV-F-7.8) expressed concern about a particular situation where their State does not intervene when the air quality of one industrial plant site is negatively impacted by another nearby chemical plant, even though the State would intervene if the surrounding community were impacted. One commenter (A-90-19: IV-F-7.7) contended that the aforementioned State's decision is a misinterpretation of the Act and that the EPA should not give delegated authority to the State for the HON rule until the State's program is remedied.

Several commenters (A-90-19: IV-F-7.1; IV-F-7.10 and IV-F-9; IV-F-7.22; IV-F-7.26; IV-F-7.27 and IV-F-10; IV-F-7.35; IV-F-7.39 and IV-F-12; IV-F-7.42; IV-G-15) favored a HON rule that includes strong, effective enforcement mechanisms. The commenter (A-90-19: IV-F-7.28) suggested a

more thorough look at technology options as part of the implementation, elimination of the loopholes, and enforceable aspects of the rule. One commenter (A-90-19: IV-D-43) contended that the HON will be unenforceable, and will not be able to achieve the emissions reductions. Two commenters (A-90-19: IV-F-7.42) asserted that the HON will only be effective if it is properly enforced. One commenter (A-90-19: IV-F-7.15) supported the EPA's establishing a strong regulation and assuming a role as enforcer for States that are reluctant to offend powerful special interests. One commenter (A-90-19: IV-F-7.42) favored prison sentences for plant managers who break the law.

Response. The EPA agrees that proper enforcement of NESHAP is essential to ensure that the required emission reduction is achieved. Every effort has been made to structure the HON in a way that provides a clear means of determining whether the standard has been achieved. These provisions include performance testing, continuous parameter monitoring, recordkeeping, and reporting requirements.

The EPA and the States must work together to ensure effective enforcement. Under the Act, a State may develop a program and be delegated authority to enforce NESHAP (including the HON) under section 112(l). States are also required to develop operating permit programs. State programs developed under section 112(l) as well as operating permit programs must be approved by the EPA before they can go into effect. If State 112(l) programs are not submitted or are not approved, the EPA will be responsible for enforcement of NESHAP. The EPA will also administer operating permits if a State does not have an approved operating permit program. Public comments will be considered during development and EPA review of State programs, as described below.

Under section 112(l) of the Act, States may develop and submit to the Administrator for approval a program for the implementation and enforcement of section 112 standards, including the HON and other NESHAP. The EPA published draft guidance for these State programs on November 26, 1993

(58 FR 62262). When States submit their programs to EPA under Section 112(l), there must be notice and an opportunity for public comment. Public comments on the adequacy of specific State enforcement plans will be welcomed at that time. The Administrator will review each State program to determine if it is adequate to enforce the NESHAP program. Under the Act, the Administrator will disapprove any State program that: does not contain adequate authorities to ensure compliance by all source in the State with each applicable standard; does not have adequate resources to implement the program; has a schedule that is not sufficiently expeditious; or is not in compliance with the EPA's guidance.

Under section 502 of the Act, States are required to develop operating permit programs. The operating permits will consolidate all air pollution control requirements that apply to a source into one comprehensive permit, which will simplify enforcement. States are required to submit operating permit programs to the Administrator for review. Notice and opportunity for public comment must be provided when the plan is submitted, and specific comments on each State's plan will be welcomed at that time. The EPA may approve or disapprove and request revisions to a State program. There are also provisions allowing EPA to review program enforcement and administration and apply sanctions, if warranted.

To address the commenter's concerns regarding accidental releases, in the event that an accidental release occurs, the source will be subject to the proposed accidental release prevention rule which identifies those substances which are most likely to cause serious adverse effects that could harm the public and the environment.

Comment: One commenter (A-90-19: IV-D-92) suggested that the EPA send a notice of deficiency for perceived recordkeeping violations before taking any enforcement action.

Response: The EPA has a broad range of enforcement options available, and the discretion to use whichever type of enforcement action it determines to be most appropriate in pursuing a particular violation. Recordkeeping violations may

be deemed major, minor, or even criminal, depending on the circumstances. Such circumstances will therefore dictate whether the EPA issues an Administrative Penalty Order, a Notice of Violation/Notice of Deficiency, or a Criminal Notice. All of these are considered enforcement actions, whether or not a penalty is assessed.

Comment: Two commenters (A-90-19: IV-D-90; IV-D-100) asserted that the monitoring, recordkeeping, and reporting requirements in the proposed HON rule do not provide a basis for determining verifiable emission limitations for compliance, and if necessary, appropriate enforcement of permit conditions. The commenters (A-90-19: IV-D-90; IV-D-100) stated that there can be difficulty in determining compliance with emission standards based on parameter monitoring because excursions are initially violations of a permit condition and not a violation of an emission standard. Furthermore, the commenters (A-90-19: IV-D-90; IV-D-100) stated that it is more difficult to enforce emission standard violations based on parameter monitoring. The commenters (A-90-19: IV-D-90; IV-D-100) stated that it is imperative that the EPA specify compliance options that are enforceable. The commenters (A-90-19: IV-D-90; IV-D-100) maintained that in title VII, Congress clearly intended for enforcement of non-compliance with any provision or requirement of the Act by significantly strengthening enforcement authority to the EPA and the States, including criminal sanctions and substantive penalties.

Response: The commenter is correct that it may be difficult to determine whether an emission limit has been exceeded based on whether a parameter range is exceeded. It is also true that if a source operates outside the established parameter ranges for more than the excused number of excursions, this is a direct violation of the operating conditions, but not the emission limit. However, the implementing agency can take enforcement action against the source for a violation of the operating conditions.

Because of the diversity of HAP emission points, the wide range of flow rates and HAP concentrations, and the general complexity of HON emission points, it would be difficult to determine, without testing, whether operating slightly outside a parameter range indicates that an emission limit has been violated. The implementing agency may request a performance test to determine compliance with the emission limit at any time, including when a source has operated with parameters outside the established range. If the performance test reveals that the required emission limit (i.e. process vents must achieve 98 percent emissions reductions) was exceeded, then the source has violated the emission limit and is subject to enforcement actions. The EPA has designed the HON to be an enforceable standard and will enforce all non-compliance situations that arise.

The rationale for using parameter monitoring in the HON is discussed under section 3.2.2 of this chapter.

## 3.6 START-UP, SHUTDOWN, AND MALFUNCTION PLAN

Comment: Three commenters (A-90-19: IV-D-70; IV-D-99; IV-D-113) noted that for control of start-up, shutdown, maintenance emissions, and upsets, the proposed HON refers to the draft General Provisions which had not yet been proposed.

One commenter (A-90-19: IV-D-92) suggested that an upset provision, consistent with the Clean Air Act and Clean Water Act enforcement provisions, be devised to offer protection from enforcement for circumstances beyond the control of the owner or operator.

Three commenters (A-90-19: IV-D-70; IV-D-79; IV-D-99) requested that the General Provisions provide for effective control of these types of emissions and suggested routing upset, start-up, shutdown, and maintenance emissions to an incinerator, scrubber, or flare meeting 40 CFR 60.18.

One commenter (A-90-19: IV-D-113) supported the site-specific start-up, shutdown, malfunction plan and encouraged the EPA to allow changes and modifications to the plan in order to improve plant performance.

Two commenter (A-90-19: IV-D-73; IV-D-75) requested that a start-up, shutdown, or malfunction plan be included in the HON if provisions are not included in the General Provisions. Another commenter (A-90-19: IV-D-48) recommended that the HON override the General Provisions requirement to report <u>any deviation</u> from the start-up, shutdown, and malfunction plan and that only those deviations resulting in 10 percent more emissions be reported.

Another commenter (A-90-19: IV-K-73) contended that it would be impossible to foresee and plan for all possible malfunctions ahead of time in the start-up, shutdown, and malfunction plan. The commenter (A-90-19: IV-K-73) requested that compliance be judged relative to good air pollution control practices, and not relative to adherence to a plan that cannot reasonably be articulated in advance.

One commenter (A-90-19: IV-D-69) suggested that at least 10 days of control device downtime specifically for combustion devices, be allowed annually for start-ups, shutdowns, and malfunctions.

<u>Response</u>: The General Provisions require a start-up, shutdown, and malfunction plan in §63.6(e)(3). The written plan should be developed by the source, and should describe procedures for operating and maintaining the source during periods of start-up, shutdown, and malfunction, and a program of corrective action for malfunctioning process and air pollution control equipment. If a malfunction occurs and it is covered by the source's start-up, shutdown, and malfunction plan, and the procedures in the plan are followed, the occurrence is not counted as an excursion. If the malfunction is not included in the source's plan, the plan can be revised to include the event as a malfunction, so that it would not count as an excursion if it were to happen again.

Start-up, shutdown, and malfunction plans are described in the General Provisions. Therefore, they are not described in the HON. However, §63.100 of subpart F contains a definition of shutdown that is appropriate for HON, and this

definition should be considered in determining activities that should be included in the plan.

Comments on the start-up, shutdown, and malfunction plan contained in the General Provisions were addressed in the BID for the General Provisions.

3.7 MISCELLANEOUS COMPLIANCE

Comment: One commenter (A-90-19: IV-D-74) maintained that there are situations where continuous monitoring, as defined by the HON, is not appropriate, specifically in batch process operations which have long periods when no emissions occur.

Response: Monitoring of controls on batch processes must occur continuously (every 15 minutes) during all periods of emissions. During periods when the process and its associated control device are not in operation, monitoring would not be necessary. The regulation states that the daily average parameter values are calculated for the period of operation during the day. If emissions from a batch process are routed with other processes to a control device that operates continuously (i.e., 24 hours a day), then continuous monitoring of the control device is required for the entire 24-hour period.

Comment: Two commenters (A-90-19: IV-D-32; IV-D-81) requested that facilities using alternative means of emission limitation not be required to perform more stringent monitoring, recordkeeping, and reporting, or to be exposed to excessive delays in approach due to extended schedules for public hearings, as this would serve as a disincentive for using innovative control technologies.

One commenter (A-90-19: IV-D-98) suggested that subpart F include specification of the kind of compliance demonstration required, and the procedure the Administrator will follow for reviewing requests for alternative means of emission limitations.

Response: The provisions in subpart F of the HON regarding alternative means of emission limitation are consistent with §63.6(g) of the General Provisions. They

apply only when an owner or operator seeks to use an alternative to a design, operational, or work practice standard in subpart G or H. These provisions do not apply if an owner or operator wishes to use a device other than the reference technology to meet an emission limit.

The provisions in subpart G for control of Group 1 storage vessels are examples of design, operational, and work practice standards. They require floating roofs with particular types of seals and fittings, and a specified inspection schedule, or a closed-vent system ducted to a 95-percent efficient control device. If an owner or operator who is not using emissions averaging wishes to control a Group 1 vessel using a unique floating roof design, or to follow alternative vessel inspection procedures, they would need to submit to the Administrator information demonstrating that their alternative means of compliance achieves equivalent emission reduction. A public hearing and a Federal Register notice are required in this case by §63.6(g) of the General Provisions.

It is expected that the alternative means of emission limitation provisions will be used in very few cases. These provisions do not apply if a source wishes to use an alternative device to meet the emission limit. For example, Group 1 process vent and transfer emission points are required to achieve 98 percent reduction (unless they are part of an emissions average). An owner or operator can use any control device, including a device other than the reference control technologies mentioned in the rule, to achieve the required reduction. They would need to follow the process vent or transfer provisions for conducting a performance test to demonstrate 98 percent reduction, and include a justification for the parameter they intend to monitor in the Implementation Plan or operating permit application. The monitoring requirements would be decided by the implementing agency or permitting authority as provided in §63.151 of subpart G.

In response to the commenter's (A-90-19: IV-D-98) suggestion that more specific provisions regarding alternative

means of emission limitation be included in subpart F, the EPA does not consider it possible to foresee what types of alternatives may be requested. Without knowledge of the specific alternatives, it is not possible to provide details on how to demonstrate that the alternative achieves equivalent emission limitation. The General Provisions address procedures to be followed by the implementing agency in considering requests.

Comment: Two commenters (A-90-19: IV-D-56; IV-D-63) suggested that variance provisions for special and extenuating circumstances, such as financial insolvency (A-90-19: IV-D-63), be included in the HON to provide flexibility in compliance with the rule.

Response: The HON allows compliance flexibility in a number of ways. The HON allows a source to apply for a 1-year compliance extension on a case-by-case basis. The HON also allows flexibility in control of Group 1 emission points. For example, process vents may comply by using flares or a variety of enclosed combustion devices, or by modifying the process or increasing product recovery to raise the TRE to greater than 1.0. A source may choose the approach that is least costly for their particular situation. Emissions averaging may also reduce compliance costs. A source may also apply to use alternative monitoring, recordkeeping, and reporting systems. However, the Act requires that existing sources comply within 3 years (with the possibility of a 1-year case-by-case compliance extension). Therefore, the HON cannot allow sources to delay compliance beyond that time period, even in cases of financial insolvency.

Comment: One commenter (A-90-19: IV-D-33) recommended including the definition of "first attempt at repair" from §63.161 in the definition section in §63.111.

Response: The definition of "first attempt at repair" has been included in the definition section in §63.111, of subpart G.

Comment: One commenter (A-90-19: IV-D-33) advocated changing all references to the term "calendar days" in

subparts F, G, and H to the term "working days" because "calendar days" does not consider the operating reality at many facilities where the maintenance staff does not work 24-hour shifts. The commenter (A-90-19: IV-D-33) provided a list of specific references in the proposal that refer to "calendar days" and stated that changing these references would alleviate some of the repair burden, such as having to bring maintenance personnel in on overtime to meet the standard, and would better match operating realities. The commenter (A-90-19: IV-D-33) recommended adding a definition for "working days" to §§63.101 and 63.161 that states that "working days shall mean any day on which Federal government offices are open for normal business. Saturdays, Sundays, and official Federal holidays are not working days." The commenter (A-90-19: IV-D-33) also stated that a draft of the General Provisions contains wording referring to the term "calendar days" and that no such wording is contained in the General Provisions for 40 CFR part 60 and 61.

Response: The General Provisions state that time periods specified in days must be measured in calendar days, even if the word "calendar" is absent, unless otherwise specified in an applicable requirement. The General Provisions also added identical wording to 40 CFR parts 60 and 61. The EPA reviewed the list of references to "days" that the commenter included with their comments and determined that the HON allows a sufficient amount of time for maintenance and repairs. Generally, the rule allows the source 5 days to attempt repairs and 15 days to complete repairs. This amount of time would generally be adequate for repairs, and in most cases should not place a burden on the facility. In the case of transfer operations, a source that will not be transferring within the next 15 days may elect to wait until the next scheduled transfer operation occurs to complete repairs. The HON has been revised to specify "calendar" or "operating" when referring to days to avoid any confusion.

Comment: One commenter (A-90-19: IV-D-33) suggested including the definition of "operating permit" in §63.101,

instead of §63.111 where it is currently defined, since the term is first mentioned in §63.102 of the proposed rule. The commenter (A-90-19: IV-D-33) also recommended including a reference to 40 CFR part 71 regulations, which would be issued in the event a State does not develop and obtain approval for its own 40 CFR part 70 permit program. The commenter (A-90-19: IV-D-33) stated that including such a reference would prevent the need to revise the HON once a part 71 permit program is promulgated.

Response: In response to the commenter's request, the definition of "operating permit" was moved from §63.111, subpart G, to §63.101, subpart F of the final rule. The definition was revised to refer to either a part 70 or a part 71 permit.

Comment: One commenter (A-90-19: IV-D-92) suggested that the HON contain a "savings clause" stating that once the HON is promulgated, previously permitted facilities may petition for adjustment of permit conditions if they are more stringent than the final regulation.

Response: After the HON is promulgated, all sources subject to the HON must comply with the HON regulations. However, construction and operating permits issued to individual sources may also contain additional requirements. For example, the same source may be subject to other Federal regulations, State regulations, or PSD or NSR review. The content of permits is outside the authority of the HON rule, so a clause such as the one suggested by the commenter cannot be added.

Comment: One commenter (A-90-19: IV-D-64) requested that §63.103(d)(2) be clarified to refer to the most stringent reporting standards applicable. Two commenter (A-90-19: IV-D-64; IV-D-73) requested relief from duplicative recordkeeping and reporting under multiple subparts of part 63.

Response: Section 63.103 has been revised for the final rule and no longer includes the duplicative recordkeeping and reporting statement contained in the proposal. Instead, a new

table (table 3) has been included which specifies the provisions of subpart A that apply and those that do not apply to owners and operators of sources subject to subparts F, G, and H. This table is also included in chapter 6 of volume 2D as table 6-1.

The EPA recognizes that the guidance in the proposed HON on determining with which requirements to comply when regulations overlap is confusing. In order to clarify these requirements, the EPA has listed in §63.110 of the final rule which provisions owners or operators are required to comply with when they are subject to existing regulations. The EPA believes that in most cases the HON contains more stringent requirements than in other existing regulations. For these cases, the EPA has decided to override the requirements of the existing regulations with the requirements of the HON. In other cases, the EPA has specified which parts of each rule are still required. In still other cases, the EPA has allowed for site-specific determination of requirements.

Additional discussion on this topic is contained in section 6.6.4 of BID volume 2D.

Comment: One commenter (A-90-19: IV-D-86) noted that the reference in proposed §63.151(a)(6) to Clean Air Act section 112(d) is incorrect, and should refer to section 112(i)(3)(B).

Response: The commenter is correct and §63.151(a)(6) of the final rule has been changed to read:

> Pursuant to section 112(i)(3)(B) of the Act, an owner or operator may request an extension allowing the source up to 1 additional year to comply with section 112(d) standards.

# 4.0 TEST METHODS

## 4.1 METHOD 18

Comment: A commenter (A-90-19: IV-D-32) stated that gaseous standards are not currently available for all of the HAP's. Another commenter (A-90-19: IV-D-37) was not clear on how to prepare the standard.

Response: The EPA agrees that gaseous standards are not commercially available for all of the HAP's. However, section 6.2 of Method 18 allows the option of preparing gaseous standards either from a higher concentration gas cylinder or through liquid or gas injection. The method clearly states the procedure for preparing the standards.

Comment: A commenter (A-90-19: IV-D-32) stated that recovery correction is redundant since regulations take this into account during the developmental stage.

Response: The EPA agrees that this is true with most method development. However, Method 18 is a generic gas chromatography technique allowing the use of four different sampling techniques and any suitable separation and detection technique. Since so many options are available for sampling and analysis, the EPA is seeking to ensure that the proper engineering judgment is being used in the development of a sampling and analytical scheme.

Comment: Several commenters (A-90-19: IV-D-32; IV-D-87) stated that facilities should perform the recovery study in the gas matrix of the source, in order to take matrix effects into account.

Response: The EPA agrees with this comment and has modified Method 18 in order to quantify the matrix effects in the source.

Comment: A commenter (A-90-19: IV-D-37) suggests that the EPA intended the gaseous standard concentration to be within 10 percent of the levels present in the source stream.

Response: The EPA responds that the proposed amendments clearly stated that the gaseous standard shall be based on the level of the standard, not on the levels present in the source. In responding to comments concerning matrix effects, the recovery procedure has been amended; current spiking procedures require standards based on levels found in the source.

Comment: A commenter (A-90-19: IV-D-37) disagrees with the requirement for efficiency standards which require applying the recovery correction based on the outlet concentration.

Response: The EPA concurs with this comment. The recovery study, since it is currently based on determining efficiency at the concentrations found in the source, must be determined each time the method is applied at a source.

Comment: A commenter (A-90-19: IV-D-37) wonders what to do if a certain compound does not meet the recovery criteria listed in the Method.

Response: Method 18 allows the use of several sampling and analytical techniques which are commercially available. If a specified compound does not meet the recovery criteria, the chosen technique was not appropriate for that compound; therefore, another sampling and analytical scheme shall be developed. The EPA emphasizes that this type of developmental work has always been required in Method 18; this amendment seeks to clarify the procedures to be used in the development.

Comment: A commenter (A-90-19: IV-D-37) suggests that the EPA should specify that Method 18 applies only for volatile compounds on the HAP list.

Response: The EPA disagrees that the method is only applicable to the most volatile compounds. The method allows the use of adsorbents which are applicable to a wide variety of compounds, including semi-volatile compounds.

Comment: A commenter (A-90-19: IV-D-87) stated that the matrix of the source gas and the concentration of the compounds in the matrix tend to vary; this could significantly alter the recovery rate of the compounds of interest. The commenter proposed that a matrix spike would be preferable for the determination of recovery rates and correction factors. The commenter further stated that blank correction should also be allowed.

Response: The EPA concurs with this commenter. Modifications to the proposal have been made in order to take matrix effects into account. The EPA does not agree that blank correction be allowed in this case. Procedures to ensure the proper cleanliness of the sampling and analytical system should be routine for this and any other method. Part of the purpose of the recovery study is to point out contamination problems with the sampling and analytical system; a contamination problem will manifest itself as a higher than expected recovery.

Comment: A commenter (A-90-19: IV-D-16) maintains that on tall stacks, it is difficult to introduce a gaseous standard at the tip of the probe and suggests an alternative arrangement where the gas would be introduced after the filter.

Response: The EPA concurs that in some instances, introducing the gaseous standard at the probe would be cumbersome. However, injection of the standard after the filter is not acceptable due to the possibility of leaks within the filter holder. Therefore, the EPA has modified the procedure to allow the introduction of standard at the probe (not necessarily the probe tip) but before the filter.

4.2 METHOD 25D

Comment: A commenter (A-90-19: IV-G-5) requested that the EPA include a statement explaining the importance of relative standard deviation (RSD) to the results of the interlaboratory study.

Response: The EPA believes that the narrative in the report and the discussion of the results addresses this comment.

Comment: A commenter (A-90-19: IV-G-5) states that an overall RSD of 22 percent is unacceptable for determining compliance with the regulation.

Response: The EPA performed this study in order to determine whether the improved glassware design in the method resulted in better performance among amateur laboratories. The results of this study show a significant improvement from the first interlaboratory study. With the addition of quality control sample analysis requirements, the precision within each laboratory should improve. The EPA has conducted various studies on the precision of the method with various waste matrices, both synthetic and real waste. Most waste types, including actual waste samples, showed RSDs below 10 percent.

Comment: A commenter (A-90-19: IV-G-5) agrees with the decision not to use Laboratory A data to determine the between-laboratory variability, but questions the decision to exclude Laboratory A from the within-laboratory variability calculations. The same commenter further disagrees with the procedure for disregarding outliers from the statistical calculations. Another commenter (A-90-19: IV-D-32) questioned the elimination of any data as outliers.

Response: The EPA followed established statistical procedures in the analysis of data for this interlaboratory study. The EPA performed the data analysis for this study using the same procedures utilized in the first interlaboratory study. The purpose of this study was to determine whether modifications in equipment design contributed to better performance of the method by amateur laboratories. In order to determine the occurrence of improved performance, the same statistical procedures (including the determination of outliers) were utilized in both studies.

Comment: A commenter (A-90-19: IV-G-5) was troubled by the idea of blank correction in the method; contaminated

solvents should not be used in any method. Another commenter (A-90-19: IV-D-32) questioned the logistics of removing the data of a laboratory which did not run blank samples during the study.

Response: The EPA chose polyethylene glycol (PEG) as part of the analytical matrix due to its ability to retain organic compounds. It is PEG's affinity for organic compounds which results in a greater than zero blank response. The method requires the analysis of blank samples and allows the option of blank-subtraction up to 10 ppmw. This option is allowed not due to an inherent impurity in the PEG, but due to the difficulty in storing cleaned PEG in the laboratory without it adsorbing impurities from the ambient atmosphere. The reason this particular laboratory's data were not analyzed were two-fold: the laboratory did not follow the method, and it is impossible to know whether they followed the PEG cleaning procedure correctly since blank analyses were not done.

Comment: A commenter (A-90-19: IV-G-5) suggested format changes to the report, including the data summary tables in section 5, tables 5.5 and 5.7, and adding the ranges of the standard deviations.

Response: The EPA does not believe that these changes in format would enhance the reader's understanding of the report. The commenter suggested moving summary tables into an appendix; standard protocol calls for the inclusion of these tables into the body of the report.

Comment: A commenter (A-90-19: IV-D-32) stated that the interlaboratory study proved a significant bias in Method 25D because recoveries of the compounds studied did not match theoretical values. The commenter questioned the accuracy of the method.

Response: The EPA developed Method 25D as a screening method to provide a relative measure of emission potential. Since a screening method for total volatile organics (VO) implies no knowledge of the components of the waste, the detectors used in the method are calibrated with a combination

of propane and vinylidene chloride. The response factors of these compounds are used to calculate total VO. Therefore, by definition, measured values will not match theoretical values for any one individual compound. The method is a standardized, precise technique used to provide a relative measure of the emission potential of waste.

Comment: A commenter (A-90-19: IV-D-32) expressed concern with the long sample path between the Method 25D oven and the detectors. The same commenter also expressed concerns with the difficulty of cleaning the glassware, especially the coalescing filter.

Response: The method provides explicit instructions for heating the sample lines, the heating temperature, and instructions to check for cold spots. With the hundreds of samples that the EPA has analyzed in the development of the method, cleaning the glassware has not been a hindrance, in terms of time or effort. The coalescing filter is present to remove aerosol formation, but aerosol formation has never been reported thus far.

Comment: A commenter (A-90-19: IV-D-32) stated that the chlorine calibration standard certification of ±10 percent demonstrated that a standard other than chlorine should be used for calibration.

Response: The method is designed to measure total carbon and total chlorine; calibration with another calibration standard is therefore not an option. The standards obtained for the study were certified by the manufacturer as ±5 percent, but the EPA contractor analyzed the cylinders to verify concentration before shipment.

Comment: A commenter (A-90-19: IV-D-32) wondered if the results of the three experienced laboratories differed significantly from those of the three inexperienced laboratories.

Response: Although three of the laboratories in the second interlaboratory study were the same companies as those used in the first study, the personnel analyzing the samples with the method were not the same in any of the participating

laboratories. Therefore, it is not possible to compare results of the study based on experience since none of the participating personnel had previous experience with the method.

4.3 METHOD 304

Comment: One commenter (A-90-19: IV-D-32) specified concerns regarding adequate mixing within the aeration tank, the potential for foaming in the reactor, the possibility of explosion hazard, the potential for buildup of inhibitory compounds within the reactor, and the potential for buildup of biomass on reactor walls and instruments. The same commenter and another commenter (A-90-19: IV-D-75) further requested guidance when foaming occurs in the method reactor and not in the full-scale unit.

Response: Both Methods 304A and 304B require that aeration gas be set to provide sufficient agitation to keep the solids in suspension. The methods further state that defoaming agents may be used in the bioreactor if they are also used in the full-scale system. Since the bench-top unit of the methods utilize the biomass and wastewater of the full-scale unit, the EPA does not foresee a foaming problem requiring defoaming in the laboratory which is not seen in the biological treatment unit. The buildup of biomass in the system should not be a problem during testing because both methods provide for routine maintenance of the system, including the various probes. The external clarifier is recommended in the methods because it is easy to maintain. For safety reasons, the methods recommend that the bench-top system be placed inside a laboratory hood.

The commenter's concern is that volatilized vapors from the bioreactor may concentrate in the system and become an explosion hazard. Proposed Method 304 uses a caustic scrubbing solution to strip the biodegradation by-products from the purged bioreactor gases. To address these concerns, the final rule has been amended to allow sources to determine $F_{bio}$ with a bench top bioreactor that vents a slip stream of the purged gases rather than scrubbing the by-products of

biodegradation. The amount of HAP's vented to the atmosphere are determined by measuring the flow rate of the vented gas and using Henry's law constants, if known, or direct measurement if Henry's law constants are not known. For simplicity, the new venting option has been designated as a separate method entitled Method 304A, while the scrubbing technique proposed as Method 304 is now designated Method 304B. However, there are some restrictions on which method a source may use. A regulating authority may deny a source the use of Method 304B on the grounds that they believe the HAP's of interest may react in the caustic scrubber.

A source does not have to use Method 304A or 304B to determine $F_{bio}$. The final rule is structured so that sources have a choice of three procedures to determine $F_{bio}$. The three procedures are described in appendix C of part 63. One of the choices is to use either Method 304A or 304B (with certain restrictions). The other two choices are to use performance data with and without biodegradation and the use of inlet and outlet concentration measurements. The source selects the appropriate procedure based on site-specific information. In addition, sources may use other methods instead of 304A and 304B provided they meet the criteria of Method 301 in appendix A of part 63.

Comment: A commenter (A-90-19: IV-D-32) states that the regulation does not clearly state under what conditions proposed Method 304 will be required.

Response: The determination of the faction of HAP's biodegraded ($F_{bio}$) is performed initially and whenever operational changes in the process equipment creating a change in the wastewater concentration or compound mix occur, or operational changes occur concerning the biological treatment unit. The use of Methods 304A and 304B is one of three options an owner or operator is allowed to use to calculate $F_{bio}$. The two additional options use site specific data obtained from the full scale biological treatment unit. All three options are discussed in appendix C of part 63,

"Determination of the Acceptable Level of Organic Destruction in Biological Treatment Units ($F_{bio}$)".

Comment: One commenter (A-90-19: IV-D-32) is concerned that multiple experiments will be required to determine the appropriate Monod kinetic constants to be utilized in the WATER7 model. The same commenter states that the method is complex and potentially expensive to complete; costs are estimated at $750 per analysis. The same commenter also states that the equipment is not commercially available. Another commenter (A-90-19: IV-D-77) also stated that the equipment is expensive and labor-intensive to operate.

Response: The EPA disagrees that multiple experiments will be required. The parameters to be used in the method are determined by the full scale biological treatment unit. One set of parameters (those of the full scale biological treatment unit) are required to determine the first order rate constant for each pollutant. The equipment required for the method is readily available commercially for a relatively low cost (under $5,000 for the bioreactor components). The EPA is aware of a facility which custom-machined a bioreactor in its own shop. The method apparatus, once setup is complete, requires little operator maintenance; temperature, oxygen concentration, flow rate, and air circulation rate monitoring is required three times per day. Analytical costs will vary based on the compounds present, but many analytical techniques for water range in the $100-200 range.

Comment: A commenter (A-90-19: IV-D-32) disagrees with the use of an immersion heater in an oxygen atmosphere.

Response: The immersion heater was used during the method development with no problems. However, the specifications for the heater in both Method 304A and 304B have been revised. The new language states that the heating system must be capable of maintaining the benchtop bioreactor at the desired temperature.

Comment: A commenter (A-90-19: IV-D-32) questions the use of silicone tubing in transporting volatile organic compounds.

Response: The EPA agrees that silicone, although ideal for use in peristaltic pumps, is permeable to some volatile organic compounds. This tubing is to be used only through the length of the pump head. The EPA has added wording to the method to allow for the use of Viton tubing in the pump.

Comment: A commenter (A-90-19: IV-D-32) expresses concern for the potential of pressure build-up in the reactor, and the difficulty in controlling dissolved oxygen levels to the required specifications. The commenter cites the difficulty the EPA contractor experienced in maintaining the dissolved oxygen concentration.

Response: The method design allows for control of pressure and oxygen concentration with the use of a pressure sensitive relay and a solenoid valve. The difficulties encountered in maintaining the oxygen concentration to the desired levels during the first study were addressed by using oxygen gas cylinders instead of the air cylinders in subsequent studies.

Comment: Two commenters (A-90-19: IV-D-32; IV-D-77) questioned the use of low-density polyethylene containers for wastewater storage.

Response: The EPA chose low-density collapsible polyethylene to minimize volatilization losses by minimizing the headspace above the sample during sampling and storage.

Comment: A commenter (A-90-19: IV-D-32) questions the use of mixed liquor suspended solids concentration control versus the use of solids retention time control.

Response: The EPA intended for the method to be designed based on full-scale biological treatment units. The biomass to be used in the bioreactor is obtained from an existing full-scale process and thus will be acclimated and will behave as the full-scale unit in the absence of air emissions. The purpose of the maintenance schedule, which includes the determination of suspended solids concentration, is to insure that the bench-top reactor parameters continue to mimic the full-scale unit throughout the test.

Comment: A commenter (A-90-19: IV-D-32) questions the requirement to discard tubing once it is blocked, and questions the required flow rate variability of 5 percent. The same commenter was confused about the meaning of the term "targeted conditions."

Response: The maintenance requirements in the method were based on repeated laboratory experiments during the development of the method. The tubing, when blocked, was difficult to clean adequately without the use of solvents. The flow rate variability requirement was also based on these experiments and is easily attained with the equipment specified in the method. The targeted conditions in the context of the method refers to the parameters of the full-scale biological treatment unit, on which the method conditions are set.

Comment: One commenter (A-90-19: IV-D-32) questions the alternative method of supplying wastewater to the bioreactor by obtaining feed directly from a full-scale unit, since concentrations can fluctuate over time in some facilities.

Response: The sampling procedure is presented as an alternative to the wastewater storage procedure. Units which expect great variability should develop a sampling plan that addresses the variability and use the sampling procedures described in chapter 9 in SW-846. As mentioned in appendix C of part 63, the feed flow to the benchtop bioreactor shall be representative of the compound mix and concentration of the wastewater that will be treated by the full scale biological treatment unit after the collection and treatment system has been enclosed as required under the applicable subpart.

Comment: A commenter (A-90-19: IV-D-32) believes that some compounds may be adsorbed onto the biosolids which exit the clarifier overflow, thus being measured as part of the effluent concentration.

Response: The EPA has conducted studies on various classes of compounds and their tendency to adsorb onto biosolids. The results indicated that this tendency is none to negligible.

Comment: One commenter (A-90-19: IV-D-32) stated that the analytical requirements in the method were unrealistic in terms of sample storage time of 8 hours, RSD requirement of 15 percent, the possibility of multiple analytical techniques, and high sample volumes required. Another commenter (A-90-19: IV-D-77) suggested that inorganic preservative addition and freezing of the sample would extend the sample storage time indefinitely.

Response: The analytical requirements in the method are based on the various studies conducted by the EPA during the development of the method. The limited storage time is required in order to limit further degradation of the sample during storage. The method has been amended to require cooling, not freezing, of the samples before analysis; this procedure was carried out during the EPA studies, but the requirement was overlooked during the development of the method. The RSD requirement is well within the specifications of EPA methods. Although the number of different analytical techniques used will depend on the waste matrix, the method does allow the option of developing an analytical technique for a particular waste matrix. The purge and trap techniques most commonly used specify 5 to 10 mL of sample.

Comment: One commenter (A-90-19: IV-D-32) suggested two possible alternatives to the method. Other commenters (A-90-19: IV-D-75; IV-D-77; IV-D-34) suggested that other appropriate methods exist that measure biorate.

Response: One of the procedures suggested by the commenter measures the HAP's in the influent and the effluent of a bench top system, and measures the amount volatilized. The fraction of the HAP's biodegraded would be determined by a mass balance. This procedure may involve extensive method development. A second suggested procedure is to measure the HAP's in the influent and effluent from the full scale system, estimate the fraction removed by sorption and volatilization with appropriate models, and attribute any other mass lost in the aeration basin to biodegradation. The EPA considered these comments and incorporated some of these suggestions into

the final rule. The final rule is structured so that sources have a choice of three procedures to determine $F_{bio}$. The three procedures are described in appendix C of part 63. The first choice is to use either Method 304A or 304B to determine $F_{bio}$. The second choice is a procedure in which performance data both with and without biodegradation are used to determine $F_{bio}$. The third choice is a mass balance approach using inlet and outlet concentration measurements. The source selects the appropriate procedure based on site-specific information. In addition, sources have the option to use methods in place of 304A and 304B provided the alternatives meet the criteria of Method 301 in appendix A of part 63.

Comment: A commenter (A-90-19: IV-D-87) suggested that the method should not be used to suggest operating parameters of biological treatment units, since biodegradation rates of compounds are sensitive to environmental conditions.

Response: The EPA agrees with the commenter. The method requires that the parameters of the full-scale unit be used to determine the testing parameters in the benchtop unit. The purpose of the method is to determine the biodegradation rates of target compounds by simulating as much as possible the performance of the full-scale unit.

Comment: Three commenters (A-90-19: IV-D-32; IV-D-75; IV-D-77) stated that the design of the bioreactor specified in the method is outdated, and that current designs combine the aeration basin and the clarifier. The specification that the clarifier not have headspace was also questioned.

Response: The design of the bioreactor specified in the method evolved during the course of the EPA's studies on the development of the method. Meeting the target biomass concentration was facilitated by utilizing the external clarifier design. The option of utilizing an internal clarifier has been added to the method. If using an external clarifier, it is important that no headspace be present since any headspace monitoring is done at the bioreactor.

Comment: Two commenters (A-90-19: IV-D-32; IV-D-75) stated that the removal of probes for cleaning will expose the

sealed bioreactor to the atmosphere, and that equipment modifications should be allowed in order to permit removal of probes without breaking the seal.

Response: The method provides procedures to follow if the system has been exposed to the atmosphere during maintenance procedures. The method does not specify how the probes are to be connected to the reactor (other than an air-tight seal); therefore, a probe connection which allows probe removal without breaking the seal would be allowed.

Comment: A commenter (A-90-19: IV-D-32) expressed concern that possible sludge bulking or pinpoint floc would bias the data.

Response: The EPA designed the method to mirror the conditions in the full-scale biological treatment unit. The sludge, wastewater, and parameters all represent the full-scale system, with the exception that the method reactor will omit air emissions. The agitation in the reactor is required in order to keep the solids suspended.

Comment: Two commenters (A-90-19: IV-D-75; IV-D-77) questioned the safety and use of pure oxygen cylinders specified in the method.

Response: The EPA specified pure oxygen instead of air in the system because pure oxygen was needed during laboratory studies in order to maintain the target oxygen concentration in the system. The method has been modified to allow the use of air cylinders if, for safety or other reasons, oxygen cylinders cannot be used and as long as the system maintains the specified oxygen concentration.

Comment: A commenter (A-90-19: IV-D-75) questioned the use of 1/4 inch tubing for transferring effluent. The commenter suggested 1/2 inch tubing instead. The same commenter disagreed with the degree of detail included in the equipment specifications, including the wattage of the heater and the polarographic oxygen probe.

Response: The equipment specifications in the method resulted from months of method development work by the EPA. The problems mentioned by the commenter were not encountered

in these studies. However, the EPA agrees that design specifications of the bioreactor should be stated as recommendations rather than requirements whenever appropriate. Methods 304A and 304B have been revised to accommodate the commenter's concern.

Comment: A commenter (A-90-19: IV-D-75) expressed concern that the blower, scrubber, and condenser might induce evaporative losses. Another commenter (A-90-19: IV-D-77) contended that there was no need to recycle headspace and use an alkaline trap to capture carbon dioxide if the headspace was analyzed by gas chromatography.

Response: The bioreactor system in the proposed Method 304 is designed as an closed, leak-tight system which measures biorate in absence of air emissions. Evaporative losses implies that the system is constantly losing compounds to the air, which is not true since the system described in proposed Method 304 is closed. This is also true of Method 304B in the final rule. Method 304A is different and vents a slipstream of the offgas, but the vented HAP's are accounted for either mathematically (using known Henry's law constants) or by direct measurement. The scrubber, described in Method 304B, removes carbon dioxide, which could kill the biomass.

Comment: A commenter (A-90-19: IV-D-75) stated that the true concentration at the effluent should be used instead of the limit of quantitation, since that would provide a more accurate biorate.

Response: The EPA agrees with the commenter that the true concentration will result in a more accurate biorate; there is nothing in the method which discourages the user from developing a more sensitive analytical technique instead of using the limit of quantitation. The EPA believes that this option should be provided since some sources may opt to use the limit of quantitation instead of developing another analytical technique if the effect on the biorate is negligible.

Comment: A commenter (A-90-19: IV-D-75) believes that calibration of analytical instrumentation should be performed in the actual waste matrix.

Response: The method calls for calibration of the instrumentation using an aqueous matrix. Since the largest component in the samples (and usually the largest interferant) is water, and since preparing accurate standards in wastewater would be difficult, the EPA believes the method requirements for calibration are adequate.

Comment: A commenter (A-90-19: IV-D-75) requested information about the audit sample and its matrix. Another commenter (A-90-19: IV-D-77) questioned its necessity.

Response: The EPA routinely includes audit sample analysis requirements in methods with the qualifier that they are required if available. Audit samples are not currently available for this method. Audit sample analysis is routine practice for laboratories conducting good quality assurance/ quality control procedures.

Comment: A commenter (A-90-19: IV-D-75) stated that it would be difficult to meet the 15 percent RSD requirement after 2.5 hydraulic residence times. The same commenter also questioned the usefulness of hydraulic residence time versus the actual biokinetics taking place; the method will produce different rate constants for different hydraulic retention times even if the kinetics in the two systems are the same.

Response: The method states that the first set of samples be taken after a minimum of 2.5 hydraulic residence times. The method also requires the use of acclimated biomass from a full-scale unit. Therefore, the 15 percent RSD requirement is reasonable assuming the method requirements have been followed. The method provides a measure of the rate constant at the conditions (including hydraulic residence time) present in the full-scale system. This method is not meant to be used as a research technique into biokinetics or to provide optimum operating conditions for a biological treatment unit; rather, the method seeks to measure the first

order rate constant for a system already in place in order to determine the fate of the compounds being fed into the system.

Comment: A commenter (A-90-19: IV-D-75) states that the pressure of the bioreactor system will drop if oxygen addition is stopped (when the oxygen concentration is at the target point).

Response: The method requires that the benchtop bioreactor system be sealed from the atmosphere and be free of leaks. A pressure drop as mentioned by the commenter would indicate a leak in the system and thus would require the appropriate corrections to restore the sealed system.

Comment: A commenter (A-90-19: IV-D-75) expressed concern about the sludge wasting procedure and whether the restrictions on the target suspended solids concentration would result in frequent sludge wasting procedures.

Response: The sludge mixture used in the benchtop bioreactor system is obtained from the full-scale system. The benchtop reactor therefore requires the maintenance of the system at initial concentration. The sludge wasting procedures in the method are present in order to remedy any problems in keeping the suspended solids concentration at the target level if needed.

Comment: A commenter (A-90-19: IV-D-75) asked that terms in equation 6-4 be defined.

Response: This comment has been addressed in the method.

Comment: A commenter (A-90-19: IV-D-77) stated that the wastewater feed be run in batch mode rather than the continuous flow mode.

Response: The EPA has developed this method as a standardized procedure to calculate biorates in full-scale biological treatment units. The continuous flow of wastewater through the system is designed to measure the steady state biorate constant of the system. For the few systems which will not be represented by the standardized method, the EPA has traditionally entertained motions for alternatives to test method on a case-by-case basis.

Comment: A commenter (A-90-19: IV-D-77) contended that unacclimated biosludge should be used in the bioreactor in order to test the ability of the biomass to respond to a new compound being added to the wastewater treatment system.

Response: The intent of the method is to measure the kinetics of the full-scale system already in place. The wastewater being tested in the method is the same wastewater being fed into the full-scale unit. The purpose of the test is to measure the biodegradation rates of the compounds present in the system, not to investigate the ability of the biomass to adjust to new parameters.

Comment: A commenter (A-90-19: IV-D-77) stated that the 5 cm headspace requirement in the bioreactor should be restated to minimize headspace.

Response: The intent of the 5 cm requirement was to minimize headspace; the method wording has been changed to clarify this statement.

Comment: A commenter (A-90-19: IV-D-77) believes that pH monitoring of the bioreactor should be included in the method, as well as requiring the determination of suspended solids twice, not once, per day.

Response: The EPA concurs with this commenter for sources which normally monitor the pH of the biological treatment unit; this change has been addressed in the method.

Comment: A commenter (A-90-19: IV-D-77) believes that sampling the aeration basin contents would be more representative than sampling the clarifier contents.

Response: The method is designed for sampling at the inlet to the bioreactor and the outlet of the reactor; this type of sampling allows the most representative measure of degradation through the system.

Comment: A commenter (A-90-19: IV-D-77) cited the need for more frequent sampling (once per hour) or less frequent sampling (once per 120 hours) than the method's requirements.

Response: The sampling requirements in the method state that after 2.5 hydraulic residence times, six sets of samples must be obtained at least 8 hours apart. Less frequent

sampling is acceptable according to the requirements of the method. More frequent sampling is unnecessary since fast biodegradation will result in low effluent concentrations.

Comment: A commenter (A-90-19: IV-D-77) stated that modeling would not be needed if mass balance data from live and killed runs were used.

Response: The commenter is correct, if mass balance data that represents or characterizes operation of a bioreactor unit both with and without biodegradation are used, modeling is not needed. Appendix C of part 63 offers this procedure as an option to determine the fraction biodegraded. The commenter should be aware that using this method is acceptable as long as it is representative of the system after the collection and treatment system has been enclosed as required under the applicable subpart.

Comment: A commenter (A-90-19: IV-D-34) encountered several problems when conducting the method in the laboratory: problems with operating conditions, incomplete degradation of "readily degradable" compounds, lack of biomass growth, growth of a fungus-like material.

Response: The parameters to be used in the benchtop reactor of the method are those of the full-scale system, with the exception of removal of air emissions. If a compound was degraded only partially in the method, this points to an illusion of biodegradation in the full-scale system where air emissions were a significant factor. Since the method seeks to duplicate the conditions in the full-scale system, the problems mentioned by the commenter seem to point to problems in achieving the correct parameters within the target ranges (lack of biomass growth is such an indicator).

Comment: A commenter (A-90-19: IV-D-34) said the columns from tables 14b, 15a, 15b, and 16 requesting a range of VOHAP values is not defined and should not be required to be submitted.

Response: The column in the tables mentioned by the commenter requesting the source to submit the range of VOHAP

values has been deleted. The source only has to provide the average VOHAP value.

Comment: Two commenters (A-90-19: IV-F-1.2; IV-F-4) expressed concern that proposed Method 304 may only be used to determine one ($K_1$) of the two constants needed in the WATER7 model ($K_1$ and $K_{max}$) and is therefore not adequate.

Response: The use of Water7 with biorates measured by either EPA Methods 304A or 304B does not require the use of two Monod parameters to extrapolate the results of the biorate measurements to different full-scale conditions. Since the bench top test method conditions are required to be identical to the full-scale system conditions, no extrapolation should be needed. The use of a one parameter model ($K_1$ from EPA Methods 304A or 304B; $K_{max}$ set at a very high value, 1000) provides some limited extrapolation capability for the situation where the full-scale conditions are not identical to the test method conditions. For further information on the constants refer to "A Technical Note on Biological Rate Constants," to E. Manning, EPA, from C. Allen, RTI, dated February 1, 1994.

Comment: One commenter (A-90-19: IV-D-32) stated that the regulation should be clarified to state that for new treatment systems, an engineering estimate of the design hydraulic retention time should be used when conducting either Method 304A or 304B when the full-scale system is not in operation.

Response: The Method 304 benchtop reactor shall be run using the parameters of the full-scale system as it would be operated when in compliance with the rule. However, for new sources that start up within nine months of promulgation, the source can determine $K_1$ by comparing several methods and selecting the average result to use as the $K_1$ input.

Comment: One commenter (A-90-19: IV-D-32) stated that the EPA needs to clearly define "audit samples" and "compliance tests" in the method. The commenter (A-90-19: IV-D-32) stated that it is not clear if audit samples are to

be analyzed before or at the same time that the actual samples are analyzed. The commenter (A-90-19: IV-D-32) stated that it is not clear where audit samples are obtained or what type of compliance test is required.

Response: The audit requirement in the method (section 2.3) clearly states that audit samples shall be analyzed when available. A telephone number is provided in order to determine audit availability. When performing this method to demonstrate compliance with an applicable regulation, an audit sample will be provided, if available, along with the appropriate instructions for analysis.

Comment: One commenter (A-90-19: IV-D-32) stated the difficulty in maintaining three pumps/blowers at constant, closely controlled feed rates.

Response: The flow rate settings for the feed pumps are set at the startup of the test. The purpose for the continuous monitoring of the flow rates is to insure that conditions are maintained at the correct settings throughout the testing period. The EPA did not encounter difficulty in maintaining the system at the correct settings during its months of continuous operation of the bioreactor system.

Comment: A commenter (A-90-19: IV-D-32) stated that full-scale systems have varying dissolved oxygen concentrations and varying temperatures; both of these parameters require constant setpoints in the method.

Response: The purpose of Methods 304A and 304B is to show the full scale biological treatment unit will meet the 95-percent treatment option or the required mass removal, as it will be operated on a daily basis. If the biological treatment unit is operated at a non-steady state (for example, varying DO and temperature), the EPA believes this will adversely affect the biodegradation rate. If the variation in operating parameters is due for example to seasonal changes or process changes, the facility can conduct the test method (either Method 304A or 304B) at these different parameters and show the system is achieving the acceptable level of control as required by the regulation. The facility would be making

multiple runs of the test method to establish an acceptable operating range for its biological treatment unit.

4.4 METHOD 305

Comment: Two commenters (A-90-23: IV-D-20; A-90-19: IV-D-77) stated that some compounds would condense out in the cold trap, thus not meeting the recovery criteria in the method. The commenter also stated that the system design might keep the spiked sample from volatilizing.

Response: The intent of the cold trap (which is optional) is to remove moisture before it reaches the adsorbent cartridges. Analyzing the cold trap contents should be part of the analytical technique if water soluble compounds are present in the sample. As to the spike sample, a gaseous standard is allowed for the recovery study.

Comment: Two commenters (A-90-23: IV-D-20; A-90-19: IV-D-87) suggested that the EPA publish a list of recoveries for each target pollutant on the HON list.

Response: The recovery for any one compound will depend on the method of analysis as well as the other pollutants present in the waste which may act as interferants. The EPA will, however, publish a list of suggested sampling and analytical techniques based on the EPA's own laboratory studies and the published literature. This list, however, will only be a starting point in choosing the appropriate technique. Recovery studies will still be required.

Comment: Two commenters (A-90-19: IV-D-32; IV-D-92) suggested that the elevated purge temperature and purge time do not represent real world conditions. The same commenters (A-90-19: IV-D-32; IV-D-92) suggested that other water methods or headspace measurement method would be acceptable alternatives. A commenter (A-90-19: IV-D-32) noted that the equipment required for the method is not currently commercially available. Another commenter (A-90-19: IV-D-87) questioned the use of polyethylene glycol (PEG) as part of the purge matrix, since organics are more soluble in PEG and would be less likely to be purged out of the sample.

Response: The EPA developed this method to provide a relative measure of the emission potential of waste. This method is a definitive, standardized procedure for determining the potential of organics in a waste to be released from the waste. The method does not attempt to estimate real world conditions as the commenter suggest. The method is used to determine which waste streams would be controlled, the effect of which has been estimated through the use of emission models which reflect real world conditions. The regulation allows the source the option of direct measurements of regulated pollutants in the waste with a validated method, and then correcting the results with the published $F_m$ values. The equipment required to assemble and perform the method is commercially available; in fact, several laboratories currently perform Method 25D, the screening method much like Method 305.

Comment: One commenter (A-90-19: IV-D-32) had concerns with the adsorbent tube sampling procedure suggested in the method: the need to do multiple purge sequences if more than one type of adsorbent is needed, the high purge volume required in the method overloading the adsorbent, inability to use thermal desorption at the regulatory limit due to high concentrations, and the possibility of non-HAP's masking the presence of HAP's.

Response: If more than one adsorbent is needed for a particular waste, the method allows the use of multiple adsorbents placed in concurrent series. The method also allows the use of a slipstream of the sample gas, thereby allowing a smaller mass of the pollutant to be sampled and analyzed. Therefore, if a high concentration of the target pollutant is expected, sampling only a portion of the 6 L/min of purge gas will discourage breakthrough of the pollutant. The wide variety of adsorbents and analytical techniques allowed in the method will allow the source to choose techniques that will provide good separation and quantification of high concentration non-HAP's from the targeted compounds.

Comment: One commenter (A-90-19: IV-D-32) states that two correction factors, one for trapping efficiency and one for desorption/analytical efficiency, are stated or implied in the method; this would result in the sample being corrected twice.

Response: The recovery efficiency study and the subsequent calculated correction factor in the method result in one correction factor which is then used to correct for bias in the sampling, desorption, and analysis steps. Two correction factors are not needed, and therefore, are not required in the method.

Comment: A commenter (A-90-19: IV-D-32) noted that the 50 to 130 percent recovery efficiency criteria was not as stringent as other methods and seemed arbitrary.

Response: The EPA concurs with this commenter. The criteria should be 70 to 130 percent. This was a typographical error. The 70 to 130 percent acceptance criteria represents the maximum bias that the EPA would accept when developing a method for a new pollutant.

Comment: A commenter (A-90-19: IV-D-32) disagreed with the requirement that the response factors fall within 5 percent of the mean of the three response factors determined at separate concentrations (for the calibration procedure), since this is too stringent a requirement and will require too much time to perform.

Response: The EPA disagrees that this requirement for instrument linearity is excessively stringent. Current analytical techniques routinely meet much more stringent linearity criteria. It is important that the analytical instrumentation demonstrate linearity er the dynamic range of the sample concentration. Most analytical techniques require that a percentage of each day be spent on calibration of the instrument.

Comment: A commenter (A-90-19: IV-D-87) wondered why the EPA had not proposed the use of one of the EPA 600 series of water methods instead of Method 305, especially since no validation data are available for Method 305. The commenter

further noted that since the analytical portion of this method was based on Method 18, trace amounts of pollutants would not be quantified with this method. The commenter also noted that the purging procedure may not be appropriate for some of the regulated compounds. Another commenter (A-90-19: IV-D-75) suggested the use of direct inject gas chromatography techniques as a more cost-effective alternative to the proposed method. A commenter (A-90-19: IV-D-92) suggested the use of a distillation or strippability method as a replacement to Method 305.

Response: The EPA has developed this method as a definitive measurement of emission potential of waste. Direct measurement of the pollutants in water is allowed in the rule, after appropriate validation of the method according to Method 301, but the results will then have to be corrected with the corresponding $F_m$ value. The commenter's term validation implies that the results from Method 305 would be compared to other water methods. This would not be possible since Method 305 is a relative measure of the emission potential of waste, and no other methods seek to define it. The method is not based solely on Method 18. Adsorbents suggested in the method are established methods for concentrating the sample. The detection limits of these techniques are well below the proposed standard.

Comment: A commenter (A-90-19: IV-D-87) noted that some compounds are not amenable to gas chromatographic analysis, and some adsorbents cannot be thermally desorbed and trapped efficiently. The same commenter stated that it would be difficult to analyze all the compounds in some samples with one analytical technique.

Response: The EPA structured the analytical portion of the method to be applicable to all types of analytical techniques, not just gas chromatography. If an adsorbent is used, solvent desorption is an option in the method, not just thermal desorption. Finally, there are no restrictions in the method for the number of analytical techniques to be utilized per sample. The wide variety of compounds, their various

chemical and physical properties, preclude the EPA from listing a single sampling and analysis technique. As long as acceptable recovery efficiency is demonstrated, the sampling and analytical technique may encompass any of a wide variety of different techniques currently available.

Comment: Two commenters (A-90-19: IV-D-32; IV-D-77) asked for guidance on how to handle the contents of the water knockout trap.

Response: Due to the wide variety of target compounds (in terms of chemical and physical properties), the EPA did not specifically require analysis of the water in the knockout trap. Many compounds are soluble in water, thus requiring analysis of the trap contents. The analytical technique will depend on whether the recovery efficiency criteria can be met without analyzing the water in the knockout trap.

Comment: A commenter (A-90-19: IV-D-77) noted that the method contained no instructions for sorbent and trap preparation prior to analysis.

Response: The EPA developed this method in order to provide flexibility to the user in choosing, preparing, and analyzing the analytical system. Therefore, one sorbent preparation technique is not adequate for addressing the dozens of sorbents currently available or under development. The method requires that the user be knowledgeable about sorbent sampling techniques in order to be able to meet the recovery criteria required in the method.

Comment: A commenter (A-90-19: IV-D-92) states that no test data are available to determine if the test method results are realistic. The commenter (A-90-19: IV-D-92) further states that the test method is cumbersome, difficult and expensive to use, and that test results are difficult to duplicate.

Response: The EPA developed this method as a relative measure of the emission potential of waste. This method, as its screening method counterpart Method 25D, were developed over a 7-year period with ongoing laboratory and field studies. The EPA has conducted studies on actual and

synthetic waste samples with Method 25D (the screening method counterpart to Method 305) and has found good precision when analyzing replicate samples. As to the difficulty and expense of the method, the regulation provides the option of validating an alternative procedure with Method 301 and correcting the results with the appropriate $f_m$ values.

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16. ABSTRACT

A final rule for the regulation of emissions of organic hazardous air pollutants (HAP's) from chemical processes of the synthetic organic chemical manufacturing industry (SOCMI) is being promulgated under the authority of sections 112, 114, 116, and 301 of the Clean Air Act, as amended in 1990. The emission standards were proposed in the Federal Register on December 31, 1992 (57 FR 62608). Public hearings were held. A supplemental notice was published in the Federal Register on October 15, 1993 (58 FR 53478). This volume of the background information document summarizes all comments and presents the agency's responses on recordkeeping, reporting, compliance, and test methods.

17. KEY WORDS AND DOCUMENT ANALYSIS

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| Air pollution<br>Pollution control<br>SOCMI<br>Hazardous air pollutant<br>National impacts | Air pollution control | |

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