

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 hearings 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 hearings regarding the technical and policy issues associated with the applicability, national impacts, and general issues in the proposed rule and

supplemental notice, along with responses to these comments, are summarized in the following chapters. The comments that were submitted regarding the selection of the source category are summarized in chapter 2.0 and the selection of source are summarized in chapter 3.0. The comments that were submitted regarding the selection of pollutants are summarized in chapter 4.0. In chapters 5.0 and 6.0 the EPA addresses issues concerning the selection of the rule and coordination with other CAA requirements. Chapter 7.0 presents discussion of national impacts issues, and miscellaneous issues are covered in chapter 8.0. The summary of comments and responses serves as the basis for the revisions made to the NESHAP between proposal and promulgation.

2.0 SELECTION OF SOURCE CATEGORY

Comment: Several commenters (A-90-19: IV-D-32; IV-D-57; IV-D-69; IV-D-110) supported regulating SOCFI as a single source category. Two of the commenters (A-90-19: IV-D-32; IV-D-57) pointed out that the designation of the SOCFI as a single source category is consistent with the EPA's statutory intent and the agency's past treatment of the SOCFI. One commenter (A-90-19: IV-D-74) supported the EPA's decision to develop MACT regulations on a category basis and to define source as relating only to specific processes at a plant site. One commenter (A-90-19: IV-D-32) asserted that the EPA's decision to aggregate SOCFI facilities will not result in significant reduction in stringency, because the technology used to control different types of volatile organics is similar. On the contrary, two commenters (A-90-19: IV-D-32; IV-D-57) clarified that establishing the SOCFI as a single source category will result in greater emissions reductions because major sources will be regulated sooner and the installation of control equipment will be accelerated. One commenter (A-90-19: IV-D-58) elaborated that separating SOCFI processes into categories, and defining floors for these categories, would have delayed release of the HON. The commenter (A-90-19: IV-D-58) affirmed that the EPA fulfilled the schedule and the requirements of the Act by regulating SOCFI processes under the HON. Two commenters (A-90-19: IV-D-32; IV-D-57) stated that even if the SOCFI remains a single source category for purposes of the HON, the EPA will

retain the authority to subdivide the SOCMCI source category as appropriate in other contexts.

Response: The EPA appreciates the commenters' support.

Comment: One commenter (A-90-19: IV-D-63) objected to the HON being applicable to a SOCMCI process unit at a plant site that is a non-SOCMI major source. The commenter (A-90-19: IV-D-63) alleged that this conflicts with the other Act regulations and MACT standards. As an example, the commenter (A-90-19: IV-D-63) cited that a refinery site that is a major source due to its refinery operations could be subject to the HON for the SOCMCI portion of the plant. The commenter (A-90-19: IV-D-63) suggested that for integrated facilities, MACT for the predominant source category should be applied to the entire plant to avoid confusion of applying multiple standards for the same plant site.

Response: The HON applies to CMPU's that: (1) produce one or more SOCMCI chemicals; (2) use or produce one or more organic HAP's; and (3) are located at a plant site that is a major source. The definition of "major source" in section 112(a) of the Act includes sources "located within a contiguous area and under common control" with emissions of 10 tpy or more of any HAP or 25 tpy or more of a combination of HAP's. Accordingly, if a plant site is a major source, the HON applies to the HAP-emitting SOCMCI processes. The applicability of the HON to the SOCMCI portion of the plant site is not limited by the principal activity at the site. For example, while the ensuing MACT standards for petroleum refineries would apply to a refinery plant site, the portion of the plant that produces one or more of the SOCMCI chemicals as single chemical products (rather than a mixture) would be subject to the HON. This is consistent with the intent of the Act to regulate categories of HAP emissions.

2.1 SPECIFIC CHEMICAL PRODUCTION PROCESSES

2.1.1 Ethylene Processes

Comment: Several commenters (A-90-19: IV-D-34; IV-D-73; IV-D-77; IV-D-101; IV-D-113) supported the EPA's applicability determination for ethylene processes. Several commenters (A-90-19: IV-D-34; IV-D-73; IV-D-77; IV-D-101) stated that ethylene processes differ significantly from SOCFI processes. One of the commenters (A-90-19: IV-D-101) described differences in equipment size and reaction temperature. One commenter (A-90-19: IV-D-77) pointed out that ethylene processes contain several pressurized gas streams and cryogenic streams that make the process essentially totally enclosed. Another commenter (A-90-19: IV-D-101) added that, whereas SOCFI operations tend to have consistent feed stock and product compositions, the variety of feedstocks for ethylene production results in effluent streams containing hundreds of components at widely varying concentrations.

One commenter (A-90-19: IV-D-77) stated that fugitive emissions from ethylene processes are different than SOCFI fugitive emissions and should not be subject to the requirements of subpart H of the HON. One commenter (A-90-19: IV-D-19) recommended that §63.160(e) of the proposed rule should be revised to specifically exempt ethylene plants from subpart H. One commenter (A-90-19: IV-D-77) pointed out that sources of wastewater in the process are already essentially meeting a different MACT standard through the Benzene Waste NESHAP. One commenter (A-90-19: IV-D-73) stated that adequate information is not available to support development of MACT standard for ethylene processes at this time. Another commenter (A-90-19: IV-D-101) also pointed out that the EPA did not evaluate ethylene processes in the HON impacts analysis. The commenter (A-90-19: IV-D-101) concluded that, because the key differences between ethylene and typical SOCFI processes relate directly to control technology effectiveness

and costs, the HON cannot establish MACT for ethylene processes. One commenter (A-90-19: IV-D-73) stated that the complexity and the variability of the streams and the differences between ethylene processes and SOCFI processes should be evaluated in the development of a MACT standard for ethylene processes.

Response: The EPA agrees with the commenters. As stated in §63.100 of the proposed and final rule, ethylene processes are not subject to the HON.

Comment: One commenter (A-90-19: IV-D-101) recommended modification of the definition of "ethylene process" in the proposed rule. The commenter (A-90-19: IV-D-101) clarified that the definition could be potentially construed not to encompass the entire ethylene production process. The commenter (A-90-19: IV-D-101) added that the definition could be misinterpreted to include pretreatment processes only, and not subsequent extraction, separation, and purification.

Response: Ethylene is produced along with a mixture of hydrocarbons, depending on the raw material feedstock. These co-produced hydrocarbons are separated to produce commercially viable ethylene. The separation of propylene, C₄ products, pyrolysis gasoline, and pyrolysis fuel oil from ethylene is part of the CMPU for producing ethylene. Further treatment of the C₄ fraction and pyrolysis gasoline yields butadiene and aromatics that are on the list of SOCFI chemicals. These downstream treatment processes are not part of "ethylene processes," and will be regulated by the HON.

The definition of "ethylene process" in §63.101 has been revised as follows:

Ethylene process or ethylene process unit means a CMPU in which ethylene and/or propylene are produced by separation from petroleum refining process streams or by subjecting hydrocarbons to high temperatures in the presence of steam. The ethylene process unit includes the separation of ethylene and/or propylene from associated streams such as a C₄ product, pyrolysis gasoline, and pyrolysis fuel

oil. The ethylene process does not include the manufacture of SOCFI chemicals such as the production of butadiene from the C₄ stream and aromatics from pyrolysis gasoline.

2.1.2 Phthalate Esters

Comment: Two commenters (A-90-19: IV-D-33; IV-D-84) urged the EPA to regulate emissions from production of all phthalate esters under one rule. One commenter (A-90-19: IV-D-84) stated that the production process for all phthalate esters is very similar and facilities may manufacture both SOCFI and non-SOCFI phthalate esters with the same equipment. The commenter (A-90-19: IV-D-84) concluded that permitting and compliance activities would be more efficient if production of all phthalate esters were regulated under the same rule. The commenter (A-90-19: IV-D-84) pointed out that the list of SOCFI chemicals in the proposed HON contains some, but not all, of the commercially important esters. Two commenters (A-90-19: IV-D-33; IV-D-84) also stated that production of phthalate esters, including the ones listed in the proposed HON, would be regulated under a separate source category called "Phthalate Plasticizer Production," thus causing duplicative or conflicting requirements. The two commenters (A-90-19: IV-D-33; IV-D-84) stressed that because HAP emissions from phthalate ester production are low, postponing regulation of phthalate esters would not forestall significant HAP emission reductions. One of the commenters (A-90-19: IV-D-33) advised that because the phthalate ester business is highly competitive, the regulation of some phthalate esters now would have a significant bearing on which phthalate esters a customer would select. For these reasons, two commenters (A-90-19: IV-D-33; IV-D-84) specifically suggested that the EPA either (1) include the remaining phthalate esters in the final HON rule or (2) exclude phthalate esters from the SOCFI source category and regulate production of all phthalate esters under a subsequent rule.

One commenter (A-90-19: IV-D-33) preferred removing phthalate esters from the HON and regulating them later as the "Phthalate Plasticizer Production" source category.

Response: The EPA agrees that certain chemicals included in the SOCFI list are primarily used as building blocks for manufacturing plasticizers. The EPA also agrees with the commenters that these chemicals will likely be covered by a future section 112 standard for "Phthalate Plasticizer Production." Accordingly, nine chemicals were deleted from the list of SOCFI chemicals in table 1 of subpart F of the final rule. The chemicals that were deleted are butyl benzyl phthalate, diallyl phthalate, dibutoxy ethyl phthalate, diethyl phthalate, diisodecyl phthalate, diisooctyl phthalate, dimethyl phthalate, di(2-methoxyethyl) phthalate, lead phthalate [, dibasic]. The EPA felt it would be inappropriate to include them under the HON.

2.1.3 Consolidation of SOCFI List

Comment: One commenter (A-90-19: IV-D-33) suggested deleting non-SOCFI products from the list of chemicals under §63.105 (subpart F) and §63.184 (subpart H) of the proposed rule. Two commenters (A-90-19: IV-D-33; IV-D-69) suggested simplifying the determination of applicability by making the lists in subparts F and H identical. One commenter (A-90-19: IV-D-33) suggested transferring those SOCFI chemicals not on the subpart F list from the subpart H list, deleting the subpart H list, and referring all applicability issues to the subpart F list only. Two commenters (A-90-19: IV-D-34; IV-D-69) reasoned that for applying MACT controls to the SOCFI source category, the list of chemicals should be identical for all portions of the regulation.

One commenter (A-90-19: IV-D-32) stated that in §63.105 of proposed subpart F, at least eleven chemicals were listed with incorrect CAS numbers. The commenter (A-90-19: IV-D-32) asserted that for dodecyl phenol (branched) which is listed

with a CAS number 0013, the correct CAS number should have been 74499-35-7. The commenter (A-90-19: IV-D-32) did not list other chemicals with wrong CAS numbers. Other commenters (A-90-19: IV-D-33; IV-D-34) identified chemicals under proposed §§63.105 and 63.184 that were listed with wrong CAS numbers or were duplicate entries.

Response: In the proposed rule, there were two lists of SOCMCI chemicals. One listed chemicals that would be subject to subpart G and the other listed chemicals that would be subject to subpart H. The lists differed because the subpart H list had been agreed to by the negotiating committee before all technical analyses were complete.

The EPA agrees with the commenters that applicability of the rule will be clearer if there is only one list of SOCMCI chemicals. Thus, the EPA has combined the two lists and placed the resulting list in table 1 of subpart F of the final rule. In combining the lists, the EPA used the list in subpart F of the proposed rule as a starting point, because it represented changes resulting from technical analyses made prior to proposal. Because of the negotiated agreement, these changes could not be made to the subpart H list prior to proposal. The following changes were made to table 1 of subpart F of the final rule. First, xylidene and methyl isobutyl ketone were added to the list. Although these two chemicals were on the proposed list in subpart H, they had been mistakenly deleted from the subpart F list prior to proposal.

Second, dodecanedioic acid was added to table 1 of subpart F of the final rule. This chemical was listed in the Act as a separate source category. The EPA has decided that it is more appropriate to regulate the production of dodecanedioic acid as part of the HON. In the future, this entry will be removed from the source category list in the Act.

Third, crotonaldehyde was deleted from the proposed list because it is no longer produced in the United States.

Fourth, cyanofornamide was deleted from the proposed list. Although this chemical is listed on the Spalte trees as being part of the SOCFMI, it was not a part of the HON impacts analysis because the EPA was not able to determine whether it is currently made in the United States. Cyanofornamide was not on the proposed subpart H list and should have been deleted from the proposed subpart F list. This oversight has been corrected in the final rule.

Fifth, as described elsewhere in this section, the EPA deleted ethane and phthalate esters.

The remaining changes to the SOCFMI list were corrections of CAS numbers and misspellings, elimination of duplicate entries, and addition of synonyms for clarification. The EPA appreciates the commenters' input on the errors in the list of SOCFMI chemicals. The errors pointed out by the commenters, and other inconsistencies that surfaced in subsequent review of the list, have been rectified and all changes incorporated in the final rule. However, the EPA clarifies that the correct CAS number for dodecyl phenol (branched) is 121158-58-5. The CAS number given by the commenter (74499-35-7) applies to tetrapropenyl derivatives of phenol.

Comment: One commenter (A-90-19: IV-D-34) questioned the EPA's intent to include ethane on the list of SOCFMI chemicals in §63.105 of proposed subpart F. Two commenters (A-90-19: IV-D-34; IV-D-77) recommended removing ethane from the list. One commenter (A-90-19: IV-D-34) stated that ethane is purified as a feedstock for ethylene processes that are intended to be regulated under a different source category. The commenter (A-90-19: IV-D-34) asserted that, although ethane is formed in the reaction section of olefin units, the ethane is consumed within those olefin units. The

commenter (A-90-19: IV-D-34) clarified that ethane that is exported from olefin units to SOCOMI units is incidental.

One commenter (A-90-19: IV-D-77) expressed that ethane is apparently listed on the basis of being a by-product of the Bayer Anthraquinone process that manufactures anthraquinone, a SOCOMI chemical, as an intended product. The commenter (A-90-19: IV-D-77) added that, ethane being a reaction intermediate of ethylene production, the listing of ethane could confuse the exclusion of ethylene processes from the HON.

Response: The EPA agrees that ethane production should not be regulated by the HON. The main commercial source of ethane is natural gas, and ethane is used for the production of ethylene by thermal cracking or pyrolysis. Ethane occurs as a mixture with other hydrocarbons in natural gas, and separation of ethane as a single chemical product is not known. Synthesis of ethane or other use of ethane on a commercial scale is not known. The HON data base for the SOCOMI does not show ethane as a primary product of any of the SOCOMI processes but rather, as the commenter stated ethane is shown as being produced only as a by-product of the Bayer process. Further, ethane is not a HAP. Accordingly, ethane has been deleted from the list of SOCOMI chemicals in the final rule.

Comment: One commenter (A-90-19: IV-D-95) asserted that the list of SOCOMI chemicals in §63.105 of the proposed rule incorrectly suggested that all of the approximately 60,000 chemicals are subject to the proposed HON rule. To avoid confusion and ambiguity, the commenter (A-90-19: IV-D-95) suggested using "List of Selected SOCOMI Chemicals," "List of Certain SOCOMI Chemicals," or "List of Regulated SOCOMI Chemicals," to refer to the chemicals listed under proposed §63.105.

Response: The preamble to the proposed HON clearly mentioned that subpart F listed 396 chemicals to define the SOCMCI source category. The proposed preamble also clarified that the selection of those 396 chemicals was based on the emissions of organic HAP's and information in the literature. As described above, additional technical analysis after proposal indicated that 14 chemicals should be deleted from the list in subpart F and 3 chemicals should be added. The final rule contains a list of 385 chemicals that the EPA has determined to define the SOCMCI source category. Section 63.100(b) of the final subpart F states that a CMPU must meet all three of the following criteria in order to be subject to the HON: (1) produce one or more of the 385 SOCMCI chemicals; (2) use or produce one or more organic HAP's; and (3) be located at a plant site that is a major source. The HON, therefore, adequately clarifies that production of chemicals other than those listed in table 1 of subpart F in the final rule are not subject to the HON.

2.2 OTHER INDUSTRIAL ACTIVITIES

Comment: Several commenters (A-90-19: IV-D-9; IV-D-118; IV-D-124; IV-D-125; IV-F-7.39 and IV-F-12) recommended broadening the applicability of the HON. A number of commenters (A-90-19: IV-D-41; IV-D-49; IV-D-56; IV-D-85; IV-D-94; IV-D-99; IV-D-118; IV-D-124; IV-F-7.27 and IV-F-10; IV-F-7.42) alleged that the proposed HON allowed too many exemptions. One commenter (A-90-19: IV-D-41) stated that the exemptions may raise complex legal debates and increase the requirement for agency inspections. One commenter (A-90-19: IV-D-125) alleged that these exemptions are contrary to Congressional intent. One commenter (A-90-19: IV-D-99) added that these exemptions may allow the emissions of high risk chemicals at unacceptable levels. One commenter (A-90-19: IV-D-56) alleged that the HON exempted process and storage equipment that are in HAP service but are not involved in the

production of SOCOMI chemicals. One commenter (A-90-19: IV-D-103) alleged that the HON seems to exclude the releases of chemicals that are not the intended product. One commenter (A-90-19: IV-F-7.39 and IV-F-12) stated that the Congress intended to require regulation of all emission points at major sources except those that are specifically slated for coverage in subsequent rules.

One commenter (A-90-19: IV-D-41) urged that the EPA should provide the basis for concluding that other kinds of emission points are not significant sources of HAP's. The commenter (A-90-19: IV-D-85 and IV-F-12) stated that these unregulated emissions are significant. The commenter (A-90-19: IV-D-85) asserted that the proposed HON does not include an analysis of the possible impacts from high-risk pollutants escaping controls and suggested that streams emitting high-risk pollutants (e.g., ethylene oxide) should not be eligible for exemption.

One commenter (A-90-19: IV-D-9) contended that the emissions from the exempted emission points will exceed those from some source categories to be regulated in future standards. Four commenters stated that the exemptions will make the HON weaker than existing rules such as NSPS and many RACT standards (A-90-19: IV-D-85 and IV-F-12); State and local standards (A-90-19: IV-D-99); and smog control regulations (A-90-19: IV-D-9; IV-D-125). One commenter (A-90-19: IV-D-99) asserted that the exemptions remove the incentive to seek out pollution prevention measures. Two commenters (A-90-19: IV-D-9; IV-D-125) claimed that the exemptions provide an incentive to disaggregate emissions in order to escape regulation.

One commenter (A-90-19: IV-D-85) suggested including non-major sources in the HON to prevent future plants from escaping regulations through fragmentation. The commenter (A-90-19: IV-D-85) suggested requiring a demonstration of

technological infeasibility and a petition for inclusion in subsequent rulemaking for exempting a source of HAP emissions associated with SOCOMI production. The commenter (A-90-19: IV-F-12) urged that the EPA should design a procedure to ensure that all processes not regulated by the HON are picked up in subsequent rulemaking. The commenter (A-90-19: IV-F-12) clarified that the EPA should also consider applying the subpart G provisions to butadiene and other processes addressed only in the equipment leak provisions.

Response: The Act directs the EPA to promulgate standards for source categories. The applicability of the HON was drafted to include all operations that belong to the SOCOMI source category, and to distinguish between SOCOMI processes and those intended to be included in the regulations for other source categories. The concerns expressed by the commenters may be due to a misunderstanding of the scope of the HON. More specifically, the HON would provide comprehensive coverage of the emissions of certain organic HAP's from five kinds of emission points in SOCOMI production processes which are part of major sources under section 112 of the Act.

In previous rulemakings, the EPA has generically grouped process equipment, based on the emission mechanism, into kinds of emission points. The EPA is considering regulating emission points belonging to other source categories in future section 112 standards. The EPA does not have the required information, at this point in time, to include area sources in the HON. Regulating area sources in the SOCOMI will be considered when adequate information is available on the existence of area sources and the health risks posed by them. With this approach, the EPA is complying with Congressional intent for regulating the SOCOMI source category. Including too many emissions points not related to SOCOMI is

inappropriate, and would make implementation of the HON an insurmountable task.

2.2.1 Petroleum Refining

Comment: Two commenters (A-90-19: IV-F-7.27 and IV-F-10; IV-F-7.45) stated that petroleum refinery processes should be covered by the HON. Several commenters (A-90-19: IV-D-9; IV-D-118; IV-D-124; IV-D-125) stated that the HON should regulate as many petrochemical processes as possible. On the contrary, three commenters (A-90-19: IV-D-64; IV-D-73; IV-D-113) supported the exclusion of petroleum refineries from the HON. One commenter (A-90-19: IV-D-113) reasoned that the exclusion simplifies administrative procedures for refineries and enforcement of the upcoming refinery MACT rule. Four commenters (A-90-19: IV-D-9; IV-D-118; IV-D-124; IV-D-125) added that batch processes in petrochemical plants should be regulated by the HON or future rulemaking.

One commenter (A-90-19: IV-D-113) expressed concern about the ambiguity related to the applicability of the HON to refinery process units that produce SOCFI chemicals. One commenter (A-90-19: IV-D-58) concurred that refinery units manufacturing a single SOCFI chemical product should be subject to the HON. One commenter (A-90-19: IV-D-92) supported the exclusion of refinery processes that produce feedstocks to SOCFI plants.

Response: The list of categories of major and area sources was published [57 FR 31576] to comply with the requirements of section 112(c) of the Act. A category of sources is a group of sources having some common features suggesting that they should be regulated in the same way and on the same schedule. Thus, for example, the HON fulfills Congressional intent by setting MACT for the SOCFI source category. A large plant or facility, such as a refinery, would clearly be a major source, but would also comprise multiple source categories in addition to the Petroleum

Refineries source category that will include catalytic cracking (fluid and other) units, catalytic reforming units, and other sources not distinctly listed. Other source categories that will potentially be present at a refinery site include the SOCFI, Industrial Process Cooling Towers, Process Heaters, Industrial Boilers, etc.

Although petroleum refinery processes are specifically excluded from the HON, the EPA has included in the HON those CMPI's in the refinery that produce individual SOCFI chemicals. Examples of these facilities include the Aromex unit producing BTX; the hexane unit; and the cyclohexane unit. The existence of multiple source categories at a large plant site is not unexpected, and the EPA is aware of potential situations where the applicability may not be clear based on the source category descriptions given in the BID for development of the source category list. In the final rule, the EPA enhanced the procedure for determining primary product and assigning storage tanks, transfer racks, and distillation units that are part of integrated processes. The EPA feels that these and other clarifications in the final HON rule and the applicability sections of future MACT standards will eliminate the confusion.

Comment: Several commenters (A-90-19: IV-D-55; IV-D-64; IV-D-67; IV-D-73; IV-D-89; IV-D-92; IV-D-97) suggested that SOCFI chemicals produced in a petroleum refinery for fuel blending should not be subject to the HON. As an example, two of the commenters (A-90-19: IV-D-89; IV-D-92) cited that MTBE and toluene produced in the refinery are used solely in fuel blending, and should be excluded from the HON. Two commenters (A-90-19: IV-D-73; IV-D-97) suggested excluding from the HON production of MTBE in a petroleum refinery solely for use in motor gasoline. Several commenters (A-90-19: IV-D-55; IV-D-67; IV-D-91; IV-D-97) reasoned that MTBE units are an integral part of petroleum refinery processes meeting the

requirement of oxygenated fuels, and should be subject to the ensuing refinery MACT standards. However, one commenter (A-90-19: IV-D-97) suggested that units producing MTBE for sale off-site or for feed to another chemical process should be considered a SOCFI unit.

Several commenters (A-90-19: IV-D-55; IV-D-58; IV-D-64) stated that refinery units (such as MTBE) used solely to meet oxygenated fuel requirements could be regulated under the HON or the future refinery MACT standard at the discretion of the facility. One commenter (A-90-19: IV-D-58) added that there is a precedent, in the equipment leak provisions under subpart H, whereby facilities could choose either the HON or the refinery MACT for MTBE unit applicability. The commenter (A-90-19: IV-D-58) stressed the need for flexibility in the compliance requirements for MTBE since these units provide a substantial portion of the oxygenated fuel requirements that reduce emissions from mobile sources.

Two commenters (A-90-19: IV-D-64; IV-D-67) asserted that MTBE produced in a petroleum refinery for fuels is less pure than that produced in a SOCFI plant. One of the commenters (A-90-19: IV-D-64) clarified that the difference in purity is due to the differences in producing isobutylene, which is a raw material for the manufacture of MTBE. The commenter (A-90-19: IV-D-64) clarified that while the isobutylene in a refinery comes from catalytic cracking, the same is produced in SOCFI plants by steam cracking saturated hydrocarbons or by converting butanes to isobutylene of higher purity. Another commenter (A-90-19: IV-D-67) added that refinery-grade MTBE is produced from butylene feedstock from FCCU and coking units that do not have to meet a specific product quality criteria, because the MTBE is used within the refinery and is not sold as a product. However, the commenter (A-90-19: IV-D-67) stated that MTBE in SOCFI plants is sometimes produced from purchased butylene feedstock and is intended to be sold as a

pure product. One commenter (A-90-19: IV-D-64) claimed that due to the lower concentrations in refinery streams, MTBE emissions from refineries will be lower than those from SOCOMI plants, if the same reference control technology were applied. The commenter (A-90-19: IV-D-67) asserted that the HON should apply only to those MTBE plants that are not part of petroleum refineries.

Two commenters (A-90-19: IV-D-55; IV-D-67) mentioned that the controls installed at existing MTBE units in refineries could be different from those installed at SOCOMI units. One commenter (A-90-19: IV-D-67) expressed concern that control equipment required by the HON for MTBE units might not be compatible with requirements of the upcoming refinery MACT standard. One commenter (A-90-19: IV-D-55) urged that the determination of controls for the best performing units should be based on similar units, and concluded that a separate determination for refinery MTBE units would be justified.

One commenter (A-90-19: IV-9-73) alleged that covering MTBE units under the HON could subject the entire refinery vent system and wastewater collection and treatment system to HON requirements. The commenters (A-90-19: IV-D-73) asserted that the EPA had not considered the costs of such a situation.

Response: Toluene is produced as a pure product of Aromex units in the refinery. Although part of the toluene produced is blended with gasoline, it is typically shipped off-site as a product. The production of toluene is, therefore, a SOCOMI process subject to the HON.

Although MTBE is produced in the refinery to meet the demand for oxygenated fuels, small volumes of MTBE are known to be decomposed to regenerate purified isobutylene for use in making butyl rubber. Other minor uses include chromatographic solvent, especially in high performance liquid chromatography, and therapeutic use. The EPA's data base for the petroleum

refinery source category indicates that MTBE is generally produced as a pure chemical, with purity up to 100 percent by weight as MTBE. Production of high purity MTBE (98.6% by weight) as bottoms product from the MTBE fractionation has been reported in literature. The EPA intends to regulate such production of SOCOMI chemicals as single chemical products (rather than mixtures). It is worth mentioning at this point that the Petroleum Refineries source category regulates typical refinery operations such as cracking, reforming, etc. engaged in the production of mixtures rather than single chemicals, e.g., gasoline, naphthas, kerosene, jet fuels, distillate fuel oils, residual fuel oils, lubricants, only to name a few. It is inappropriate to regulate MTBE units that meet the demand for oxygenated fuels under the Petroleum Refineries source category, and other MTBE units under the HON. Regulating the same process unit by two MACT standards is administratively cumbersome and technically inappropriate. The production of MTBE, therefore, will remain a SOCOMI process subject to the HON.

Comment: Two commenters (A-90-19: IV-D-58; IV-D-64) suggested that the definition of "petroleum refining process" in §63.101 be revised to include fuel gas. One commenter (A-90-19: IV-D-58) clarified that the proposed revision will help ensure that fuel gas used in refinery processes as a heating fuel is exempt from the HON and included in the refinery MACT standard currently under development.

One commenter (A-90-19: IV-D-64) suggested including hydrogenation and distillation in the definition of "petroleum refining process." The commenter (A-90-19: IV-D-64) also expressed concern that certain solvents could be subject to the HON because of narrow interpretation of the definition. As an example, the commenter (A-90-19: IV-D-64) cited that a refinery process producing solvent hexane by distilling

petroleum naphtha should be subject to the refinery MACT standards and not the HON.

Another commenter (A-90-19: IV-D-113) stated that the definition of "petroleum refining process" should be more comprehensive and include non-fuel, non-lubricant refinery functions.

Response: The definition of "petroleum refining process" was developed through regulatory negotiation by a committee that included representatives from refineries. The definition was intended to include major activities or typical refinery operations. It is not practical to list every refinery activity in the definition. However, fuel gas is a major refinery stream. The definition, therefore, has been modified to include fuel gas and now reads as follows:

Petroleum refining process, also referred to as a petroleum refining process unit, means a process that for the purpose of producing transportation fuels (such as gasoline and diesel fuels), heating fuels (such as fuel gas, distillate, and residual fuel oils), or lubricants..."

The preamble to the proposed HON stated that a "chemical manufacturing process that is located at a refinery and produces one or more of the 396 chemicals as a single product (rather than a mixture) would be considered a SOCOMI process and would be subject to the HON." Accordingly, a process in a refinery in which solvent hexane is produced by distilling petroleum naphtha would be considered a SOCOMI process.

Comment: One commenter (A-90-19: IV-G-10 and IV-G-12) mentioned that in the refinery process scheme for manufacturing phenol, only the phenol unit (which produces phenol and acetone from cumene) would be subject to the HON. The commenter (A-90-19: IV-G-10 and IV-G-12) clarified that other units in the process scheme, e.g., catalytic reforming units (which produce BTX and reformed gasoline), Aromex units (which separate benzene from BTX), and cumene units (which use catalytic condensation of benzene and propylene to yield

cumene) are standard refinery production units and should not be subject to the HON. The commenter (A-90-19: IV-G-10 and IV-G-12) added that cumene units in several refineries swing between the production of cumene and polymerization gasoline, especially in smaller refineries, as an alternative to HF alkylation.

Response: As mentioned in §63.100(e)(2) of the proposed rule and §63.100(j)(2) of the final rule, petroleum refining processes are exempt from the HON. The purpose of petroleum refining processes, as defined in §63.101 of the HON, is to produce transportation fuels, heating fuels, or lubricants. Catalytic reforming is specifically listed in the definition of petroleum refining process. Thus, catalytic reforming is specifically exempt from the HON. It was agreed by the committee developing the negotiated rule for equipment leaks that BTX are not transportation fuels. Although BTX are added to adjust properties of motor gasoline, the bulk of BTX production in refineries is shipped off-site as pure chemical products. The manufacture of BTX in the refinery, therefore, constitutes production of a SOCOMI chemical and the Aromex unit is a SOCOMI unit covered by the HON. The purposes of the cumene unit and the phenol unit are to manufacture SOCOMI chemicals, i.e., cumene and phenol, and are SOCOMI units covered by the HON. Cumene units that swing between the production of cumene and polymerization gasoline, by adjusting the operating conditions to manipulate the degree of fractionation, are subject to the provisions for "flexible operation units" under §63.100(d)(3) of the final rule. The HON would apply only during time periods when the unit is manufacturing cumene.

2.2.2 Marine Vessel Loading

Comment: Several commenters (A-90-19: IV-D-9; IV-D-49; IV-D-70; IV-D-90; IV-D-99; IV-D-100; IV-D-118; IV-D-120; IV-D-124; IV-D-125; IV-F-7.21; IV-F-7.27) stressed that marine

vessel loading should be subject to the HON. One commenter (A-90-19: IV-D-85 and IV-F-7.39 and IV-F-12) suggested including marine loading in the HON unless the EPA establishes an appropriate schedule for promulgating an alternate MACT standard for marine loading. Two commenters (A-90-19: IV-D-41; IV-F-12) stated that the current regulation on VOC emissions from marine loading is inadequate. Two commenters (A-90-19: IV-D-90; IV-D-100) reported that emissions from loading barges and ships are significant and are currently regulated by State air quality programs, such as New Jersey's. Several commenters (A-90-19: IV-D-9; IV-D-118; IV-D-124; IV-D-125) stated that emissions from marine loading are significant and endanger those living in the Gulf coast and the upper east coast region. One commenter (A-90-19: IV-D-120) stated that this is a significant source in Houston. Two commenters (A-90-19: IV-D-70; IV-D-99) stated that exempting emissions from marine vessel loading limits the effectiveness of the HON.

Two commenters (A-90-19: IV-D-70; IV-D-99) stated that the technology to effectively control these emissions is available and use of control devices is justified by the numerous locations and the toxic impacts of these sources. The commenters (A-90-19: IV-D-70; IV-D-99) added that techniques proposed in the HON to control road and rail vehicle loading emissions can be successfully employed to control marine loading emissions.

One commenter (A-90-19: IV-D-70) objected to the control of marine emissions being left up to individual States. The commenter (A-90-19: IV-D-70) expressed concern that some industries would suffer an economic disadvantage because their marine loading is subject to State regulations while industries in other States may not be subject to such controls. The commenter (A-90-19: IV-D-70) stated that it

would be more equitable for the EPA to regulate marine loading on a national level.

Response: The EPA is currently preparing a regulation for marine vessels under Title I of the Act. Although Title I normally applies to emissions of VOC, the EPA has the legal authority under Title I to regulate "any other air pollutant", which could include HAP's. Additionally, marine vessel operations, including loading, will be addressed as a separate source category in a separate Title III rulemaking that the EPA is currently developing. The EPA intends to emphasize that in developing the source category list, the EPA considered not only technical feasibility but also how efficiently emissions could be regulated. For administrative convenience, the Agency maintains a policy of avoiding duplication of regulations and encourages a single rulemaking for a particular source type. Such an approach is more equitable, besides being cost-effective. Further, because marine loading does not necessarily occur at each SOCOMI plant site, including marine loading in the HON would not be appropriate.

2.2.3 Solvent Reclamation

Comment: One commenter (A-90-19: IV-D-77) suggested clarifying in the final rule that solvent reclamation/recycling processes are not subject to the HON. Two commenters (A-90-19: IV-D-26; IV-D-116) stated that the definition of "chemical manufacturing process" should be clarified to specifically exempt solvent reclamation at non-SOCMI sources. One commenter (A-90-19: IV-D-77) stated that under the proposed rule it was not clear whether or not a non-integral solvent reclaiming/recycle process that simply cleans up solvent for recycle, reuse, or sale would be considered "production." One commenter (A-90-19: IV-D-104) added that the HON should clarify that solvent recovery is not manufacturing unless it is part of the process actually

manufacturing the chemical. In this connection, the commenter (A-90-19: IV-D-104) suggested that the 90 percent requirement, as a condition for including a unit operation as an integral part of a chemical manufacturing process, should be dropped. Two commenters (A-90-19: IV-D-26; IV-D-77) added that solvent reclamation was not studied during the development of the proposed rule. One commenter (A-90-19: IV-D-77) mentioned that the EPA intends to evaluate solvent uses under a separate regulation.

One commenter (A-90-19: IV-D-86) suggested exempting from the HON those processes that re-refine or recycle SOCMIs chemicals since no chemical reaction is involved producing SOCMIs chemicals. The commenter (A-90-19: IV-D-86) added that including these facilities in the HON would discourage pollution prevention.

One commenter (A-90-19: IV-D-26) mentioned distillation columns that reclaim xylene used as a clean-up solvent for paint spray guns or as a process solvent for production of a non-SOCMI chemical should be exempt from the HON. Another commenter (A-90-19: IV-D-77) mentioned that solvent reclaiming/recycle processes involving the listed HAP's but receiving contaminated solvents from non-SOCMI processes, such as photographic chemical production processes, should be exempt from the HON. One commenter (A-90-19: IV-D-116) mentioned that solvent recovery from printing presses using inks containing VOC should be exempt from the HON.

Two commenters (A-90-19: IV-D-74; IV-D-108) mentioned solvent recovery from pharmaceutical manufacturing processes should be exempt from the HON. One commenter (A-90-19: IV-D-104) stated that solvent recovery operations are integral to pharmaceutical manufacturing and reduce costs and the generation of wastes. Another commenter (A-90-19: IV-D-108) stated that recovery operations at many pharmaceutical plants often serve a number of processes, and may not meet the

criteria to be considered an integral part of a single chemical manufacturing process. The commenter (A-90-19: IV-D-108) suggested that solvent recovery and recycling operations should be regulated under the source category they support. The commenter (A-90-19: IV-D-108) added that regulating these operations under the HON is not economical, would result in closure of these units, and would increase wastes.

One commenter (A-90-19: IV-D-41) objected to the EPA's exempting solvents from the HON and including them under a different source category. The commenter (A-90-19: IV-D-41) stated that large amounts of HAP emissions may remain unregulated due to the difficulty of developing different MACT standards that would cover all emission points within the SOCFI facility.

Response: In the HON, the term "production" is not necessarily dependent upon chemical reaction. A SOCFI process comprises unit operations used to make physical or chemical changes to process streams. While unit operations such as reactors involve chemical reactions, unit operations such as distillation, absorption, and drying include physical changes. Accordingly, solvent recovery processes involving distillation of SOCFI chemicals could be "manufacturing" under the HON.

The EPA is aware of the confusion on the applicability of the HON to solvent reclamation, recovery, and recycling operations associated with SOCFI and other processes. To resolve this confusion, the EPA introduced a new §63.100(i) in the final rule clarifying the applicability of the HON to distillation units. The new section also details an assignment procedure for distillation units that are part of integrated processes on the same or a different plant site. The commenters are encouraged to apply the assignment procedure in §63.100(i) of the final rule to determine if the

solvent reclamation, recovery, and recycling operations associated with their processes are subject to the HON.

Solvent reclamation, recovery, and recycling operations at hazardous waste TSDF facilities requiring a permit under Subtitle C that are separate entities and not part of a SOCM I CMPU are not covered by the HON. These facilities will be considered for regulation under the TSDF source category.

2.2.4 RCRA Facilities

Comment: Two commenters (A-90-19: IV-F-7.7; IV-F-7.27) objected to the fact that the HON does not apply to RCRA facilities. One of the commenters (A-90-19: IV-F-7.7) alleged that the exclusion of corrective actions at RCRA hazardous waste impoundments was inconsistent.

Response: Emissions from RCRA facilities are regulated by current regulations under other authorities (such as RCRA) for other concerns. Additionally, the solid waste TSDF source category will include facilities that recycle, recover, and refine wastes received from off-site. It is appropriate to regulate RCRA facilities under the industry group Waste Treatment and Disposal and not under the HON.

Comment: Several commenters suggested that specific language be added to the HON applicability provisions to exempt solvent reclamation units operated at TSDF facilities requiring a permit under subtitle C that are not part of a SOCM I process (A-90-19: IV-D-34; IV-D-116); or solvent reclamation, recovery, and recycling operations that are already subject to process vent standards under subtitle C of RCRA, 40 CFR 264, subparts AA and BB or 40 CFR 265, subparts AA and BB (A-90-19: IV-D-74). One commenter (A-90-19: IV-D-74) also suggested exempting solvent reclamation units associated with a non-SOCMI manufacturing process, such as pharmaceutical manufacture. The commenter (A-90-19: IV-D-74) expressed that it would be confusing and duplicative to have units subject to both RCRA and the HON.

However, the commenter (A-90-19: IV-D-74) mentioned that solvent recovery operations associated with SOCFI processes that may not be regulated by RCRA, could be included in the HON.

Response: Coverage by RCRA does not essentially eliminate the requirement to set a section 112(d) standard for these facilities. Where regulations exist for some source categories, the EPA has reviewed and will continue to review that regulatory activity to determine its applicability and consistency with section 112 of the Act. In many cases, it is appropriate to regulate a source under section 112 to accomplish the purpose of controlling HAP's to a level achievable using MACT. Section 63.100(e) of the proposed rule has been revised and the following added to §63.100(j) of the final rule to exclude these facilities:

(6) Solvent reclamation, recovery, or recycling operations at hazardous waste TSDF facilities requiring a permit under 40 CFR part 270 that are separate entities and not part of a SOCFI chemical manufacturing process unit.

2.2.5 Research and Development Facilities

Comment: Several commenters (A-90-19: IV-D-33; IV-D-36; IV-D-50; IV-D-56; IV-D-67; IV-D-73; IV-D-74; IV-D-77; IV-D-86; IV-D-104; IV-D-108) supported the exemption of R&D facilities from the requirements of the HON. Two of the commenters (A-90-19: IV-D-36; IV-D-74) concurred that this exemption is consistent with the Act and recognizes the need for flexibility in operations associated with R&D.

One commenter (A-90-19: IV-D-36) pointed out that R&D facilities are unique as compared to a typical chemical manufacturing process and should be addressed in a separate source category. One commenter (A-90-19: IV-D-73) cautioned that the variability of the operations and lack of data to support a MACT standard at this time would likely result in substantial delay in finalizing a standard and would therefore be counterproductive. Several commenters (A-90-19: IV-D-36;

IV-D-50; IV-D-56; IV-D-77) claimed that the operations at R&D facilities change frequently. For this reason, two commenters (A-90-19: IV-D-50; IV-D-56) concluded that it would be difficult to apply standards to these facilities in a reasonable and consistent manner. Two commenters (A-90-19: IV-D-74; IV-D-104) suggested avoiding a burdensome recordkeeping and reporting scheme when preparing a separate standard for R&D facilities.

One commenter (A-90-19: IV-D-108) stated that the HON is intended to regulate continuous processes and is not suitable for regulating batch processes associated with the R&D of pharmaceutical products. Another commenter (A-90-19: IV-D-77) reasoned that R&D facilities are different from HON processes by their flexible nature and by their frequent operation in batch or semi-batch modes.

One commenter (A-90-19: IV-D-33) provided two examples of R&D facilities with very low emissions of HAP's. One commenter (A-90-19: IV-D-86) stressed that emissions from R&D facilities are low and sporadic, and imposing regulations on this source is not necessary. Another commenter (A-90-19: IV-D-50) stated that State and local programs will effectively regulate emissions from these facilities.

One commenter (A-90-19: IV-D-50) expressed that imposing emission limitations on these facilities would increase the cost and risk of doing R&D in the United States and would place constraints on the innovative process without significant corresponding societal benefits. The commenter (A-90-19: IV-D-50) warned that these constraints would put R&D in the United States at a competitive disadvantage with the rest of the world. One commenter (A-90-19: IV-D-33) reasoned that in today's competitive market, American businesses should be provided with the opportunity of conducting pilot plant activities to develop new products

without being subject to the regulations otherwise applicable to manufacturing processes.

One commenter (A-90-19: IV-D-108) stated that pharmaceutical research is essential for the development of new products, saving lives, sustaining the industry, reducing pollution, and will lead to substantial savings by process and raw materials optimization. One commenter (A-90-19: IV-D-77) added that R&D facilities generally contain state-of-the-art equipment and controls to incorporate contemporary features in their design so the needed experimental data can be generated. One commenter (A-90-19: IV-D-74) stated that R&D facilities enable companies to design manufacturing processes in the most environmentally beneficial manner. The commenter (A-90-19: IV-D-74) added that subjecting R&D facilities to burdensome requirements could hamper such improvements.

One commenter (A-90-19: IV-D-67) suggested revising the definition of R&D facility to specify a *de minimis* production capacity of less than 1,000 Mg/yr consistent with the equipment leak NSPS for SOCOMI (40 CFR part 61 subpart VV).

One commenter (A-90-19: IV-D-77) stated that R&D facilities include pilot plants, such as wastewater treatment plants to evaluate operation strategies, and failure/upset scenarios. The commenter (A-90-19: IV-D-77) suggested that pilot plants should be explicitly included in the definition of R&D facility.

Response: R&D facilities cover a wide range of operations and sizes from bench-scale operations to small scale operating units. The HON definition of R&D facilities was adopted from the statutes and was later modified to include the definition in TSCA. No basis is currently available for specifying a *de minimis* production capacity to define what constitutes an R&D facility. Thus, the HON definition of R&D facility will remain unchanged.

At this point, the EPA has limited information regarding operations of these facilities and appropriate controls. A separate source category covering these facilities will be established at a later date, as required by section 112(c)(7) of the Act.

2.2.6 Accidental Releases

Comment: One commenter (A-90-19: IV-D-41) objected to the exemption of pressure vessels and spills. The commenter (A-90-19: IV-D-41) stated that the rule should address questions such as the frequency of safety valve releases from pressure vessels, quantity of HAP emissions, and controls. The commenter (A-90-19: IV-D-41) also stated that spills are a large source of HAP emissions, and the rule should address prevention, containment, and cleaning up spills.

Response: Accidental releases of chemicals are addressed in section 112(r) of the Act. More specifically, section 112(r) requires facilities to identify hazards that may result from releases, to design and maintain a safe facility, and to minimize the consequences of releases should one occur. The EPA has already proposed a list of regulated substances, and the thresholds and risk management programs for preventing accidental releases of chemicals. These provisions under section 112(r) will not be duplicated in the HON.

Equipment operating under high pressure are not significant sources of emissions. For this reason, these equipment have historically been exempted from regulations and are excluded from the HON, as well. For example, storage vessels designed to operate in excess of 204.9 kPa (29.7 psia) are exempt because these vessels have no measurable emissions. Safety relief valves are regulated by the standards for pressure relief devices under the equipment leak provisions in the HON. Safety valve releases are necessary to avoid undesirable pressure build-up in process equipment. The

regulations require verification that pressure relief valves do not release continuously, and are maintained after each release event.

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3.0 SELECTION OF SOURCE

3.1 DETERMINATION OF MAJOR SOURCE

3.1.1 Potential to Emit

Comment: Several commenters (A-90-19: IV-D-21; IV-D-32; IV-D-48; IV-D-56; IV-D-58; IV-D-63; IV-D-73; IV-D-75; IV-D-82; IV-D-86; IV-D-92; IV-D-98; IV-F-1.6 and IV-F-6) recommended changes to the EPA's definition of "potential to emit." The commenters suggested that the definition should include emission reductions related to SIP's (A-90-19: IV-D-58; IV-F-1.6 and IV-F-6); State-enforced controls (A-90-19: IV-D-75; IV-D-82); State or local requirements (A-90-19: IV-D-48; IV-D-63; IV-D-75; IV-D-98); pollution prevention programs, an EPA-approved permit program, RCRA, or CWA (A-90-19: IV-D-32); the early reduction program (A-90-19: IV-F-1.6 and IV-F-6); the voluntary 33/50 program (A-90-19: IV-D-48; IV-D-63; IV-D-75; IV-F-1.6 and IV-F-6); voluntary reductions incorporated into an operating permit (A-90-19: IV-D-98); and controls technologically incorporated in the design of a source (A-90-19: IV-D-82). Several commenters (A-90-19: IV-D-32; IV-D-58; IV-D-63; IV-D-75; IV-F-1.6 and IV-F-6) stressed that the EPA must continue to encourage voluntary emission reductions and pollution prevention actions. Three commenters (A-90-19: IV-D-58; IV-D-63; IV-F-1.6 and IV-F-6) would support a mechanism for converting voluntary emission reductions and State and local requirements into federally enforceable commitments.

Several commenters (A-90-19: IV-D-21; IV-D-73; IV-D-75; IV-D-83) requested that the EPA eliminate the requirement that

the controls and limitations considered in the determination of potential to emit be federally enforceable. Several commenters alleged that the requirement for controls to be federally enforceable is overly restrictive (A-90-19: IV-D-32; IV-D-58; IV-D-92); too narrow (A-90-19: IV-D-32; IV-D-58; IV-D-75); exceeds the EPA's statutory authority (A-90-19: IV-D-56; IV-D-58; IV-D-92); will limit the possibility of claiming credit for the purposes of evaluating potential to emit (A-90-19: IV-D-63); and will impose bureaucratic burdens and delays impeding the effectiveness of the HON (A-90-19: IV-D-32). Several commenters expressed that the requirement will also result in controlling small sources (A-90-19: IV-D-92); and area sources (A-90-19: IV-D-32; IV-D-48; IV-D-75; IV-D-92); that were never intended to be regulated by the HON.

One commenter (A-90-19: IV-D-98) stated that many States have adequate air toxics programs, and requiring sources to further reduce emissions is redundant and unjustified from a public health perspective. One commenter (A-90-19: IV-K-3) suggested that controls, operational changes or operational limits for which a federally enforceable permit is pending or for which construction is not complete, at the time the HON is promulgated, should be considered federally enforceable. The commenter (A-90-19: IV-K-3) also stated that permits issued by the State should be considered federally enforceable as long as the State has submitted an appropriate permit program to the EPA. Several commenters (A-90-19: IV-D-32; IV-D-48; IV-D-58; IV-D-73; IV-D-83; IV-D-92; IV-F-1.6 and IV-F-6) suggested that all controls in place at a source should be considered.

Three commenters (A-90-19: IV-D-32; IV-D-54; IV-D-82) suggested that fugitive emissions should not be included in the determination of major source. One commenter (A-90-19: IV-D-32) reasoned that no adequate method exists for

quantifying fugitive emissions. Another commenter (A-90-19: IV-D-54) stated that it was not clear whether emissions during delay of repair of equipment would be included. One commenter (A-90-19: IV-D-54) stated that a plant which would not be a major source in the absence of emissions from equipment leaks should not be subject to the provisions of subpart G. The commenter (A-90-19: IV-D-54) added that in the event a plant otherwise excluded from subpart G would be subject to subpart G upon inclusion of emissions from equipment leaks, the provisions of subparts F and H should apply to such sources. The commenter (A-90-19: IV-D-54) clarified that this would not completely exempt HON sources from control since they would still have to comply with subpart H. The commenter (A-90-19: IV-D-54) added that this change would relieve plants with minor point source emissions from the burdensome requirements of subpart G.

Response: Historically, the EPA has based "potential to emit" on "federally enforceable controls." In fact, the EPA has decided to include the definition of "potential to emit" in the General Provisions, instead of defining the term under the subparts for specific source categories. This will ensure overall consistency in the definition of terminology and uniformity in the implementation of section 112 of the Act. Thus, the definition of "potential to emit" is beyond the scope of the HON. The commenters are encouraged to refer to the General Provisions for specific issues on the basis of calculating "potential to emit."

Comment: One commenter (A-90-19: IV-D-32) expressed that the EPA's interpretation of "potential to emit" is too narrow, whereas the statute allows a broader definition which takes into account actual "potential to emit" given all the constraints to which the source is subject.

One commenter (A-90-19: IV-D-21) suggested that the definition of "potential to emit" reflect a reasonable maximum

capacity rather than a theoretical capacity. The commenter (A-90-19: IV-D-21) indicated that there are situations where plants were sized for market conditions that have permanently changed. As an example, the commenter (A-90-19: IV-D-21) referred to the decline in the forest products industry as a factor in his company's having production capacity that they do not expect to ever fully utilize again. The commenter (A-90-19: IV-D-21) suggested that this situation could lead to plant closures since profits based on realistic production levels might not justify the cost of control equipment required based on the higher theoretical capacity.

One commenter (A-90-19: IV-D-86) stated that the determination of major source should be based on actual emissions and not potential emissions. The commenter (A-90-19: IV-D-86) expressed that facilities (batch processors, for example) often overestimate emissions based on a worst case scenario to provide operational flexibility in their permit applications. The commenter (A-90-19: IV-D-86) stated that small plants with actual emissions below the threshold levels should not be subject to the HON.

One commenter (A-90-19: IV-D-51) alleged that the definition of "potential to emit" in the HON appears different from that in past EPA regulations. The commenter (A-90-19: IV-D-51) clarified that "potential to emit" in the proposed HON is based on the maximum capacity of a process with air pollution control equipment in place. The commenter (A-90-19: IV-D-51) suggested that "potential to emit" should be defined as the maximum uncontrolled emissions in the absence of a federally enforceable permit condition that limits such emissions.

Response: The General Provisions define and provide adequate bases for calculating "potential to emit." If a source takes a voluntary limitation on production, a credit may be claimed for calculating "potential to emit" only if the

reduction in emissions is federally enforceable. Past EPA regulations required controls to be federally enforceable for the purposes of determining "potential to emit." The definition suggested by one of the commenters as being "maximum uncontrolled emissions in the absence of a federally enforceable permit condition" is essentially the same as the EPA's historic interpretation of this term. Thus, the definition will not be changed for the purposes of the HON.

3.1.2 Plant Site

Comment: One commenter (A-90-19: IV-D-73) expressed concern that under the proposed definition of "plant site," it might be interpreted that physically distant sites under common control or ownership are considered as one plant site. As an example, the commenter (A-90-19: IV-D-73) mentioned sites miles apart but separated by a very wide public right of way such as a river or a lake. The commenter (A-90-19: IV-D-73) suggested a distance cut-off such as 100 meters to limit the extent of the public right of way considered in this definition.

Another commenter (A-90-19: IV-D-36) stated that the definition of "plant site" seems to include contiguous facilities that have less than a majority of common ownership, a 50/50 ownership for example, and are not under common control. The commenter (A-90-19: IV-D-36) pointed out that the owners of a 50/50 subsidiary are not parent companies per SARA Title III. Several commenters (A-90-19: IV-D-32; IV-D-33; IV-D-36) stated that some SOCOMI plants could lease contiguous or adjoining property to third parties that would operate without any right of control by the lessor, irrespective of the ownership of the land. Two commenters (A-90-19: IV-D-32; IV-D-33) stated that in such cases, the lessee should be responsible for compliance. One of the commenters (A-90-19: IV-D-33) added that there are also contiguous plant sites with different owners, but one operator

who is responsible for controls. One commenter (A-90-19: IV-D-55) mentioned adjacent facilities under common control could have distinctly different operational objectives. Two commenters (A-90-19: IV-D-33; IV-D-36) stated that the definition of "plant site" should not include subsidiary facilities owned by the parent yet not controlled by the parent. One commenter (A-90-19: IV-D-55) mentioned that "plant site" is defined differently in the HON than under the major source definition in section 70.2 of the permit rule. One commenter (A-90-19: IV-D-32) stated that the definition should not include facilities (1) owned by partially owned subsidiaries that are not controlled by the parent; or (2) operations that are owned but not controlled by the parent or the subsidiary.

Several commenters (A-90-19: IV-D-33; IV-D-36; IV-D-92) pointed out that the definition of "plant site" in the proposed HON included contiguous facilities under common ownership, whereas the Act refers only to facilities under common control. Several commenters (A-90-19: IV-D-32; IV-D-33; IV-D-36) suggested deleting the requirement for common ownership from the definition of plant site to be consistent with the Act. One of the commenters (A-90-19: IV-D-33) suggested adding "majority-owned" before "subsidiary" in the definition of "plant site." One commenter (A-90-19: IV-D-55) urged that source categories requiring regulation should be regulated under standards designed for that source category rather than those designed for facilities which happen to be adjacent.

Response: The EPA generally agrees that including "ownership" in the definition of plant site may be inappropriate in situations where the owner is not responsible for operation of the facility and controls thereof. The requirement of "common ownership" has, therefore, been deleted from the definition of "plant site." The EPA is also making

minor revisions to what constitutes "common control" in the definition of "plant site," in view of the many different scenarios related to ownership, leasing, parent entity, and subsidiary. The following constitutes the revised definition:

Plant site means all contiguous or adjoining property that is under common control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

3.1.3 Other Major Source Issues

Comment: One commenter (A-90-19: IV-D-117 and IV-D-7.43) alleged that the determination of major source based on 10 tpy of a HAP is not sufficient to protect public health and the environment. For example, a modeling study performed by the commenter (A-90-19: IV-D-117 and IV-D-7.43) for 1,3-butadiene emissions from a test plant indicated exceedance of the Louisiana Ambient Air Quality Standard by a factor of 2.5. The commenter (A-90-19: IV-D-117 and IV-D-7.43) reported that the modeling study indicated that the residual cancer risk from a 10 tpy source after 98.7% control was greater than 1 in 1,000,000. The commenter (A-90-19: IV-D-117 and IV-D-7.43) concluded that the proposed HON will be unable to achieve the goals of the Act in reducing the emissions of toxic air pollutants, unless certain provisions of the HON are revised to fulfill the goals of the Act.

Response: The EPA maintains that the HON will achieve the goals of the Act by requiring the maximum degree of emission reduction considering cost, non-air quality health and environmental impacts, and energy requirements. The commenter's concerns are best addressed by the risk goals under section 112(f) of the Act. More specifically, if the 10 tpy cut-off for major sources in the SOCFI fail to limit the emissions of 1,3-butadiene below the residual cancer risk level, section 112(f) of the Act would require the EPA to

establish a more stringent standard to prevent an adverse health effect. The residual risk provisions would also ensure an adequate margin of safety. The EPA, however, does not consider the modeling analysis submitted by the commenter to be a valid indicator of the need to redefine major source. The EPA has noticed inappropriate meteorological data and other technical deficiencies in the model run.

Comment: One commenter (A-90-19: IV-D-86) suggested clearly including in the final rule the definitions for the terms "major source", "modification", "major modification", "reconstruction", "source", and "HAP's". The commenter (A-90-19: IV-D-86) added that these definitions should be consistent with the Act, and once defined, should be applied uniformly with exceptions noted. The commenter (A-90-19: IV-D-86) clarified that this approach will help eliminate confusion due to the way the HON qualifies these terms whenever encountered in the regulation.

Response: The definition of the terms "major source," "modification," "reconstruction," and "HAP's" will be included in the General Provisions. Repeating these definitions in the HON would be duplicative and unnecessary. Although the term "source" has not been listed in the definition section of the final HON rule, the EPA has identified in §63.100 of subpart F the emission points that are included in the source. The EPA has also clarified several emission points that are not part of the source.

Comment: One commenter (A-90-19: IV-D-26) suggested clearly mentioning in §63.100(b)(2) that the HON applies only to major sources. The commenter (A-90-19: IV-D-26) stated that this clarification would be consistent with the language provided in the preamble and §63.100(b)(1) of the proposed rule. The commenter (A-90-19: IV-D-26) added that without this clarification, the HON would exceed the statutory authority provided to the EPA under the Act.

Response: The HON applies to SOCM I processes and certain non-SOCMI processes that are located at plant sites that are major sources. The EPA agrees that, while the intent to regulate only major sources in SOCM I facilities is clearly delineated in subpart F, further clarification is needed for the non-SOCMI processes. In the final rule, subpart I has been added to remove the confusion on the applicability of the HON to equipment leaks associated with the non-SOCMI processes. Section 63.190(b) states that subpart I applies only to major sources.

Comment: One commenter (A-90-19: IV-D-33) suggested that the EPA clarify that the definitions of "major source" in section 112(a)(1) of the Act and 40 CFR 70.2 both apply to the HON. The commenter (A-90-19: IV-D-33) mentioned that the definition of "major source" at 40 CFR 70.2 includes stationary source(s) belonging to a single major industrial grouping or having the same two-digit SIC code. The commenter (A-90-19: IV-D-33) asserted that for the purposes of determining SOCM I "major sources", only emissions from the two-digit SIC 28 should be considered.

Response: The two-digit SIC 28 is not included in the definition of "major sources" under the General Provisions. The applicability of the HON is not necessarily limited to CMPU's related to industrial operations classified under the major SIC Group 28: Chemicals and Allied Products. For example, the manufacture of benzene and other solvents in petroleum refineries are included in the major SIC Group 29: Petroleum Refining and Related Industries. These CMPU's belong to the SOCM I source category and are subject to the HON. Including SIC 28 in the definition of major source could, therefore, create inadvertent exclusions from the HON. For the purposes of determining major source (10 tpy of any one HAP and 25 tpy of a combination of HAP's), all HAP emissions should be considered irrespective of the SIC code.

3.2 APPLICABILITY TO AREA SOURCES

Comment: Several commenters (A-90-19: IV-D-21; IV-D-26; IV-D-33; IV-D-51; IV-D-69) reported that there are area sources in the SOCFI source category. One of the commenters (A-90-19: IV-D-21) gave as an example the production of formaldehyde for use in thermosetting resins for the wood products industry. One commenter (A-90-19: IV-D-26) cited as an example the manufacture of peracetic acid by reacting acetic acid with hydrogen peroxide, the manufacture of isopropyl phenol by reacting propylene with phenol, and the manufacture of a pesticide using methylene chloride as a processing aid. One commenter (A-90-19: IV-D-33) provided emissions information pertaining to an area source. One commenter (A-90-19: IV-D-51) knew of five SOCFI facilities that would be considered area sources. Several commenters (A-90-19: IV-D-21; IV-D-26; IV-D-33; IV-D-51) claimed that the full capacity to emit for these facilities would be below 10 tpy of a single HAP and 25 tpy of a combination of HAP's. Two commenters (A-90-19: IV-D-26; IV-D-33) asserted that the area sources pose no adverse health effects.

Two commenters (A-90-19: IV-D-26; IV-D-33) supported exempting area sources from the HON. One commenter (A-90-19: IV-D-51) stated that the impact on overall toxic emissions from SOCFI area sources could not be currently assessed. One commenter (A-90-19: IV-D-33) indicated that given their small size, limited number, and minor impact, additional regulatory burden on area sources would jeopardize their existence and would not yield significant environmental benefits.

One commenter (A-90-19: IV-D-26) noted that the area source program in section 112(k)(3) of the Act does not have sufficient information to regulate the SOCFI, and the EPA was not aware of the existence of area sources in the SOCFI prior to proposal of the HON. The commenter (A-90-19: IV-D-26) added that the EPA has not determined if the SOCFI is one of

the source categories that accounts for 90 percent of the area source emissions of the 30 HAP's that present the greatest threat to public health. Thus, the commenter (A-90-19: IV-D-26) concluded that the EPA has insufficient information to make a finding of adverse health threat or to evaluate an appropriate level of control, should additional control be necessary. The commenter (A-90-19: IV-D-26) urged that, without the specific exclusion of area sources, the rule exceeds the statutory authority provided to the EPA under the Act.

Several commenters (A-90-19: IV-D-32; IV-D-73; IV-D-75) alleged that, although the HON is intended to apply to major sources, area sources will nonetheless be subject to reporting requirements. The commenters (A-90-19: IV-D-32; IV-D-75) clarified that the requirement for area sources to submit an Initial Notification (demonstrating that the source is an area source) is burdensome with insignificant regulatory or environmental benefits. Several commenters (A-90-19: IV-D-32; IV-D-69; IV-D-75) stated that the requirement for an area source to make such negative declaration of applicability is unreasonable.

Two commenters (A-90-19: IV-D-32; IV-D-75) asserted that the reporting requirement conflicts with the applicability criteria of proposed subpart F. The commenters (A-90-19: IV-D-32; IV-D-75) expressed concern that because the requirements for Initial Notification are located near the end of the rule, they may be inadvertently overlooked by owners and operators of area sources who read in proposed §63.100(b)(1)(i) that the HON applies only to major sources. The commenters (A-90-19: IV-D-32; IV-D-75) warned that this dichotomy could lead to unintended and environmentally irrelevant non-compliance by area sources. Several commenters (A-90-19: IV-D-32; IV-D-69; IV-D-73; IV-D-75) suggested deleting the requirement for the demonstration. One commenter

(A-90-19: IV-D-73) suggested that in the event the requirements applicable to area sources are retained, the applicability section must be further clarified. Another commenter (A-90-19: IV-D-32) suggested substituting the requirement for an analysis with a simple statement that the facility is not subject to the HON.

Response: The EPA does not intend to regulate area sources under the HON. In the preamble to the proposed rule, the EPA requested information on any area sources in the SOCFI. One of the purposes of the information request was to identify the number, location, emissions, and adverse health effects associated with these sources in order to determine if a separate MACT standard should be prepared. The other purpose was to enable the EPA to evaluate the possibility of eliminating the requirement for submitting an Initial Notification by area sources. However, information received by the EPA on area sources is too limited, and could not be used to specify the characteristics of area sources.

Section 63.151(b)(1)(vi) of the proposed rule specified that area sources must submit an Initial Notification that would include an analysis demonstrating that the source is an area source. Both major sources and area sources will have to perform such an analysis to determine whether their emissions would be below 10 tpy of a single HAP and 25 tpy of a combination of HAP's. The EPA, therefore, believed the requirement for this one-time notification would not be unreasonable. However, comments on area source notifications were also submitted in response to the proposed General Provisions, and this issue is broader than the HON. The General Provisions address whether area sources are required to submit Initial Notifications. Accordingly, the provision for area sources has been removed from §63.151(b) of subpart G.

3.3 HON PROCESSES AND EQUIPMENT

3.3.1 Definition of "Source"

Comment: Two commenters (A-90-19: IV-D-32; IV-D-57) pointed out that the EPA has the discretion to develop and implement multiple definitions of the term "source" in a way that best reflects the policies and purposes of the Act. Two commenters (A-90-19: IV-D-63; IV-D-86) supported the definition of source as all process vents, storage tanks, transfer racks, wastewater operations, and equipment leaks located at the same plant site, associated with the chemical manufacturing processes in the SOCOMI category. Two commenters (A-90-19: IV-D-72; IV-D-106) supported the EPA's goal in defining the "source" in a way that provides flexibility in compliance. The commenters (A-90-19: IV-D-72; IV-D-106) mentioned that the definition should be specific for the source category being regulated and should be designed to encourage cost-effective compliance strategies. One commenter (A-90-19: IV-D-108) added that the definition of "source" may differ for different categories in order to recognize inherent operating differences.

Response: The EPA thanks the commenters for their support.

Comment: One commenter (A-90-19: IV-D-36) stated that the definition of "source" needs clarification to refer to a chemical manufacturing process as a whole and not the individual equipment within the process. For example, the commenter (A-90-19: IV-D-36) added that without this clarification, a new vent added to an existing storage vessel may be mistaken as a new source. One commenter (A-90-19: IV-D-86) supported the HON definition of "source" but stated that the term needs clarification throughout the HON to avoid misinterpretations. The commenter (A-90-19: IV-D-86) asserted that sometimes the term refers to an entire facility and other times it refers to a single emission point. One

commenter (A-90-19: IV-D-36) suggested duplicating the definition of source from §63.100 in the definitions under §63.101 to avoid such misinterpretations.

Response: The EPA has broad discretion to define source. A source could encompass an entire plant and can be defined as broadly or narrowly as is appropriate for the particular industry being regulated. The EPA appreciates that the definition of source is an important element of the HON because it describes the emission points to which the standards apply. However, the EPA believes that "source" can be more clearly defined in the several paragraphs in §63.100 of the HON. Repeating the definition throughout the HON would not be productive, and would unnecessarily increase the length of the rule. Instead, the EPA has consolidated the definition of source in §63.100 of the revised subpart F. The view expressed by one of the commenters, that addition of a vent to an existing storage vessel would make the vent a new source, is not consistent with the definition of source in the rule.

3.3.2 Definition of "Chemical Manufacturing Process Unit"

Comment: Two commenters (A-90-19: IV-D-7 and IV-D-95; IV-D-32) alleged that the term "chemical manufacturing process" equates process with equipment. The commenters (A-90-19: IV-D-7 and IV-D-95; IV-D-32) recommended changing the term to "chemical manufacturing process equipment," in keeping with the general understanding among chemists that "process" refers to a sequence of chemical reactions, not to equipment.

Response: The definition provided in §63.101 of the proposed rule specifically states that a "chemical manufacturing process" is identified by its product. A specific combination of equipment is required to manufacture the end product from the available raw materials. The HON applies to emission points associated with these equipment. In using the term "chemical manufacturing process," the EPA

intended to convey the above and to facilitate the determination of applicability of the HON. However, in response to the suggestions for additional clarification, the term has been changed to "chemical manufacturing process unit." Accordingly, "styrene unit" would be the process, including all equipment associated with it, to manufacture the chemical styrene. The definition of the term has been changed to read as follows:

Chemical manufacturing process unit means the equipment assembled and connected by pipes or ducts to process raw materials and to manufacture an intended product. For the purpose of this subpart, chemical manufacturing process unit includes air oxidation reactors and their associated product separators and recovery devices; reactors and their associated product separators and recovery devices; distillation units and their associated distillate receivers and recovery devices; associated unit operations (as defined in this section); and any feed, intermediate and product storage vessels, product transfer racks, and connected ducts and piping. A chemical manufacturing process unit includes pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, and control devices or systems. A chemical manufacturing process unit is identified by its primary product.

Comment: Several commenters (A-90-19: IV-D-7 and IV-D-95; IV-D-32; IV-D-34; IV-D-57; IV-D-71) suggested clarification of the term "chemical manufacturing process." Several commenters (A-90-19: IV-D-32; IV-D-34; IV-D-57) alleged that the definition provided in the proposed HON lacks clarity on where the coverage of the HON begins and ends. One commenter (A-90-19: IV-D-71) stressed that defining the boundary of the chemical manufacturing process is important to the correct application of the rule. One commenter (A-90-19: IV-D-57) alleged that defining the term "chemical manufacturing process" as equipment that produces a product, and the term "product" as a chemical that is produced by the process amounts to circular reasoning and falls short of

establishing the boundaries of a chemical manufacturing process.

One commenter (A-90-19: IV-D-36) supported specific provisions in the HON addressing applicability to unit operations. One commenter (A-90-19: IV-D-97) supported the EPA's position that a unit operation which produces a SOCFMI chemical intended for use solely to produce a non-SOCMI chemical is not a SOCFMI unit. One commenter (A-90-19: IV-D-71) suggested modifying the definition of "chemical manufacturing process" to exclude unit operations that produce SOCFMI chemicals in stand-alone units which are used fully as an integral part of the overall chemical manufacturing process that produces as the intended product a non-SOCMI chemical (e.g., plastics). One commenter (A-90-19: IV-D-34) indicated that many chemical manufacturing facilities are extensively integrated without a clear demarcation between the product from one process and the raw material for the next. One commenter (A-90-19: IV-D-36) alleged that the HON leaves confusion regarding what "integral" unit operations are.

Two commenters (A-90-19: IV-D-32; IV-D-34) stated that a chemical manufacturing process that can operate independently if supplied with sufficient fuel, raw materials, and product storage should be considered a separate process.

One commenter (A-90-19: IV-D-32) supported the EPA's decision to exempt unit operations that are an integral part of a chemical manufacturing process that does not produce a SOCFMI chemical. The commenter (A-90-19: IV-D-32) added that this approach is consistent with other MACT standards that are being developed and does not preclude the EPA from regulating these unit operations in the future. However, two commenters (A-90-19: IV-D-32; IV-D-57) stated that the term "integral unit operation" needs clarification in the HON. One commenter (A-90-19: IV-D-32) stated that the requirement for at least 90 percent of the product stream from the unit operation to be

used by the chemical manufacturing process is inappropriate. For example, the commenter (A-90-19: IV-D-32) cited situations where the unit operations recover or purify a HAP material that is used as a solvent or a carrier in a non-SOCMI process, or the HAP is formed as a by-product, co-product or isolated intermediate. Three commenters (A-90-19: IV-D-32; IV-D-33; IV-D-36) suggested that for more clarity, the 90 percent requirement should be deleted. Two commenters (A-90-19: IV-D-32; IV-D-33) claimed that such a change would recognize that the unit operation is only a part of the overall chemical manufacturing process which is producing the intended product.

Two commenters (A-90-19: IV-D-32; IV-D-36) alleged that the regulatory language in the HON is unclear on how to determine the applicability of the rule to unit operations that are shared between two or more chemical manufacturing processes. One commenter (A-90-19: IV-D-32) suggested adopting language similar to that in §63.100(b)(4) and (b)(5) of the proposed rule, which address shared storage vessels and transfer racks. The commenter (A-90-19: IV-D-32) asserted that the "predominant use" approach, mentioned in these sections, correctly ties the unit operation to the chemical manufacturing process based on the "need" for the unit. More specifically, the commenter (A-90-19: IV-D-32) clarified that the chemical manufacturing process that provides the greatest amount of material (mass basis) into the unit operation would have the predominant use. The commenter (A-90-19: IV-D-32) suggested that in situations where the majority of the material is supplied to a unit operation by a chemical manufacturing process that is not located on the same plant site, then the chemical manufacturing process on site that receives the greatest amount of material would determine the predominant use of the unit operation.

Response: The EPA is aware of the confusion surrounding the beginning and the end of a process, especially for integrated process units. The SOCMIs are complicated because the industry is large and complex. In fact, few SOCMIs are alike. For these reasons, the standards and guidelines developed for the SOCMIs are generic in nature, rather than being specific to individual processes. The EPA took this approach because it appeared to be the most efficient and effective way in which to regulate the very large number of different chemicals, processes, and emission points in the SOCMIs.

In the final rule, the term "chemical manufacturing process" has been changed to "chemical manufacturing process unit," and the definition has been modified. The EPA has clarified the provisions in the final rule to simplify the determination of applicability for facilities with integrated operations. The final rule provides a comprehensive assignment procedure for distillation units, storage vessels, and transfer racks that are shared among processes. This assignment procedure is based on the predominant use of the equipment. The clarifications are found in §§63.100(g), (h), and (i) of the final rule.

Comment: Several commenters suggested that the EPA clarify the definition of "chemical manufacturing process" to exclude blending (A-90-19: IV-D-26; IV-D-33; IV-D-34); repackaging, transformations, and other similar operations from the HON (A-90-19: IV-D-33). One commenter (A-90-19: IV-D-33) explained that operations where a finished good is received from a different location and is merely prepared for a customer do not constitute manufacturing. Two commenters (A-90-19: IV-D-26; IV-D-34) noted that blending operations were not studied during development of the proposed rule. As examples of such facilities, one commenter (A-90-19: IV-D-33) cited repackaging a listed product from bulk to smaller

containers in a facility that does not generate the product, and physically changing a listed HAP (not manufactured in the facility) into a different form not involving a chemical reaction. One commenter (A-90-19: IV-D-34) urged that the need for clarity is more important for HAP-containing products that are sold as "plant mixtures" rather than a specific chemical product. Another commenter (A-90-19: IV-D-26) provided information on an example facility that mixes or blends chemicals using pumps and mixers into a commercial product, the principal ingredient of which is a SOCOMI chemical.

Response: Processing of a chemical, as intended in the HON, involves one or more unit operations to change the physical or chemical characteristics of a raw material or an intermediate stream. Mere blending or repackaging of a finished product is, therefore, not a process subject to the HON. The EPA believes that existing language in §63.100(b)(1) and §63.100(b)(2) of the final rule, and the definitions of "chemical manufacturing process unit" and "product" in §63.101 of the final rule adequately clarify the above, and no additional clarification is necessary.

Comment: One commenter (A-90-19: IV-G-4) recommended a change to the definition of "reactor process." The commenter (A-90-19: IV-G-4) expressed concern that the proposed definition could be interpreted to include product treatment in storage tanks. The commenter (A-90-19: IV-G-4) explained that it is common practice to add hydrogen peroxide, sodium borohydrate, or various inhibitors to storage tanks to maintain product quality or stability. The commenter (A-90-19: IV-G-4) claimed that although a minor reaction may take place between the product and the added material, the emissions and control techniques are characteristic of storage tanks. The commenter (A-90-19: IV-G-4) suggested that the definition of reactor process should be clarified to exclude

the addition of materials to product storage tanks for quality or stability.

One commenter (A-90-19: IV-D-77) urged that the EPA should use consistent terminology in describing air oxidation process, reactor process, and distillation operations. The commenter (A-90-19: IV-D-77) suggested referring to these terms as air oxidation unit operation, reactor unit operation, and distillation unit operation. The commenter (A-90-19: IV-D-77) clarified that the word "process" is used for aggregates of unit operations such as "chemical manufacturing process," whereas the term "unit operation" refers to single operating units that compose a process. For example, the commenter (A-90-19: IV-D-77) cited that the term "air oxidation process" should be changed to "air oxidation operation" to better reflect the intent of the rule.

Response: The purpose of a SOCFI process is to synthesize raw materials into a commercially viable chemical product. Chemical additives, used to maintain product quality or stability, do not form part of the chemical reaction that takes place in a reactor and are not subject to the HON. Accordingly, the EPA does not consider it necessary to include the exemption for additives in the definition of "reactor."

The EPA has clearly defined the terms "air oxidation reactor", "reactor", "distillation unit", and "unit operation" in §63.101 of the final rule. Further clarification or alternate terminology is not necessary.

3.3.3 Definition of "Product"

Comment: Several commenters (A-90-19: IV-D-32; IV-D-33; IV-D-74; IV-D-108) suggested revising the definition of "product" to specifically state that by-products, co-products, isolated intermediates, wastes, impurities, trace contaminants, etc., are not considered products. Two commenters (A-90-19: IV-D-51; IV-D-108) clarified that chemicals produced by reclamation, recovery, or recycling

should not be considered products. The commenters (A-90-19: IV-D-51; IV-D-108) also urged that the definition of product should specifically exclude solvents and catalysts used in the process whether they are sold without further processing or are purified on-site. One commenter (A-90-19: IV-D-32) clarified that their proposed revision would address situations where a by-product, co-product, or an isolated intermediate is produced in greater quantity than the intended product. As an example, the commenter (A-90-19: IV-D-32) noted that more acetic acid (a SOCFI chemical) is produced on a mass basis in the production of polyvinyl alcohol (a non-SOCMI chemical). One commenter (A-90-19: IV-D-74) expressed concern that there may be situations in which pharmaceutical manufacturing processes could be interpreted as being subject to the HON because the by-products or recovered wastes could be of greater mass or volume than the intended pharmaceutical product. Another commenter (A-90-19: IV-D-108) clarified with examples that the mass of a pharmaceutical product is often small compared to that of the by-product or co-product due to significant recovery and purification steps involved in producing economic quantities of product with a desired therapeutic value.

Response: The preamble to the proposed HON clarifies that by-products, co-products, and isolated intermediates would not be considered in determining applicability. For example, although acetic acid is a SOCFI chemical and is produced in larger quantities in the manufacture of polyvinyl alcohol, a non-SOCMI chemical, the HON does not apply in this case. However, the manufacture of polyvinyl alcohol, the intended product, will not be excluded from regulation. Rather, it will be regulated under the appropriate source category, e.g., Polymers and Resins. Similarly, a pharmaceutical process cannot be regulated by the HON simply because a SOCFI chemical is produced in larger quantity as a

waste or a by-product. To address this concern, the following clarification has been added to the definition of "product" in §63.101:

Product means a compound or chemical which is manufactured as the intended product of the CMPU. By-products, isolated intermediates, impurities, wastes, and trace contaminants are not considered products.

Determination of the primary product of a CMPU is addressed in §63.100(d) of the final rule. If a CMPU produces more than one product, the primary product is the one with the greatest annual design capacity on a mass basis. If more than one product is produced equally on a mass basis, the primary product is the one listed as a SOCMCI chemical. In the event that more than one product produced equally on a mass basis are listed as SOCMCI chemicals, any one of these chemicals is designated as the primary product.

Comment: Several commenters (A-90-19: IV-D-32; IV-D-33; IV-D-57; IV-D-62; IV-D-68; IV-D-69; IV-D-73; IV-D-75; IV-D-77; IV-D-92; IV-D-110; IV-D-113) (A-90-20: IV-D-19) supported the applicability of the HON being based on identifying the "primary product" or the "intended product." Several commenters (A-90-19: IV-D-32; IV-D-33; IV-D-73; IV-D-75; IV-D-77; IV-D-113) added that determining applicability based on the primary intended product is an improvement over prior rules that included co-products, by-products, and intermediates. One commenter (A-90-19: IV-D-32) asserted that the primary intended product approach will not exclude emission points from regulation, and will actually facilitate regulating emission points by the appropriate MACT standard. Several commenters (A-90-19: IV-D-32; IV-D-62; IV-D-73; IV-D-75; IV-D-77) stated that the "primary intended product" approach will improve the certainty of applicability determinations and will eliminate potential overlaps with other MACT standards.

One commenter (A-90-19: IV-D-32) clarified that because the SOCMCI source category is large and diverse, focusing on what the chemical manufacturing process is meant to produce is more reasonable and will better distinguish between HON sources and those that will be subject to future MACT standards. One commenter (A-90-19: IV-D-69) suggested that the EPA could revise the source category list or create a new category called "not elsewhere classified" for chemical manufacturing processes that use or produce a HAP but would not be included in the HON by the "primary product" approach.

Two commenters (A-90-19: IV-D-62; IV-D-69) stated that chemical manufacturing processes are generally intended to produce one primary product. One commenter (A-90-19: IV-D-32) noted that generally the primary product of a process is obvious and will require little or no special testing or analysis to determine whether a particular source is subject to the HON or not. One commenter (A-90-19: IV-D-33) mentioned that facilities that produce a non-SOCMI chemical as the primary intended product and a SOCMCI chemical as a by- or co-product generate the SOCMCI chemical differently than those that are intended to produce the SOCMCI chemical. The commenter (A-90-19: IV-D-33) also stated that the HON proposal analysis did not include processes that only made SOCMCI chemicals as by-products.

Response: The EPA thanks the commenters for their support.

Comment: One commenter (A-90-19: IV-D-74) suggested that the determination of intended product should include consideration of the commercial value of the materials in addition to the mass of material produced. The commenter (A-90-19: IV-D-74) added that the commercial value of the products should be indicative of the owner's intent. Another commenter (A-90-19: IV-D-108) clarified that a product is

produced for its commercial value and a waste material that is disposed of is not a product.

Response: The purpose of any CMPU is to produce a commercially viable product. Accordingly, commercial value is a clear indicator of the intended product. However, the EPA anticipates difficulty in assessing commercial information on each regulated process, especially those that are protected as confidential business information. Although not mandatory, owners and operators may choose to use information on commercial value, at their discretion, to determine intended product. However, the determination of intended product will still be subject to review and approval by the permitting authority.

Comment: One commenter (A-90-19: IV-D-87) recommended that the first criterion for determining applicability of the HON should be whether a source "produces" any of the SOCOMI chemicals, and not on whether that compound is the "primary product." The commenter (A-90-19: IV-D-87) added that this approach would simplify determination of applicability. One commenter (A-90-19: IV-D-41) objected to the inclusion of intent into the definition of products and co-products stating that too many HAP emissions may escape regulation because they are not the desired chemical output. The commenter (A-90-19: IV-D-41) cited the example in the preamble where a benzene-containing waste is exempt in a divinylbenzene production process. The commenter (A-90-19: IV-D-41) argued that the process produces benzene and should be covered by the HON. Two commenters (A-90-19: IV-D-41; IV-D-85) urged that all HAP emissions should be controlled. One commenter (A-90-19: IV-D-85) reasoned that the intended product should have no bearing on the extent of emissions controls. The commenter (A-90-19: IV-D-85) stated that applicability based on design capacity is questionable since many plants are designed with some flexibility in production in mind.

Response: In previous rules for the SOCM, such as the NSPS for Air Oxidation Unit Processes (40 CFR part 60, subpart III) and for Distillation Operations (40 CFR part 60, subpart NNN), the determination of applicability was based on product, by-product, co-product, or intermediate. The NSPS approach was judged inappropriate as it fell short of distinguishing among categories established under section 112(c) of the Act. In other words, the generic unit operation/ process approach, if incorporated in the HON, would result in significant overlap of the applicability provisions with processes belonging to other source categories--pharmaceuticals, polymers and resins, for example. The primary product approach, used in the HON, is designed to ensure applicability of the section 112(d) standards to appropriate source categories. This facilitates categorization and appropriate regulation for all sources.

3.3.4 Definition of "Impurity"

Comment: Several commenters (A-90-19: IV-D-33; IV-D-34; IV-D-41; IV-D-60; IV-D-92) suggested revising the definition of "impurity". One commenter (A-90-19: IV-D-33) pointed out that the definition of "impurity" in subpart F of the proposed rule is narrower than the clarification provided in the preamble that impurities that are coincidentally processed and are not isolated are not considered to be a product. The commenter (A-90-19: IV-D-33) alleged that the definition of "impurity" in the HON implies that the only impurities present are those produced by the chemical manufacturing process and remain with the product. Three commenters (A-90-19: IV-D-33; IV-D-34; IV-D-69) added that the definition of "impurity" should specify that an impurity may be present in the process raw materials. One commenter (A-90-19: IV-D-33) stated that impurities should include chemicals that are produced coincidentally with the product but serve no useful purpose regardless of whether all of the impurities remain in the

product, by-product, or co-product. One commenter (A-90-19: IV-D-57) requested that the EPA clarify that HAP's produced as contaminants are not co-products or by-products. One commenter (A-90-19: IV-D-33) stated that the definition should be consistent with other regulatory programs.

Response: The definition of impurity in the proposed HON was consistent with the definition provided in the TSCA and SARA 313 regulations. However, in response to the concerns expressed by several commenters, the EPA is modifying the definition in subpart F under §63.101 to read:

Impurity means a substance that is produced coincidentally with the primary product, or is present in a raw material. An impurity does not serve a useful purpose in the production or use of the primary product and is not isolated.

Comment: Two commenters (A-90-19: IV-D-33; IV-D-34) suggested that the exemption for HAP impurities should be clarified in subpart F. One commenter (A-90-19: IV-D-34) reasoned that such a change would reduce the recordkeeping and reporting burden on the industry without affecting emission reductions. Two commenters recommended that the EPA add language to subpart F that if the only HAP present is an impurity, a chemical manufacturing process (A-90-19: IV-D-33) or transfer racks and storage vessels (A-90-19: IV-D-34) would not be subject to the HON. One commenter (A-90-19: IV-D-41) alleged that the definition of "impurity" does not specify a concentration limit and will allow HAP emissions from mixtures to go unregulated.

Response: The HON mentions specific HAP concentration limits for process vents, wastewater, and equipment leaks below which the provisions do not apply. However, the EPA does not have the supporting information to establish a *de minimis* quantity for identifying impurities in storage vessels and loading racks. Clarification has, therefore, been added in §63.100(f)(6) and 63.100(f)(7) of the final rule that storage vessels and loading racks handling liquids containing

HAP's as impurities are not included in the definition of source subject to the HON. It is more prudent for both the regulatory agencies and the sources to focus their efforts and their resources on reducing more significant emissions. Further technical and economic analysis on impurities, and additional clarification is not necessary.

3.3.5 Other Issues

Comment: One commenter (A-90-19: IV-D-64) suggested that the definition of "flexible operation unit" (that included only feedstock changes at proposal) should be broadened to include operating changes (e.g., distillation cut point) to produce different products or to meet different product specifications. The commenter (A-90-19: IV-D-64) called these units "blocked" operations. The commenter (A-90-19: IV-D-64) stated that, because feedstock or operational changes can be so frequent (often one or more times per week), complying with the HON during times when the process is manufacturing chemicals listed in §§63.105 or 63.184 of the proposed rule, and complying with other potential standards the remainder of the time, will be burdensome. To overcome this problem, the commenter (A-90-19: IV-D-64) suggested including the option of basing applicability on the previous year's production, similar to the criteria in the HON for storage vessels shared among processes with varying yearly usages. The commenter (A-90-19: IV-D-64) clarified that under the suggested option, subparts G and H of the HON would apply to these sources at all times during the following year if the predominant use of the process in the previous year was to produce a chemical listed in proposed §§63.105 or 63.184.

Response: The EPA agrees that the definition of "flexible operation unit" should include operating changes. The definition is being modified to read as follows:

Flexible operation unit means a chemical manufacturing process unit that manufactures

different chemical products periodically by alternating raw materials or operating conditions. These units are also referred to as campaign plants or blocked operations.

To clarify the applicability of the HON to flexible operation units, §63.100(b)(iii) in the proposed HON has been revised, and a new §63.100(d)(3) has been added to the final rule. The primary product of a flexible operation unit is the one that is produced for the greatest annual operating time. In the instance where multiple chemicals are produced equally based on annual operating time, the primary product is the one with the greatest annual production on a mass basis.

Comment: One commenter (A-90-19: IV-D-95) alleged that the term "pharmaceutical production," as used in subpart H of the proposed HON, may be misinterpreted to mean the source category, scheduled to be subject to a different MACT standard, instead of referring only to those processes using carbon tetrachloride or methylene chloride as a reactant or process solvent. One commenter (A-90-19: IV-D-108) mentioned that many pharmaceutical processes use chemicals listed in §63.105 of the proposed rule as raw materials or solvents and may produce these chemicals as by-products, co-products, or waste products containing these chemicals that may be further processed and recovered for reuse or sale. The commenter (A-90-19: IV-D-108) expressed concern that the HON may inadvertently cover some of these processes that are slated to be covered as a separate source category.

One commenter (A-90-20: IV-D-19) stated that the term "pharmaceutical intermediate" as used in the definition of "pharmaceutical production," is too broad and not easily interpreted. The commenter (A-90-20: IV-D-19) suggested clarifying "pharmaceutical intermediate," in the definition of "pharmaceutical production," as "products intended for primary use as a pharmaceutical intermediate."

Two commenters (A-90-19: IV-D-34) (A-90-20: IV-D-19) stated that the term "pesticide" should be defined clearly for correct application of this regulation. One commenter (A-90-20: IV-D-19) stated that the term "pesticide intermediate," as used in the definition of "pesticide production," is very broad and could include many chemicals. The commenter (A-90-20: IV-D-19) suggested clarifying "pesticide intermediate," in the definition of "pesticide production," as "product intended for primary use as a pesticide intermediate."

Response: The EPA agrees that there is confusion regarding the applicability of proposed subpart H to certain pharmaceutical production and pesticide production processes. In the final rule, a new subpart I has been added to separately deal with the applicability of the HON to these and other non-SOCMI processes. More specifically, the definition of "pharmaceutical production" has been moved from proposed subpart H to the new subpart I. The definition of "pesticide production" has been deleted from proposed subpart H. Instead, certain chemicals have been listed in subpart I to clarify the applicability of the HON to these production processes. With these clarifications, the EPA believes, the confusions pointed out by the commenters should be eliminated.

Comment: One commenter (A-90-19: IV-D-81) suggested that the definition of process vent in the HON should specifically exclude vents from hydrogen chloride recovery plants at diisocyanates manufacturing facilities. The commenter (A-90-19: IV-D-81) pointed out that the hydrogen chloride recovery step is optional. The commenter (A-90-19: IV-D-81) stated that hydrogen chloride is a by-product of diisocyanates manufacturing and is not a listed SOCMI chemical. The commenter (A-90-19: IV-D-81) clarified that the hydrogen chloride vent from the by-product recovery device, therefore, does not constitute a "process vent" from a

"product recovery device" that is covered by the HON. The commenter (A-90-19: IV-D-81) expressed concern that such vents might be misinterpreted as being subject to the HON.

Response: Based on information provided by the commenter, the manufacture of isocyanate involves phosgene preparation, chemical reaction of phosgene with ammonia, and separation of diisocyanate product from solvent. Diisocyanates are listed as SOCOMI chemicals and HAP's. The manufacture of diisocyanates is, therefore, subject to the HON. Hydrogen chloride is recovered as a by-product in many facilities. Hydrogen chloride is an inorganic HAP and is the intended product of the recovery section. The hydrogen chloride recovery section is therefore not subject to the HON. The EPA does not agree that further clarification is necessary in the HON to make this determination.

Comment: One commenter (A-90-19: IV-F-7.27 and IV-F-10) asserted that the HON should cover release valves. The commenter (A-90-19: IV-F-7.27 and IV-F-10) also stated that the HON should cover flares.

Response: The commenter did not provide further detail. The EPA assumes that by "release valves" the commenter meant "pressure relief devices." These equipment are covered under the equipment leak provisions in subpart H of the HON that require pressure relief devices to be operated with an instrument reading of less than 500 ppm above background except during pressure releases. The standard does not apply during pressure releases to eliminate build-up of pressure within equipment above safe operating limits. Although specifically exempt from the equipment leak provisions, emergency releases are covered by the requirements under section 112(r) of the Act. Subpart G of the HON refers to §63.11 of the General Provisions which sets performance standards for flares.

Comment: One commenter (A-90-19: IV-D-33) suggested that the EPA should clarify that utilities, heating and cooling systems, inhibitors, and catalysts are not subject to the HON. As an example, the commenter (A-90-19: IV-D-33) mentioned HAP's used as refrigerants or heat transfer fluids that do not directly enter into the manufacture of an intended product. The commenter (A-90-19: IV-D-33) also mentioned that inhibitors and catalysts are not reactants, by-products, co-products, or products of the chemical manufacturing process in which they are utilized. The commenter (A-90-19: IV-D-33) suggested providing language in subpart F, similar to the language provided for subpart H, to specifically exclude these systems.

One commenter (A-90-19: IV-D-89) pointed out that the determination of applicability, based on a source contacting or emitting a HAP, does not support the definition of a chemical manufacturing process that manufactures a SOCOMI chemical as a product. As an example, the commenter (A-90-19: IV-D-89) cited that equipment contacting a HAP in a purchased lubricant should not be subject to the regulation if the HAP's are not actually used with the process material.

Response: Utilities and heating/cooling systems are not part of a CMPU that is subject to the HON. Inhibitors, catalysts, and similar materials are not considered raw materials and would not be subject to the HON even if they were HAP's. The EPA does not consider it necessary or practical to state all exemptions within the text of a regulation. Thus, no change will be made to the text of the HON.

To be part of a HON source, a CMPU producing a SOCOMI chemical must have an organic HAP as a reactant or as a product, by-product, co-product, or intermediate. A lubricant provides abrasion resistance for mechanical parts in equipment, and is neither a reactant nor any sort of product

of the chemical process. Accordingly, mere use of an organic HAP-containing lubricant does not subject the equipment to the HON.

Comment: One commenter (A-90-19: IV-D-86) alleged that the SOCFI source category is too broadly defined and does not recognize the differences in facilities, including size and type of operations. The commenter (A-90-19: IV-D-86) expressed concern that this could unnecessarily impose burdensome compliance requirements without significant environmental benefits. The commenter (A-90-19: IV-D-86) added that recognizing and accounting for these differences is essential for evaluating the economic impact of the Act and to determine the technical feasibility and environmental benefits of applying the standards.

The commenter (A-90-19: IV-D-86) suggested that a production threshold (e.g., 1 gigagram) should be included in the HON general applicability criteria to exempt small facilities from the same level of recordkeeping and reporting requirements applicable to larger facilities. The commenter (A-90-19: IV-D-86) reported that there is a precedent for production thresholds in existing regulations for SOCFI and non-SOCFI sources.

Response: The HON applies to major sources, irrespective of the capacities of the specific CMFU's within the major source. Past studies have indicated no direct relationship between unit capacities and emission characteristics. The impacts analysis for the HON did not identify any specific need for excluding small facilities within major sources.

Comment: One commenter (A-90-19: IV-D-36) suggested deleting example 3, on methyl methacrylate production by purification of a feedstock, from the proposal preamble's discussion of facilities that would be subject to the HON. The commenter (A-90-19: IV-D-36) clarified that the applicability of the HON to a facility that merely purifies a

feed stream is not straightforward. The commenter (A-90-19: IV-D-36) stated that purification alone should not be considered "manufacturing" for the purposes of the HON.

Response: The EPA generally disagrees that purification alone should not be subject to the HON. For example, in the distillation of a C₄ mixture from the catalytic cracking unit in a petroleum refinery, 1,3-butadiene is produced. The 1,3-butadiene is a SOCOMI chemical and an organic HAP. Therefore, purification of the C-4 stream to produce 1,3-butadiene is a stand-alone process subject to the HON. In contrast, if the purification of a chemical by distillation of an inhibitor is an integral part of a polymers and resins process, it is not covered by HON. The emissions of HAP's associated with the removal of inhibitors from raw materials for polymers and resins processes will be addressed in the appropriate source category.

Comment: One commenter (A-90-19: IV-D-77) supported excluding from the HON, equipment that does not contain HAP's. The commenter (A-90-19: IV-D-77) stated that this exemption is rational, saves resources, and reduces compliance burden.

Response: As mentioned in §63.100(j)(4) of the final rule, equipment that does not contain organic HAP's is not subject to the HON even if the equipment is located within a CMPU that is subject to the HON. Further clarification in the regulation is not necessary.

3.4 PRODUCT ACCUMULATOR VESSELS

Comment: Several commenters (A-90-19: IV-D-35; IV-D-36; IV-D-77) (A-90-20: IV-D-19) (A-90-21: IV-D-17) expressed confusion due to the duplication in the definitions of "process vents" and "PAV's" in the HON rule. One commenter added that this would result in two standards (process vents under subpart G and equipment leaks under subpart H) applying to the same vent (A-90-20: IV-D-12) and would complicate the control requirements for Group 2 process vents (A-90-19:

IV-D-77). Several commenters stated that the definition of "PAV's" is confusing and does not distinguish these equipment from storage vessels or in-process vessels (A-90-19: IV-D-35; IV-D-36; IV-D-77) (A-90-20: IV-D-19) (A-90-21: IV-D-17). One commenter (A-90-19: IV-D-77) contended that the proposed definition is broad enough to include batch processes that are to be included in a future rulemaking.

Some commenters pointed out that functionally the vents from PAV's are: well defined point sources (A-90-19: IV-D-104) (A-90-20: IV-D-7); or discrete, continuous emission points (A-90-19: IV-D-34; IV-D-69). One commenter (A-90-20: IV-D-12) stated that many of these vessels have vents interconnected with stills, reactors, and other sources covered under subpart G.

Several commenters (A-90-19: IV-D-74; IV-D-104) (A-90-20: IV-D-27) reasoned that it is not logical to regulate PAV's, which are point sources, under provisions that are intended for fugitive emissions. Two commenters (A-90-19: IV-D-50) (A-90-20: IV-D-9) stated that the TRE of these emission points, and not the VHAP content, should be used to determine if controls are necessary. One commenter (A-90-20: IV-D-12) expressed that requiring vents from all PAV's to be controlled at 95% is unreasonably costly, as some of these vents have very low emissions and consequently high TRE values.

To eliminate the above inconsistencies, several commenters suggested that PAV's should be: deleted from the subpart H requirements (A-90-19: IV-D-74; IV-D-77) (A-90-20: IV-D-27); regulated as process vents under subpart G (A-90-19: IV-D-34; IV-D-35; IV-D-36; IV-D-50; IV-D-69; IV-D-74; IV-D-77; IV-D-104) (A-90-20: IV-D-9; IV-D-12; IV-D-17; IV-D-19; IV-D-27); regulated as storage vessels under subpart G (A-90-19: IV-D-35; IV-D-36) (A-90-20: IV-D-19) (A-90-21: IV-D-17); subject to the requirements of either subpart G or

subpart H (A-90-19: IV-D-32). One commenter (A-90-19: IV-D-77) recommended including an option in the event PAV's are to be retained in subpart H, to reduce emissions to 20 ppm similar to the limit on process vents.

Several commenters (A-90-19: IV-D-35; IV-D-36; IV-D-74; IV-D-104) (A-90-20: IV-D-19; IV-D-27) (A-90-21: IV-D-17) suggested deleting the requirements for PAV's associated with the non-SOCMI processes subject to subpart H. Three of the commenters (A-90-19: IV-D-35; IV-D-36; IV-D-74) (A-90-20: IV-D-19; IV-D-27) (A-90-21: IV-D-17) stated that these PAV's should be regulated as part of future MACT standards for the appropriate non-SOCMI source categories. One commenter (A-90-19: IV-D-104) stated that the ensuing MACT standards for pharmaceutical manufacturing is anticipated to adequately regulate process vents in that industry.

Several commenters (A-90-19: IV-D-34; IV-D-69; IV-D-77) pointed out that regulating PAV's as process vents would eliminate the timing inconsistency between subpart H that requires compliance after 6 to 18 months, and subpart G that requires compliance 3 years after promulgation. Several commenters (A-90-19: IV-D-35; IV-D-36) (A-90-20: IV-D-19) (A-90-21: IV-D-17) clarified that the applicability for process vents in subpart G being more encompassing and more stringent than those in subpart H, any reference to subpart H could be essentially eliminated.

Response: The proposed definition of "PAV's" included distillate receivers, bottoms receivers, surge control vessels, and product separators that are vented to the atmosphere either directly or through a vacuum-producing system. The EPA agrees that there is need to clarify the applicability of the HON to PAV's and to remove the confusion regarding what equipment is included in the definition of "PAV's." This clarification reflects the EPA's original

intent regarding how these equipment should be controlled and does not alter the stringency of the HON.

The PAV's typically associated with SOCFI processes include distillate receivers, bottoms receivers, and associated condensers for distillation units; product separators and associated condensers following reactors and air oxidation reactors; ejector-condensers, often with hot wells, for vacuum operations; and surge-control vessels.

The term "PAV" has been deleted from the HON and replaced in subpart H with "surge control vessels and bottoms receivers." Distillate receivers, product separators, and the vent from ejector condensers will be regulated as process vents under subpart G. The vent from hot wells will be regulated under the wastewater provisions under subpart G.

Distillate receivers and product separators are tied to the common vent system with distillation units and reactors or air oxidation reactors, respectively. In other words, the common vent would be the only release point for emissions from a distillation unit, a reactor, or an air oxidation reactor, and its associated PAV's. These points were evaluated in the impacts analysis as process vents. Calculation of the TRE index for these vents is required if the emissions are continuous and the HAP content is greater than 0.005 weight percent.

A typical ejector-condenser system has a vent serving as the process vent for the distillation unit, reactor, or air-oxidation reactor. Cost-effectiveness studies and control equipment analyses performed in connection with past regulations and the proposed HON have included vents from vacuum systems as process vents. The vent from the ejector-condenser is analogous to the common vent system tied to distillate receivers and product separators for non-vacuum processes. For the HON, calculation of the TRE index is

required if the emissions are continuous and the HAP content is greater than 0.005 weight percent.

Hot wells that are enclosed have an additional vent. Contaminated condensates in the hot well are included in the definition of wastewater. The vent from an enclosed hot well is intended to be controlled under the wastewater provisions under subpart G if the contaminated condensates have flow and concentrations that are characteristic of wastewater as defined for new and existing sources. Since flow rates of wastewater from these hot wells are very high, it is expected that the vents from hot wells will be required to be controlled at 95 percent.

Surge control vessels and bottoms receivers comprise an array of equipment such as feed drums, recycle drums, day tanks, bottoms receiver tanks, etc. These types of equipment are not considered to be process vents or storage vessels. Emissions from surge control vessels and bottoms receivers do not resemble wastewater emissions. Retaining these equipment in subpart H is consistent with the EPA's intent.

The definition of "process vent" in §63.101 of final subpart F has been revised to read as follows:

Process vent means a gas stream containing greater than 0.005 weight percent total organic hazardous air pollutants that is continuously discharged during operation of the unit from an air oxidation reactor, other reactor, or distillation unit (as defined in this section) within a chemical manufacturing process unit that meets all applicability criteria specified in §63.100(b)(1) through (b)(3) of this subpart. Process vents include vents from distillate receivers, product separators, and ejector-condensers. Process vents include gas streams that are either discharged directly to the atmosphere or are discharged to the atmosphere after diversion through a product recovery device. Process vents do not include relief valve discharges and leaks from equipment regulated under subpart H of this part.

3.5 BATCH PROCESSES

3.5.1 Regulating Batch Processes

Comment: Several commenters (A-90-19: IV-D-9; IV-D-99; IV-D-118; IV-D-124; IV-D-125; IV-F-7.28) recommended that batch processes should be subject to the HON. One commenter (A-90-19: IV-D-41) asserted that batch processes are significant sources of HAP emissions and should not be exempt, unless the operations are small in size and are performed infrequently. Another commenter (A-90-19: IV-D-99) stated that batch process vents are an important source of emissions that could be controlled relatively economically. One commenter (A-90-19: IV-D-49) alleged that the exemption for batch processes is not consistent with the intent of the Congress. One commenter (A-90-19: IV-D-87) stated that batch process vents should not be categorically exempted since there are many SOCOMI facilities using batch operations that should be controlled. One commenter (A-90-19: IV-F-7.28) added that batch processes can be much more waste-intensive due to the requirement of flushing out the contents with every batch change. Two commenters (A-90-19: IV-D-90; IV-D-100) asserted that batch process vents should not be exempt from the HON because the emissions of HAP's from batch process vents pose significant health risks. The commenter (A-90-19: IV-D-90; IV-D-100) added that some State air quality programs, such as New Jersey's, currently regulate these sources and generally require the application of BACT. Two commenters (A-90-19: IV-D-85; IV-F-7.28) pointed out that the exemption of batch processes may encourage industries to shift to batch processes from continuous processes. One commenter (A-90-19: IV-D-85) stated that it is legal to exclude batch process vents only if the EPA specifically states the schedule for regulating them later.

Response: Batch processes are subject to the HON. Specifically, storage vessels, transfer racks, and wastewater

associated with batch processes are regulated by the appropriate provisions under subpart G of the HON. Equipment such as valves, connectors, etc. associated with batch processes are regulated by the equipment leak provisions under subpart H of the HON. However, the process vent provisions of the HON only apply to those vents associated with continuous processes. This distinction was made because the characteristics of emissions from vents associated with batch processes are different than those associated with continuous processes. For batch processes, the identification of appropriate control devices, test procedures, monitoring methods, and cost analysis is difficult due to the wide variations in flows and concentrations of HAP's in vent streams associated with batch processes. The analysis for process vents associated with continuous processes cannot, therefore, be used for vents associated with batch processes.

In exempting batch process vents from the HON, the EPA does not preclude these vents from being regulated in future rulemaking. In fact, the EPA is considering developing a separate MACT standard for process vents associated with batch operations.

Comment: One commenter (A-90-19: IV-D-86) supported the exemption of batch facilities from the process vent standards. One commenter (A-90-19: IV-D-86) stated that batch processing is efficient and often the only method that provides the flexibility to meet the ever-changing needs and the demand for the technological development of new and specialized products. The commenter (A-90-19: IV-D-86) added that batch equipment are often idle while waiting for cleaning, quality control checks, and raw material feed. The commenter (A-90-19: IV-D-86) stated that emissions from batch processes are, therefore, intermittent and substantially different from continuous processes. One commenter (A-90-19: IV-D-34) expressed that variations of flows and compositions make

control of batch operations difficult because of the need to design based on the worst case, yet still handle lower flows.

Response: The EPA appreciates the commenters' support.

3.5.2 Definition of Batch

Comment: Several commenters (A-90-19: IV-D-34; IV-D-41; IV-D-50; IV-D-69; IV-D-77; IV-D-92; IV-D-111) (A-90-20: IV-D-19) alleged that the definition of "batch operation" in subparts F and G is inadequate. One commenter (A-90-19: IV-D-41) alleged that the definition is loose enough to exempt all processes that repeatedly recharge a unit with a discrete batch of feed year round. One of the commenters (A-90-19: IV-D-77) indicated that batch operations are seldom run where all reactants are added at once. On the contrary, the commenter (A-90-19: IV-D-77) argued, most batch processing includes multiple sequential additions for safety and other process control reasons. Another commenter (A-90-19: IV-D-86) added that in addition to intermittent introduction of various raw materials, batch processes are also characterized by changing process conditions within the same vessel. Two commenters (A-90-19: IV-D-69; IV-D-111) requested that the EPA clarify that the definition includes batch operations involving incremental additions of raw materials or catalysts throughout the batch cycle. One commenter (A-90-19: IV-D-34) added that the definition does not reflect variations in compositions and flow rates of inlet and outlet streams that are typically associated with batch operations. One commenter (A-90-19: IV-D-50) maintained that the definition is too limiting because it does not allow such additions or sequencing of operations that are typical during the production of a discrete batch. Two commenters (A-90-19: IV-D-77; IV-D-86) stated that batch processes are different from continuous processes where feeding of raw materials and withdrawal of product occur simultaneously. One commenter (A-90-19: IV-D-41) suggested that the definition needs to

clarify what constitutes a batch in terms of size, frequency, and batch time.

One commenter (A-90-19: IV-D-77) alleged that the definition of "batch" does not clarify whether "semi-continuous" operations are included or not. The commenter (A-90-19: IV-D-77) clarified that an example of a semi-continuous process could be a feed tank charged with a batch of material that is subsequently processed through a distillation column that achieves steady state during the processing. The commenter (A-90-19: IV-D-77) also recommended considering an alternate definition of batch based on the frequency of product withdrawal. The commenter (A-90-19: IV-D-77) mentioned processes that do not withdraw product continuously and could be considered batch processes.

Response: The EPA agrees the definition of "batch operation" needed clarification to include processes with intermittent feed. Batch operations vary in size, frequency, and time, and incorporation of all these parameters in the definition to address all batch operations is not possible. The definition of "batch operation" in subpart F has been revised to read as follows:

Batch operation means a noncontinuous operation in which a discrete quantity or batch of feed is charged into a chemical manufacturing process unit and distilled or reacted at one time. Batch operation includes noncontinuous operations in which the equipment is fed intermittently or discontinuously. Addition of raw material and withdrawal of product do not occur simultaneously in a batch operation. After each batch operation, the equipment is generally emptied before a fresh batch is started.

Comment: Several commenters (A-90-19: IV-D-34; IV-D-108; IV-D-111) pointed out that the definition of "batch operation" in subpart F is different from that for "batch process" in subpart H. One of the commenters (A-90-19: IV-D-108) stated that the definition in subpart H represents a reasonable consensus. Three commenters (A-90-19: IV-D-34;

IV-D-50; IV-D-111) suggested incorporating the definition of "batch process" from subpart H into the definition of "batch operation" under subparts F and G. One commenter (A-90-19: IV-D-86) expressed that consolidating the definition of "batch" into subpart F will standardize terminology and eliminate redundancy. Another commenter (A-90-19: IV-D-111) pointed out the need for clarification in the event the EPA intended to differentiate between these definitions.

Response: The EPA intended for the two terms to be different. The definition of "batch process" in subpart H refers to the entire process and all equipment associated with the process. "Batch operation" in subpart F refers to unit operations such as distillation units, air oxidation reactors, or reactors. While batch processes may comply with alternative means of emission limitation under subpart H, process vents associated with batch operations are exempt from subpart G requirements. Thus, these terms have different meanings in the HON and require different definitions.

3.5.3 Intermittent Vents

Comment: One commenter (A-90-19: IV-D-92) alleged that the HON does not address intermittent vents from continuous processes. One commenter (A-90-19: IV-D-50) recommended excluding process vents that are intermittent in nature and including them in future regulations on batch processes. One commenter (A-90-19: IV-D-92) alleged that the HON does not address continuous units that are run on a campaign basis. One commenter (A-90-19: IV-D-50) added that at some plants, especially where recovery systems are employed, continuous and batch processes use the same vent. The commenter (A-90-19: IV-D-50) recommended that process vents of this nature should also be included in future regulations on batch processes.

Response: The EPA assumes that by intermittent the commenter meant vents that puff or release instantaneously. Although blow-down drains that are intermittent exist in the

SOCMI, the EPA is not aware of intermittent process vents that are significant emitters of HAP's. Thus, the EPA did not intend to cover such vents under the HON. Information on the occurrences of intermittent vents in the SOCMI and their emission potential is required before the EPA can consider preparing a rulemaking. Where the same vent is used for continuous and batch operations, the process vent provisions will apply during the periods of continuous operation. It is worth mentioning here that intermittent vents that are part of operations during start-up and shutdown are best addressed through site-specific start-up, shutdown, and malfunction plans that are required by the General Provisions and not through the provisions in subpart G of the HON. Regarding the comment on campaign units, the HON does address campaign units in §63.100(d)(3) of subpart F of the final rule. The reader is referred to the response under the "Other Issues" heading in section 3.3.5 of this chapter.

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4.0 SELECTION OF POLLUTANTS

Comment: One commenter (A-90-20: IV-D-9) stated that hydroquinone is a solid material, not a volatile organic compound, and should be removed from the list of VHAP's that appeared in §63.183 of the proposed rule.

Response: The list of HAP's in the HON comprises organic chemicals from the list of 189 HAP's in the Act. Although solid at ambient temperatures, hydroquinone could exert significant vapor pressure at elevated temperatures. Further, the chemical could be dispersed into the atmosphere as particulates through relief valves and control devices. Being a solid does not necessarily preclude a chemical from being regulated by the HON. Therefore, the EPA has decided that it is appropriate for hydroquinone to remain on the list of organic HAP's regulated by the HON.

Comment: One commenter (A-90-19: IV-D-41) stated that the EPA should review the list of HAP's and add to it using its authority under the Act. Specifically, the commenter (A-90-19: IV-D-41) suggested adding toxic chemicals that are not on the HAP list but are listed under SARA section 302 as extremely hazardous substances (e.g., adiponitrile, allyl alcohol, benzotrichloride, and benzyl chloride) or under SARA section 313 (e.g., acetone, o-anisidine, benzonitrile, benzoyl chloride, biphenyl, and bromoform). The commenter (A-90-19: IV-D-41) added that the emissions of these toxic chemicals are significant and are hazardous to human health and the environment.

Another commenter (A-90-19: IV-D-103) objected to the list not including the following chemicals from the TRI list: chlorine, picric acid, phosphoric acid, ammonia, tetraethyl lead, hydrogen fluoride, anthracene, cyclohexane, and trimethyl benzene.

Response: Of the 19 chemicals mentioned by the commenters, five are organic HAP's--anisidine (o-), benzotrichloride, benzyl chloride, biphenyl, and bromoform. These five chemicals are on the list of 189 HAP's in section 112(b) of the Act and they are on the list of organic HAP's in §63.107 of the proposed rule. Therefore, emissions of these chemicals are regulated by the HON.

Two of the chemicals specified by the commenters--chlorine and hydrogen fluoride--are inorganic HAP's, meaning they are on the list of 189 HAP's in section 112(b) of the Act. However, these chemicals are not listed in §63.107 of the proposed rule and are not regulated by the HON because they are inorganic chemicals. The HON was intended to reduce emissions of organic HAP's. As such, the controls required by the rule are effective for recovering or destroying organic chemicals. These controls would not reduce emissions of chlorine or hydrogen fluoride. If, during the residual risk evaluation for the HON, the EPA determines that emissions of these chemicals are great enough to endanger public health, a separate rule would be developed.

The remaining twelve chemicals specified by the commenters are not listed as HAP's in section 112(b) of the Act. For this reason, emissions of these chemicals are not subject to MACT standards (such as the HON) that are developed under section 112(d) of the Act. However, Congress did provide for revision of the list. Section 112(b)(2) of the Act requires the EPA to periodically review the list and, where appropriate, to make revisions. Additionally,

section 112(b)(3) specifies a petition procedure that may be used by any person to request modification of the list.

The EPA maintains that it has satisfied Congressional intent by regulating the emissions of the chemicals listed in table 2 of subpart F of the final rule. These 112 organic HAP's are the only organic chemicals from the list of 189 HAP's in the Act that would be emitted from SOCFI processes.

Comment: One commenter (A-90-19: IV-D-26) requested that the EPA enumerate the criteria used to identify the HAP's listed in §63.104 of proposed subpart F and §63.183 of proposed subpart H. The commenter (A-90-19: IV-D-26) claimed that no discussion was provided concerning how the chemicals were selected or evaluated. The commenter (A-90-19: IV-D-26) requested that the EPA issue a supplemental notice providing the information.

Response: In selecting the HAP's that would be regulated by the HON, the EPA started with the list of 189 HAP's in the Act. Because the HON was intended to reduce emissions from organic chemical manufacturing, the EPA studied the processes used to manufacture SOCFI chemicals and narrowed the list to those organic HAP's that would be emitted from SOCFI processes. This process was described in the proposal BID and is further documented by information in the docket. Because this information was available at proposal for review and comment, it is not necessary for the EPA to issue a supplemental notice.

Comment: One commenter (A-90-19: IV-D-86) suggested that the HON should specifically reference the appropriate HAP's list (§63.104 or §63.183 of the proposed rule) throughout the regulation to avoid confusion. The commenter (A-90-19: IV-D-86) suggested replacing the full HAP's list under §63.183 of the proposed rule with only a listing of pollutants added because of the addition of the seven non-

SOCMI processes. Another commenter (A-90-19: IV-D-56) questioned the expansion of the list of HAP's included in subparts F and G, to create the list of VHAP's included in subpart H of the proposed rule.

Response: In the proposed rule, there were two lists of organic HAP's--one that applied to subpart G (§63.104) and another that applied to subpart H (§63.183). The lists differed by 37 HAP's because the subpart H list had been agreed to by the negotiating committee before all technical analyses were complete. These technical analyses indicated that 37 of the organic HAP's on the list approved by the committee should be removed from the list because they would not be emitted from SOCMI production processes. The EPA decided that it was appropriate to include only one list of organic HAP's in the final rule. The list is located in table 2 of subpart F and contains 112 compounds. Keeping the shorter of the two proposed lists will not result in greater emissions because the additional 37 HAP's on the longer list would not be emitted from SOCMI processes. Also, because the non-SOCMI processes in subpart I are only subject for the designated pollutants, combining the organic HAP lists does not affect emissions from those processes.

Comment: Several commenters (A-90-19: IV-D-32; IV-D-33; IV-D-53; IV-D-59; IV-D-95) suggested that the EPA clearly define the term "polycyclic organic matter (POM)" in the HON. One of the commenters (A-90-19: IV-D-33) stated that the proposed definition tends to include thousands of compounds, making it difficult to identify the chemicals intended to be POM. Several commenters (A-90-19: IV-D-32; IV-D-33; IV-D-53; IV-D-59; IV-D-95) suggested wording for a definition of POM that could be added to the HON.

One commenter (A-90-19: IV-D-59) stated that the broad definition of POM in section 112(g) of the Act could include benzene-based polymers, plastic compounds, and other phenyl-

containing compounds. Another commenter (A-90-19: IV-D-53) expressed concern that linear alkyl benzene products could be included under the definition in the Act. One commenter (A-90-19: IV-D-33) stated that the definition could be revised to include multiple bridges between the aromatic rings which maintain the aromaticity of the system. One commenter (A-90-19: IV-D-53) mentioned that a revised definition of POM could include heteroatom bridges such as the oxygen in dioxins. One commenter (A-90-19: IV-D-59) mentioned the naphthalene/anthracene linkage as another commonly accepted definition for POM's. Another commenter (A-90-19: IV-D-95) suggested clarification in the definition of POM to include substituted and/or unsubstituted polycyclic aromatic hydrocarbons and aromatic heterocyclic compounds.

Several commenters (A-90-19: IV-D-32; IV-D-33; IV-D-53) indicated that historically the EPA's working definition of POM has included only compounds formed during organic combustion and pyrolysis processes. Three commenters (A-90-19: IV-D-33; IV-D-53; IV-D-59) stated that the proposed definition of POM could incorporate a range of benzene-based chemicals, including chemicals that do not have the characteristics that arise from combustion or pyrolysis. The commenter (A-90-19: IV-D-33) added that the definition should be narrowed to exclude rings with single carbon connections.

One commenter (A-90-19: IV-D-32) stated that in absence of history on regulating POM, the EPA's determination of what is considered POM should be accepted. Two commenters (A-90-19: IV-D-32; IV-D-53) added that the EPA has the authority to list future non-combustion or non-pyrolysis chemicals individually, rather than including them in the general POM category.

One commenter (A-90-19: IV-D-33) stated that POM emissions from incomplete combustion in the HON reference controls involving combustion are likely to be small.

Response: The EPA agrees with the need for further clarification of the term "polycyclic organic matter." Accordingly, the footnote for POM following the HAP list in section 112(b) is being revised to read: Includes substituted and/or unsubstituted polycyclic aromatic hydrocarbons and aromatic heterocyclic compounds, with two or more fused rings, at least one of which is benzenoid (i.e., containing six carbon atoms and is aromatic) in structure. Polycyclic organic matter is a mixture of organic compounds containing one or more of these polycyclic aromatic chemicals. Polycyclic organic matter is generally formed or emitted during thermal processes including (1) incomplete combustion, (2) pyrolysis, (3) the volatilization, distillation or processing of fossil fuels or bitumens, or (4) the distillation or thermal processing of non-fossil fuels.

It should be noted that this footnote does not refer to a boiling point of 100 °C for purposes of defining POM. This is because the EPA is proposing as part of the POM footnote to delineate later, by test method, what is included in POM. The EPA believes that any specific reference to temperature need not be incorporated directly in the POM footnote, but rather, can be factored into any test method that the Administrator may define.

4.0 SELECTION OF POLLUTANTS 4-1

5.0 SELECTION OF THE RULE

5.1 FORMAT

Comment: One commenter (A-90-19: IV-D-73) supported provisions which would accept the installation and proper operation of RCT for each emission point as compliance with the standard. Another commenter (A-90-19: IV-D-112) agreed with the use of RCT as the basis for the MACT standard and stated that it was reasonable and consistent with the technology-based approach under the Act. The commenter (A-90-19: IV-D-112) added that the RCT's the EPA has selected are generally applicable to the entire source category. Another commenter (A-90-19: IV-D-73) commended the EPA for an innovative approach to demonstrate compliance by emission limitation, installation and proper operation of RCT, or by emissions averaging.

Response: The EPA thanks the commenters for their support.

Comment: One commenter (A-90-19: IV-D-85) contended that a floor level derived solely from permitted levels in units of pounds per hour also requires a pounds per hour limitation.

Response: The EPA would like to explain how the MACT floor was determined for the HON. The floor level of control was based on control technologies and emission control efficiencies required in State and Federal regulations. It was not derived from permitted levels in pounds per hour.

Comment: Several commenters (A-90-19: IV-D-9; IV-D-10; IV-D-11; IV-D-41; IV-D-85; IV-D-118; IV-D-120; IV-D-124;

IV-D-125; IV-F-1.5) contended that the HON should be based on maximum achievable emissions reduction. One commenter (A-90-19: IV-D-85) contended that the proposed HON departs from the statute requirements of a technology-based standard aimed at maximum achievable emissions reduction. The commenter (A-90-19: IV-D-85) asserted that the Act does not leave the EPA free to give weight to the industry view that maximum achievable reductions are not worth the expense.

Response: The EPA selected the standard considering the statutory criteria. First, the EPA determined the MACT floor level of control based on requirements in State and Federal regulations and the criteria in the Act for new and existing sources. Cost was not considered until the EPA began evaluating options more stringent than the floor. This is consistent with the requirement in section 112(d)(2) of the Act to consider costs. Section 112(d)(2) of the Act states that:

"Emission standards promulgated under this subsection and applicable to new or existing sources of hazardous air pollutants shall require the maximum degree of reduction in emissions of the hazardous air pollutants subject to this section that the Administrator, taking into consideration the cost of achieving such emission reductions, and any non-air quality health and environmental impacts and energy requirements, determines is achievable for new or existing sources in the category or subcategory to which such emission standards applies..."

The Act was not intended to require maximum control regardless of other considerations. The EPA considers that interpreting the Act without including the full requirements of the Act would bias the results and not be consistent with Congressional intent.

Comment: Three commenters (A-90-19: IV-D-10; IV-D-11; IV-D-41) stated that the EPA should enforce strict chemical emission limits. One commenter (A-90-19: IV-D-120) favored

strict emission limits on each stack, vent, and fugitive emission source.

Response: The EPA considered several things, including the nature of the source category and the available information, before determining that an emission standard was not an appropriate format for the HON.

First, the regulation must be appropriate for the entire source category. For an industry as diverse and complex as the SOCFI, it would be impossible to set emission limits that were reasonable for each of the hundreds of chemical processes. If the EPA were to set specific limits, the standard would be unachievable for some sources, while representing only minimal emission reduction for other sources. Also, requirements must be stated as performance standards to allow flexibility in the means for achieving compliance; such a format allows development of technologies and permits a source to develop new applications for existing technologies.

Second, applying emission limits is not practical for some kinds of emission points such as equipment leaks and storage vessels. As stated in section 112(h) of the Act, if it is not feasible to prescribe or enforce an emission standard, the EPA may promulgate a design, equipment, work practice, or operational standard, or a combination thereof. The reader is referred to sections VII.C.1 and VIII.E of the proposal preamble for a discussion of the specific reasons for selection of format.

Furthermore, the EPA considers it impractical for this rule to require limits for each individual HAP. The HON data bases do not contain adequate information on the specific HAP's present in processes to permit specification of emission limits on particular HAP's. Given the deadlines applicable to this rulemaking, it was not possible to conduct an extensive survey to obtain HAP-specific information. The EPA's past

experience in developing a data base for the previous section 112 program and for NSPS standards demonstrates the great length of time necessary to develop and analyze the data for development of emission standards to control emissions from the SOCOMI. Developing an entirely new data base with HAP specific information is expected to require anywhere from 4 to 10 years depending on the degree of evaluation of performance and whether permits are reviewed for all SOCOMI sources. Consequently, the EPA elected to use information readily available to it to determine the floor for the SOCOMI standard under section 112(d) of the Act. In light of the EPA's prior experience with the regulation of the SOCOMI, the EPA believes this decision was reasonable.

In summary, the EPA considers an RCT or a specific percent reduction for each kind of emission point to be generally applicable to all the facilities in the SOCOMI. The EPA also considers the HON to be as strict as the Act allows considering the cost of going above the floor for each kind of emission point. Additionally, the EPA believes that there is a public benefit associated with issuing a single standard for the entire source category. This allowed the EPA to regulate emissions much sooner than would have been possible if the EPA had developed specific rules for each of the roughly 400 SOCOMI processes.

5.2 PROCESS FOR FLOOR DETERMINATION AND MACT SELECTION

5.2.1 Process for Floor Determination

Comment: One commenter (A-90-19: IV-F-12 and IV-F-7.39; IV-D-118) disapproved of the EPA's method for determining the floor stating that it is inappropriate for setting MACT floors and it avoids the intent of Congress.

Several commenters (A-90-19: IV-F-12 and IV-F-7.39; IV-D-85; IV-D-118; IV-D-124; IV-D-125) asserted that the EPA's approach would allow MACT rules to be less stringent than

existing smog or VOC control regulations in States where more than 12 percent of the SOCOMI facilities are located.

Response: The EPA assumes that the reference to smog control regulations refers to VOC RACT regulations in ozone non-attainment areas. The data bases used to determine the floor levels of control for the HON are based on State and Federal regulations. The State and Federal regulations would include controls required in ozone nonattainment areas. If at least 12 percent of SOCOMI sources are located in areas subject to the strictest State/Federal controls, and if those sources have emission points that satisfy the applicability criteria of the HON, then the HON MACT floor analysis for existing sources would reflect these results. However, if less than 12 percent of the sources are required to achieve the strictest controls, then the possibility exists that the floor level of control for existing sources is not equal to that achieved by the best-controlled sources.

The EPA does not believe that the method used by the EPA to determine existing control levels and the floor understated actual control levels in SOCOMI. The EPA holds this view because other assumptions used in the analysis introduced a positive bias. Examples of assumptions that would introduce an upward bias to the analysis include: (1) all sources are in compliance with all applicable control requirements for air emissions; and (2) sources would be in compliance with recently established requirements such as 40 CFR part 61 subpart BB. Thus, the EPA believes that taken as a whole the uncertainties should balance out, and the control level is not understated. It should be noted that other commenters thought that the floor was overstated.

Comment: Several commenters (A-90-19: IV-D-32; IV-D-58; IV-D-71; IV-D-112; IV-F-1.1 and IV-F-3) generally supported the EPA's approach for determining the MACT floor for the HON. One commenter (A-90-19: IV-F-1.1 and IV-F-3) stated that the

EPA had done a credible job with the limited information available. One commenter (A-90-19: IV-D-32) agreed that, with the exception of storage tanks, the EPA satisfied the criteria laid out in the statute. Another commenter (A-90-19: IV-D-112) stated that, except for wastewater, the EPA had done a reasonable job in determining the MACT floor and the EPA's approach met the criteria in the Act. One commenter (A-90-19: IV-D-71) contended that the EPA's approach represents a guess at the actual controls in place at SOCFI facilities. One commenter (A-90-19: IV-D-58) agreed in principle with the EPA's approach but stated that additional discussion of the approach for setting the MACT floor is necessary since the rule will set a precedent for other source categories.

Response: The EPA thanks the commenters for their support. The reader is referred to section 5.3.4 of this volume for the response to the comment (A-90-19: IV-D-112) regarding wastewater, and to section 5.3.2 of this volume for the response to the comment (A-90-19: IV-D-32) regarding storage tanks.

Comment: One commenter (A-90-19: IV-D-85) asserted that debates on MACT standards should focus on technical questions. The commenter (A-90-19: IV-D-85) argued that the attention given to cost-effectiveness arguments has diverted the EPA's attention from closely examining the best sources and from looking carefully for at least the maximum reductions achievable with existing technology and techniques.

Response: For the HON, the EPA selected universally applicable controls with the greatest emission reductions. The EPA recognizes that in some site-specific applications better emission reductions might be demonstrated by some control technologies. In some cases, a control technology may achieve higher performance levels due to the unique processes or pollutants involved that cannot be duplicated for all pollutants or processes. Requiring such control technologies

would not be appropriate in a national regulation because the controls would not be generally applicable to the SOCOMI source category as a whole.

The EPA did not require every emission point in a source to be controlled because no existing source controls emissions from all operations, and because the characteristics of different emission points vary widely. In addition, the statute requires the EPA to select MACT standards considering cost, energy requirements, and "non-air" quality health and environmental impacts. Therefore, determining whether the added control is worth the additional cost (i.e., determining cost effectiveness) is one aspect of considering the statutory factors. The EPA considers that it has followed the guidelines of the statute in this respect.

5.2.1.1 Source Basis vs. Emission Point Basis

Comment: Several commenters (A-90-19: IV-D-32; IV-D-46; IV-D-57; IV-D-58; IV-D-71; IV-D-77; IV-D-82; IV-D-83; IV-D-91; IV-D-92; IV-F-1.1 and IV-F-3; IV-F-1.3 and IV-F-5; IV-F-1.6 and IV-F-6) contended that because the HON MACT floor was determined based on the best-controlled emission points, it is more stringent than the best-performing 12 percent of sources. Three commenters (A-90-19: IV-D-77; IV-D-83; IV-D-92) contended that the methodology for setting MACT floors is not consistent with the Act. Three commenters (A-90-19: IV-D-32; IV-D-83; IV-D-92) stated that the Act indicates that the EPA shall establish MACT floors for SOCOMI sources rather than emission points typically existing within that source category.

Two commenters (A-90-19: IV-D-57; IV-D-92) contended that the EPA was inconsistent in its setting of the MACT floor because it treated SOCOMI as 5 source categories rather than as one, although the EPA defines SOCOMI as one source category. The commenters (A-90-19: IV-D-57; IV-D-92) claimed that this results in a substantial increase in the stringency of the

floor calculated for the category as a whole. One commenter (A-90-19: IV-D-92) also claimed that this is equivalent to establishing NSPS for all existing facilities. The commenter (A-90-19: IV-D-92) argued that this was not the intent of Congress because Congress explicitly established a two tier system, one standard for existing facilities, and one standard for new facilities. The commenter (A-90-19: IV-D-92) asserted that the intent of Congress was to designate chemical plants as a single source category for purposes of issuing standards. The commenter (A-90-19: IV-D-92) also contended that the EPA did not justify the overstringent MACT standard resulting from adding the five emission points together.

One commenter (A-90-19: IV-D-32) stated that the EPA's proposed methodology would approximate the actual floor closely only if the best-controlled 12 percent of the five basic kinds of emission points within the SOCOMI source category were all located at the same sources. The commenter (A-90-19: IV-D-32) contended that this is not the case, and although there may be some overlap, the 12 percent best-controlled sources for one emission point are not the 12 percent best controlled sources for another point. One commenter (A-90-19: IV-D-92) contended that it was unlikely that there exist more than a few chemical plants that meet the EPA's definition, certainly not 12 percent. Several commenters (A-90-19: IV-F-1.1 and IV-F-3; IV-F-1.3 and IV-F-5; IV-D-58; IV-D-82; IV-D-83) contended that while the best-controlled sources are likely to have installed RCT at many points, all of the Group 1 points at these sources will not be controlled to the RCT performance level.

One commenter (A-90-19: IV-D-32) asserted that the degree of overstatement by the EPA is substantial. The commenter (A-90-19: IV-D-32) stated that the excessive stringency of the result may not by itself invalidate the final rule, given the EPA's discretion to set MACT at a level

more stringent than the floor. However, the commenter (A-90-19: IV-D-32) asserted that in the final standard, the EPA must take into account the conservative nature of the floor determination, in order to ensure proper account of the statutory factors governing the determination of MACT. The commenter (A-90-19: IV-D-32) specifically stated that when considering whether to impose a standard that is more stringent than the floor, the EPA must take into account that its assumed floor is more stringent than the real floor as contemplated by the statute.

The commenter (A-90-19: IV-D-85) stated that the EPA legally cannot use a broad source definition and then use unit-by-unit approach exemptions. The commenter (A-90-19: IV-D-85) contended that the EPA attempted to justify its approach by claiming that it needs to set a floor for the source as defined by the rule without source-wide data. The commenter (A-90-19: IV-D-85) asserted that the EPA should use a narrow source definition throughout the rule and base the floor determination on emission point specific data.

Response: The Act does not define "source." A source may be a facility, a kind of emission point, or a collection of emission points. The definition chosen for each MACT standard is dependent on the characteristics of the industries included in the source category being regulated, and the information available to characterize the source category. The EPA has chosen to define a source in the HON as a collection of emission points (i.e., storage vessels, transfer racks, wastewater streams, process vents, and equipment leaks). The HON MACT floor analysis was based on emission points rather than overall facilities because characteristics of SOCFI facilities vary widely from plant to plant and site to site, so "typical" sources could not be identified that would be representative of the source category. This process can be expected to result in a floor determination that is at

least as stringent as that which would have been generated with actual source-wide data.

The EPA maintains that, given the uncertainties in the data base, the procedure used to determine the floor in the proposal (and in this final rule) is a reasonable approach to the determination of the floor. The EPA could not gather actual site-specific data in the time available for this rulemaking. Thus, the EPA had to rely on existing data sources to develop model emission point characteristics for sources subject to this rule. Where data were available for the specific process, the model emission point characteristics reflected average or representative operations for the specific process. In cases where no data were available for a specific process, the model emission point characteristics were derived from average characteristics for the generic reaction type (e.g., hydrogenation, halogenation, etc.).

The EPA considered whether to aggregate the available information by facility, therefore estimating the site-specific emissions and controls. However, the EPA rejected that approach to determining the floor as introducing additional assumptions and such large uncertainties as to render the analysis meaningless. For example, due to incomplete information, it is probable that not all process units at each plant site were properly identified. In fact, locations of some chemical production processes are unknown. Site-specific differences in process unit design could not be taken into account in assigning model emission points and baseline control levels. Thus, there is uncertainty about the existence of any particular emission point, as well as its assigned emission and control level at any particular plant site. Furthermore, independent assignment procedures were used for each kind of emission point. In consideration of these factors, the EPA believes that the uncertainties introduced by the assumptions made in assigning emission point

characteristics to specific sites are so large that they would have undermined the validity of such an analysis. Thus, the EPA decided not to use that approach in determining the MACT floor for the HON.

The EPA believes that the approach it used of developing point-by-point approximations of the source-wide floor level of control was the most appropriate use of the available data base to determine the floor. Moreover, the EPA does not believe that its methodology, when all aspects are considered, did overstate the source-wide floor. While the assumption of collocation of the best controlled points does introduce an upward bias in the analysis, there are other aspects of the analysis that work in the opposite direction. For example, the use of information from State regulations instead of site-specific control and operation information would be likely to understate the degree of control present in some sources. Site-specific controls that may have been included in new source permits or applied voluntarily could not be accounted for in the data base. Thus, the EPA expects these factors are likely to balance out. It should be noted also that other commenters (A-90-19: IV-D-85; IV-D-41, etc) thought that the floor was understated and should require more stringent control.

The EPA also believes that its choice of methodology was reasonable since it provided additional assurance that, notwithstanding the uncertainties inherent in the data base, the floor determined by the EPA would be no less stringent than the actual source-wide floor. As some of the uncertainties present, such as the reliance on analyses of State regulations rather than actual permitted levels of emissions, would lead to a less stringent floors in the absence of countervailing factors, the EPA believes it was reasonable to provide a safety factor by determining the floor

on the basis of a point-by-point approximation that assumed the co-location of the best-controlled points.

In any event, even if the EPA's point-by-point methodology may have overstated the floor, such an overstatement does not invalidate the emission standard since the Act allows the EPA to set a standard that exceeds the floor as determined by the EPA.

Comment: One commenter (A-90-19: IV-D-83) added that if setting a MACT floor for sources proves to be problematic then the EPA's only option under the Act is to subdivide the category and set separate MACT standards for each subcategory. Another commenter (A-90-19: IV-D-92) contended that the HON does not attempt to subcategorize the industry but rather applies equally to all SOCFI facilities. The commenter (A-90-19: IV-D-92) concluded that the EPA should promulgate a MACT standard applicable to the SOCFI as a whole.

One commenter (A-90-19: IV-D-57) added that aggregating SOCFI facilities producing different organic chemicals will likely increase the required level of control for the industry as a whole because the best-controlled 12 percent of the industry will likely be associated with particular segments of the industry. The commenter (A-90-19: IV-D-57) reasoned that if the SOCFI were disaggregated into separate source categories, those categories would have less stringent floors.

Response: It was the intent of Congress that the EPA regulate source categories, not individual chemical production processes. Thus, the HON was meant to be a rule that broadly applied to the SOCFI. The suggestion made by the commenters to develop standards for every subcategory in the SOCFI is not practical, because it would have been impossible to set individual MACT standards for each subcategory in the SOCFI and still meet the schedule of the HON.

Comment: One commenter (A-90-19: IV-D-85) contended that the EPA had improperly defined the floor by focusing its

floor determinations on an inappropriate search for exemptions from control. The commenter (A-90-19: IV-D-85) also claimed that instead of identifying the average emission limitation achieved by the best performing 12 percent of sources as required by the statute, the EPA focused on a narrow group of the least controlled sources, in order to justify non-control of the emissions from these points. The commenter (A-90-19: IV-D-85) asserted that if the EPA defines source broadly, emissions reductions achieved through pollution prevention must be taken into account in setting the floor. The commenter (A-90-19: IV-D-85) asserted that the EPA must include results of the early reductions program, 33/50 program and any other pollution prevention effort.

Response: The EPA believes that the commenter has misinterpreted the HON MACT floor analysis. The EPA's intent was not to search for exemptions, but rather to characterize operations that are likely to be controlled at sources within the SOCFI. The EPA is not aware of any facility that controls every emission point. As discussed in the preamble to the proposed rule, the EPA defined "source" as a collection of emission points because this approach provides flexibility in compliance. Specifically, it allows facilities to use emissions averaging to determine the most practical, site-specific compliance program. However, as discussed in the previous response, the EPA had to rely on data gathered for previous rules which had been structured around individual kinds of emission points. Given the diversity and complexity of the SOCFI and the known biases in the available data, the EPA maintains that the results of its MACT floor analysis for the HON are reasonable and representative on a national basis of the operations that are likely to be controlled.

Pollution prevention activities are generally site-specific and the EPA does not have site-specific data on pollution prevention activities to incorporate in the MACT

floor analyses. Pollution prevention activities are also specific to particular processes. Therefore, it would not be possible for the EPA to incorporate such information into a generic rule like the HON.

Some activities, like the 33/50 program, are voluntary measures that could not be verified. The EPA would also like to note that many of the measures that would have occurred under the 33/50 program and the Early Reductions program occurred within the 18 months prior to proposal or 30 months prior to promulgation of the HON. These programs would be subject to section 112(d)(3)(A) of the Act, and thus could not be considered in determination of the MACT floor.

5.2.1.2 Data Collection and Use of State Regulations

Comment: One commenter (A-90-19: IV-D-32) contended that the methodology used by the EPA to determine the MACT floor is different from that contemplated by the statute, primarily because the EPA lacked the data necessary to perform a direct calculation of the floor. One commenter (A-90-19: IV-D-41) asserted that Congress did not give the EPA options as to how the floor should be determined or allow the EPA to neglect appropriate data collection efforts. One commenter (A-90-19: IV-D-82) interpreted section 112(d)(3) of the Act to mean that the EPA should set existing source MACT by surveying all actual HON sources to determine which 12 percent have the best controls. Four commenters (A-90-19: IV-D-72; IV-D-90; IV-D-100; IV-D-106) recommended that the EPA should use existing source-specific data to establish the MACT floor for source categories and collect additional data where necessary. The commenters (A-90-19: IV-D-72; IV-D-106) stated that if the EPA intends to use a "surrogate" for source-specific data, the EPA should provide an analysis to show that the surrogate approach gives results that are not significantly different from the use of source-specific data and are consistent with requirements in the Act. One

commenter (A-90-19: IV-D-86) claimed that the EPA's methods are not equivalent to empirical industry survey.

Several commenters (A-90-19: IV-D-41; IV-D-70; IV-D-71; IV-D-92; IV-D-96) objected to the HON MACT floor analysis being based on State and Federal regulations rather than site-specific data. Two commenters (A-90-19: IV-D-72; IV-D-85) claimed that the EPA did not support its claim that results of using State regulations are not significantly different from what they would be if source-specific data had been collected. One commenter (A-90-19: IV-D-85) claimed that a comparison of the EPA's results with the regulatory rules and practices of States with more than 12 percent of the sources indicates the EPA's results are wrong.

Two commenters (A-90-19: IV-D-90; IV-D-100) asserted that the use of State and Federal regulations alone may not accurately portray the level of control that is in place for reasons not stated in a particular regulation. One commenter (A-90-19: IV-D-41) contended that HON RCT's represent the baseline requirements in any particular State, not what is achieved in practice by the best controlled similar sources. The commenter (A-90-19: IV-D-41) stated that the failure to differentiate between a minimal level of required control and what is currently being achieved in the best sources violates the Act. The commenter (A-90-19: IV-D-41) also asserted that the EPA failed to distinguish between controls established to meet RACT for VOC's and controls to meet more stringent air toxic standards.

One commenter (A-90-19: IV-D-70) contended that any analysis of the MACT floor that uses only regulations with defined control levels excludes data on some of the best-controlled SO2MI sources in the nation. The commenter (A-90-19: IV-D-70) suggested that the EPA should correct this inadequacy through a thorough analysis of point source

controls in effect at SOCMCI sources whether specified in regulations or not.

One commenter (A-90-19: IV-D-46) suggested that the EPA should select a group of facilities in any category, determine the overall average control of HAP's from the sources, and select the best 12 percent. The commenter (A-90-19: IV-D-46) added that standards could then be equitably set from this representative sample. One commenter (A-90-19: IV-D-85) suggested that the EPA gather actual emissions data from a sample likely to represent the top performers in order to determine the floor.

One commenter (A-90-19: IV-D-70) stated that if Federal standards are promulgated which are significantly less stringent than the requirements of the States with the predominant number of sources in that MACT category, then the industries in those States would suffer a competitive disadvantage. The commenter (A-90-19: IV-D-70) indicated that the main thrust of the TACB control of toxic emission sources has been through the Permits Program which involves a case-by-case determination of those appropriate controls, and these determinations are not specifically contained in any TACB regulation.

Response: The Act requires the EPA to set MACT standards based on the best performing 12 percent of sources for which the EPA has emissions information. The EPA agrees that a detailed survey sent to the entire SOCMCI would have been the optimal means of gathering data on nationwide sources. However, given the size of the SOCMCI, it would not have been feasible to survey the entire industry and meet the schedule of the HON. Also, there is currently no data base that covers the entire SOCMCI. The EPA's past experience in developing the data base for the previous section 112 program and for NSPS standards demonstrates the great length of time necessary to

develop and analyze the data for development of emission standards to control emissions from the SOCFI.

The EPA considered examining State permit files, but determined that the time required to obtain the necessary information from the files would have prevented the EPA from meeting the schedule of the HON. Further, it would have been impractical for the EPA to have gathered data from sources likely to represent the top performers because the EPA would have no way of determining which sources are the top performers. The EPA considers requirements in State and Federal regulations to be a good approximation of the control levels that most sources across the nation are required to achieve. The EPA did survey a segment of the SOCFI to obtain information on wastewater collection and treatment operations because few State and Federal wastewater regulations had been enacted during the data gathering phase of the HON.

The EPA would also like to explain that controls are determined from State regulations by both the characteristics of the emission point and the location of the facility. Therefore, even if 12 percent of the SOCFI facilities are located in a State with very stringent control requirements, there must be emission points at those facilities that are actually subject to those control requirements in order for the MACT floor analysis to be affected. Some of the State regulations have county-specific requirements, thus making the relevancy of the control level even more dependent upon location.

For example, State X may have the most stringent control requirements in the nation for storage vessels, and at least 12 percent of the SOCFI facilities in the nation may be located in the State. However, if only one storage vessel in the State meets the applicability criteria of the regulation, thereby making it subject to the control requirements, then that particular State regulation does not drive or affect the

HON MACT floor analysis for storage vessels at existing sources because that single tank does not represent 12 percent of the population.

The EPA rejects the claim that sources in States with more stringent regulations than Federal regulations would suffer a competitive disadvantage. The stringent State regulations already exist. If the source already has to meet those standards then it already has a competitive disadvantage. Federal regulations even if they are less stringent than some State regulations can only result in reducing the competitive disadvantage, because sources in States without controls or with less stringent control requirements will be required to increase their control requirements.

Comment: One commenter (A-90-19: IV-D-71) claimed that the HON MACT floor is improperly based on risk because it was determined from State regulations. The commenter (A-90-19: IV-D-71) contended that many of the States where SOCOMI facilities are located have developed air toxics policies and implemented them without their being subject to public comment and without their being promulgated as regulations. The commenter (A-90-19: IV-D-71) stated that these States go beyond the normal level of technology-based control required by existing regulations, and thus bias the SOCOMI data base to higher levels of control. The commenter (A-90-19: IV-D-71) asserted that the use of health risks or controls based on State air toxics policies for the purposes of establishing the MACT floor is inconsistent with the intent of Congress and should not be considered in the HON because a scientifically sound technique for health risk assessment has not been established. The commenter (A-90-19: IV-D-71) concluded that the EPA must limit its use of data from those States which require control on facilities to achieve some prescribed health risk value.

Response: The information used was derived from an analysis of the control requirements and applicability criteria of the State and Federal regulations. The EPA would have no way of knowing if regulations were based on a risk-analysis if it were not specified. Regardless of the reasons, sources in these States would be achieving specific control levels that would have to be considered when determining the floor.

Comment: One commenter (A-90-19: IV-D-85) contended that the EPA must take into account NSR in key SOCOMI States. The commenter (A-90-19: IV-D-85) cited section 112(d)(3)(A) as requiring all BACT determinations and all but the most recent LAER determinations to be taken into account in determining the floors for MACT standards. The commenter (A-90-19: IV-D-85) claimed that the data base used in the HON does not take this information into account, and therefore under-represents the actual control levels. The commenter (A-90-19: IV-D-85) asserted that the estimates of industry-wide cost for the rule or for comprehensive control are very high. The commenter (A-90-19: IV-D-85) stated that the EPA should incorporate BACT and LAER levels in its data base, and focus its efforts on the places with the highest concentration of SOCOMI facilities.

One commenter (A-90-19: IV-D-83) contended that the EPA should indicate in the HON whether it excluded from the RCT selection process, as mandated by the Act, those sources that achieved the equivalent of a LAER standard within 18 months before the MACT standard was proposed.

Response: The EPA wishes to clarify that section 112(d)(3)(A) of the Act does not specify that all BACT determinations and all but the most recent LAER determinations must be included in the MACT floor analysis. In fact, section 112(d)(3)(A) does not specifically refer to LAER determination as defined under PSD/NSR review. The statute

actually refers to "the lowest achievable emissions rate (as defined by section 171) applicable to the source category and prevailing at the time." The EPA has interpreted this provision to mean any emission standard the source is complying with 18 months prior to proposal of the HON or 30 months prior to promulgation of the HON. The paragraph in question also states that the MACT floor for existing sources is the "average emission limitation achieved by the best-performing 12 percent of the existing sources for which the Administrator has emissions information." The EPA agrees that it would have been preferable to consider BACT and LAER decisions in determining the MACT floor for the HON. However, the EPA did not have "emissions information" or data on site-specific controls for all sources in the SOCFI. A review of the BACT/LAER data base indicates that it does not include a comprehensive list of SOCFI sources, or a comprehensive list of sources in States with the highest concentration of SOCFI facilities. The BACT/LAER data base also does not include the information necessary to determine the MACT floor level of control for all kinds of emission points. Therefore, it was not possible to base the HON MACT floor on BACT or LAER determinations.

The EPA appreciates the commenter's suggestion but maintains that the EPA's approach for determining the MACT floor for the HON was the only practical alternative that was consistent with meeting the statutory deadline or court-ordered deadline. The EPA determined that the best way to characterize controls at sources was to rely on requirements in State regulations.

Comment: One commenter (A-90-19: IV-D-75) criticized the EPA for examining only air regulations without reviewing other regulations such as OCPSF Effluent Guidelines. Two commenters (A-90-19: IV-D-83; IV-F-1.2 and IV-F-4) specifically asserted that the EPA incorrectly excluded

biological treatment from its MACT analysis for wastewater based on a general review of existing Federal and State regulations, and erroneously concluded that since few existing regulations required biological treatment controls, sources had not installed such controls for wastewater emissions. The commenter (A-90-19: IV-D-83) argued that biological treatment is the most common type of control actually installed at SOCFI sources for managing wastewater containing HAP's.

One commenter (A-90-19: IV-D-75) opposed the EPA's considering only the sources which did not meet the requirements of the benzene and vinyl chloride NESHAP's when determining the wastewater component of the MACT floor. The commenter (A-90-19: IV-D-75) stated that this decision led the EPA to the conclusion that only three percent of the sources use the RCT and that the MACT floor for wastewater is no control.

Response: Survey questionnaires were sent to characterize the wastewater controls at SOCFI sources because at the time data was gathered for the HON, few State and Federal regulations were enacted to control emissions from wastewater. The results of the survey indicated that biological treatment controls are used at SOCFI facilities. However, the survey results also indicated that most SOCFI sources do not suppress emissions from their wastewater collection systems prior to the biological treatment unit. Therefore, the biological treatment system is ineffective for the control of air emissions because all the volatile water-soluble HAP's are emitted prior to reaching the biological treatment unit. The MACT floor analysis did consider existing wastewater controls. However, the average efficiency of the best-controlled 12 percent of the streams does not represent a known control system, and the median efficiency was equal to "no control." Thus, the MACT floor level of control for wastewater was determined to be "no control."

5.2.1.3 Use of a Model Analysis

Comment: Several commenters (A-90-19: IV-D-32; IV-D-46; IV-D-75; IV-D-82; IV-D-83; IV-D-86; IV-D-112; IV-F-1.3 and IV-F-5) objected to the EPA's use of a model analysis to determine the HON MACT floor. One commenter (A-90-19: IV-D-46) argued that it was inappropriate for the EPA to require all SOCFI categories to achieve controls based on a fictitious composite facility that does not exist. One commenter (A-90-19: IV-D-86) stated that actual SOCFI source uncontrolled emissions as incorporated into the EPA's models were used only in the cost-effectiveness factor analyses. The commenter (A-90-19: IV-D-86) concluded that the EPA used this data to determine the scope of emission points to which the MACT standards would apply.

Two commenters (A-90-19: IV-D-83; IV-F-1.3 and IV-F-5) contended that the methodology for setting the MACT floors should be based on actual HAP emissions reduction achieved at facilities currently in operation and not based on model facilities that could theoretically achieve maximum emissions reductions by applying the RCT on each emission point within the facility. One commenter (A-90-19: IV-D-83) stated that a theoretical analysis would not satisfy the requirements of the Act.

Three commenters (A-90-19: IV-D-32; IV-D-82; IV-D-83) claimed that the EPA's model analysis is based on assumptions that consistently overestimate the HAP reductions achieved at the best-performing SOCFI sources. Three commenters (A-90-19: IV-D-32; IV-D-75; IV-D-112) contended that the model plant approach used by the EPA was oversimplified and unrealistic. One commenter (A-90-19: IV-D-32) specifically stated that the EPA's assumption in their model plants that vent streams from a manufacturing unit are centrally located and manifolded to a single control device is erroneous. The commenter (A-90-19: IV-D-32) contended that mixed streams may create safety

concerns; vent proximity or energy requirements may make manifolding impractical; or streams may be incompatible with the design of the control device.

One commenter (A-90-19: IV-D-75) contended that overestimation of emissions has resulted in a gross underestimation of the incremental costs of the rule, therefore, the data supplied by the EPA in the proposal BID to justify the floor cannot be relied upon. The commenter (A-90-19: IV-D-75) contended that accurate and prudent data reveal that standards above the floor cannot be justified. One commenter (A-90-19: IV-D-82) added that the EPA must be willing to adjust its results to compensate for the fact that use of a model analysis overstates the MACT floor.

One commenter (A-90-19: IV-D-83) urged that if the EPA decides to retain the model facility analysis for setting MACT floors in the HON, the EPA should indicate that the model analysis approach was used in the HON because of inadequate source-wide data and that the EPA will not use this approach in future MACT rulemakings if source data is available. The commenter (A-90-19: IV-D-83) also requested that the EPA clarify and revise all unrealistic emission reduction assumptions contained in the model facility analysis for establishing MACT floors.

Response: The EPA maintains that a model analysis is the only practical approach that could be used to evaluate nationwide impacts for an industry as large and diverse as the SOCFI. As stated previously, site-specific information on equipment and controls was not already available, and gathering such data could not be accomplished in the time available for this rulemaking. Thus, using models to characterize the industry was considered the best method.

The EPA has used models in many previous rulemakings because they are reasonable representations of sources and allow national impacts to be calculated. The model process

vents, storage tank farms, transfer racks, and wastewater streams for the HON analysis were developed from real data from past studies on the industry, and they were assigned to real facilities. The EPA recognizes that some degree of simplification was required for the models to make them applicable for all processes in the SOCOMI and no one facility may exactly match the models. Further, if better data had been available, the EPA would have used it in development of the models. However, the EPA maintains that the models sufficiently represent the SOCOMI as a whole and the EPA considers that it has estimated national impacts as accurately as possible with the data available.

The EPA would also like to clarify that, although there were simplifying assumptions that affected the estimates of national impacts, the rule is structured to allow flexibility in compliance for individual sources. For example, although the cost analysis was based on manifolded vents to a common control device, the rule does not require that vent streams actually be combined. By specifying a percent reduction or outlet concentration, the rule allows for a site-specific determination of the most practical method of compliance. Also, evaluation of percent reduction is not as strongly biased by the models as a strict emission limit would have been.

5.2.1.4 Reference Control Technologies

Comment: One commenter (A-90-19: IV-D-86) questioned whether reference technologies from prior studies and rulemakings could be used to support a determination that the EPA's reference technologies are used by the top 12 percent of SOCOMI sources. Another commenter (A-90-19: IV-D-83) contended that the EPA did not adequately correlate the performance of control technologies to the best-performing facilities in the source category. The commenter (A-90-19: IV-D-83) contended that the EPA's proposed dividing line for

identifying process vents achieving the RCT performance levels did not correlate in many cases with the actual performance levels achieved at existing sources.

One commenter (A-90-19: IV-D-85) contended that the EPA must calculate floor RCT efficiencies based on the best performers. The commenter (A-90-19: IV-D-85) asserted that the EPA identified 98-percent control efficiency as the highest that is universally achievable within the SOCFI, without providing evidence to support this assertion. The commenter (A-90-19: IV-D-85) claimed that combustion devices can usually attain better than 99% efficiency if operated properly.

Another commenter (A-90-19: IV-D-32) expressed concern that the EPA has used average removal efficiencies to establish control levels that cannot be achieved for points below the average, thereby not reflecting costs, emission benefits, and technical realities in the rule.

One commenter (A-90-19: IV-D-83) expressed concern that the EPA may be calculating the MACT floors based on optimal control efficiencies achievable which may not be realistically maintained over the lifetime of the RCT.

Response: The HON requires application of the controls that, in past rulemakings, the EPA has determined are the best demonstrated control technologies that are universally applicable to the SOCFI. The performances of the RCT's are based on years of study and test data that prove the RCT can normally achieve the associated reduction efficiency. Performance levels in prior studies and rulemakings have been scrutinized and reflect what the RCT's can generally achieve under proper operating conditions. This information is detailed in the dockets for the distillation vents NSPS (A-80-25), the air oxidation vents NSPS (A-81-22), the reactor vents NSPS (A-83-29), and the volatile organic liquid storage NSPS (A-80-51). Volume 1B of the proposal BID contained a

section for each control technology on factors affecting performance and limitations on applicability. The reader is also referred to process vents comments on flare and incineration applicability in volume 2A of the HON promulgation BID.

The EPA recognizes that in some site-specific applications better efficiencies might be demonstrated. In some cases, the RCT's may achieve a higher performance level due to the unique processes or pollutants associated with a particular industry or facility that cannot be duplicated for all pollutants or processes. Therefore, such performance levels would not be generally applicable to the SOCOMI as a whole. Since the HON is a national standard, it would not be appropriate to specify efficiencies that are not universally achievable by properly designed and operated control devices.

Also, a review of existing State and Federal regulations indicated that where State and Federal rules require controls on emission points, they typically require use of the same controls required in previous NSPS for SOCOMI. Several commenters (A-90-19: IV-D-32; IV-D-57; IV-D-73; IV-D-112) agreed that the EPA had chosen generally applicable RCT's.

Thus, in determining the MACT floor for the HON, the question was not what controls should be applied but rather what are the characteristics of the emission points that are controlled; what are the flow rates, concentrations, throughputs, capacities, etc. of the emission points that are controlled at existing sources.

Regarding one commenter's concern that control device performance may worsen over time, the EPA considers that proper monitoring and maintenance of equipment will provide the required operating control efficiencies. Also, the EPA has included in its analyses the expected lifetime of the equipment.

The EPA wishes to restate that a facility is not required to use the RCT. It may use an alternative control technology as long as the technology can meet the HAP reduction requirements as detailed in the HON provisions.

5.2.1.5 Use of Cost Effectiveness

Comment: One commenter (A-90-19: IV-D-51) objected to the use of cost effectiveness to determine the floor for process vents. The commenter (A-90-19: IV-D-51) asserted that cost effectiveness is not a valid indicator of equipment performance, as it gives equal weight to cost and emission reductions without accounting for the toxicity of the pollutant. The commenter (A-90-19: IV-D-51) argued that the EPA's approach did not identify the best-performing 12 percent of existing vents but merely the most cost effective vents to control. One commenter (A-90-19: IV-D-99) considered it inappropriate for the EPA to establish the floor based on the cost-per-ton of emissions reductions. One commenter (A-90-19: IV-D-85) claimed that the floor must be based on actual emissions, not cost effectiveness. The commenter (A-90-19: IV-D-85) specifically asserted that the HON illegally sets a floor for vents based on ranking vents from top to bottom in cost effectiveness.

Response: The EPA would like to clarify that the MACT floor level of control for process vents was not based on cost effectiveness, but options above the floor were. Process vents were ranked using cost effectiveness of control (or TRE) as a surrogate measure because this can be used to reflect all possible combinations of various factors that affect emission rates and likelihood of current control (flow rate, HAP concentration, net heating value, and corrosion properties). Use of a single criterion of cost effectiveness results in a more easily understood parameter and is consistent with the format of the process vent provisions. The cost-effectiveness values were used only to rank the vents in the data base and

as a characteristic to identify controlled vent characteristics (similar to the way in which vapor pressure was used to identify the characteristics of the best controlled storage vessels). In determining the process vent component of the source-wide floor, no judgements were made about the reasonableness of the characteristics of the controlled vents.

Because of the opinions expressed by commenters, the EPA also reevaluated the process vent control level associated with the floor using emissions as the ranking parameter. Emissions correlate with likelihood of control, but the correlation is weaker because other factors (such as concentration and flow) also influence it. The process vent data base was ranked by vent from lowest to highest emission rate. The characteristics of the process vent where at least 12 percent of the process vents are controlled is 64 Mg/yr (71 tons/yr) and the cost-effectiveness value is \$1,620/Mg (\$1,460/ton). Thus, essentially identical results are obtained by both ranking procedures.

The EPA would also like to clarify that the MACT floor level of control was determined on a total HAP basis and not for individual HAP's. Toxicity and risk will be considered for the residual risk analysis required under section 112(f) of the Act.

Comment: Three commenters (A-90-19: IV-D-49; IV-D-90; IV-D-100) contended that the EPA inappropriately used cost-benefit analysis for setting the MACT floor for process vents. The commenters (A-90-19: IV-D-49; IV-D-90; IV-D-100) emphasized that Congress did not intend for the MACT floor to be based on a cost-benefit analysis. Two commenters (A-90-19: IV-D-90; IV-D-100) contended that the basis for determining the MACT floor is to identify the leading pollution control activities within the source category and then establish a level playing field by requiring continuous emissions

reduction across the source category. The commenters (A-90-19: IV-D-90; IV-D-100) indicated that this process accounts for cost-effectiveness by selecting currently achievable controls within the source category.

Response: The EPA would like to clarify the difference between cost-effectiveness analysis and cost-benefit analysis, and to clarify how the process vent MACT floor analysis is not based on cost-benefit analysis. A cost-benefit analysis requires an assessment of the health effects associated with regulating HAP's and the associated costs. The Act explicitly forbids use of a cost-benefit analysis for determining the MACT floors because it is difficult to quantify health concepts. The EPA considers the HON to comply with the Act as the MACT floor was not determined using a cost-benefit analysis.

A cost-effectiveness analysis requires comparing the cost of applying technologies or performance levels with the associated reduction in emissions. The Act requires that the EPA select MACT standards considering costs. The EPA considers that a cost-effectiveness analysis for control options above the floor is consistent with the Act.

The process vents MACT floor analysis was based on control technologies and performance levels required in State and Federal regulations. A cost-effectiveness analysis was only used to determine if control options above the floor could be enacted without adverse economic impacts. For process vents, the cost-effectiveness analysis showed that emission reductions greater than those required by the floor could be set without adverse economic impacts.

5.2.2 Selection of MACT

Comment: One commenter (A-90-19: IV-D-41) stated that the methodology used to develop MACT failed to adequately address the application of measures, processes, methods, systems or techniques described in section 112(d)(2) of the

Act. The commenter (A-90-19: IV-D-41) contended that the EPA instead examined a data base of RCT's which were primarily developed for VOC control and selected a control technology.

Response: The control techniques listed in section 112(d)(2)(A) of the Act are site specific and may not be feasible for all chemical processes across the nation. Since the HON will apply to many different types of SOCOMI processes, it would not be practical to specify such site-specific controls to all SOCOMI processes. However, most of the organic HAP's to which the HON applies are also VOC's. The HON is consistent with the statute because each of the RCT's required in the HON would be considered a control technique described by section 112(d)(2)(B) through (E) of the Act.

The EPA agrees with the commenter that the RCT's analyzed were primarily developed for VOC control. However, the EPA considers that the RCT's are also applicable for controlling HAP's. The EPA is not aware of control devices that are designed specifically to control HAP emissions and that are generally applicable for all SOCOMI processes. The reader is referred to volume 1B of the proposal BID and volume 2B of the promulgation BID for a more extensive discussion of the performance control technologies for reducing HAP's versus VOC's.

Comment: One commenter (A-90-19: IV-F-1.5) contended that the EPA has misinterpreted the floor and what section 112 of the Act requires. Two commenters (A-90-19: IV-F-1.5; IV-F-12 and IV-F-7.39) asserted that the floor should establish an absolute base minimum level of control beyond which the MACT standard cannot be further compromised. The commenter (A-90-19: IV-F-1.5) asserted that the purpose of the MACT standards is to advance the state of the art pollution control across the board to facilities that may not employ the MACT and to guarantee real improvement in at least

88 percent of the industry. The commenter (A-90-19: IV-F-1.5) also asserted that the intention of the MACT determination is to promote adoption by the industry of the pollution control practices of the leader, not to embrace the status quo. Two commenters (A-90-19: IV-F-1.5; IV-F-12 and IV-F-7.39; IV-D-85) contended that the Act required no special justification to go above the floor, but the Act requires special justification showing that maximum reductions are unachievable in order to go down to the floor. The commenter (A-90-19: IV-F-12 and IV-F-7.39; IV-D-85) contended that the statutory language stating that the MACT standards may be more stringent than the floor must be read together with the language stating that MACT standards shall require maximum achievable emission reductions. The commenter (A-90-19: IV-F-12 and IV-F-7.39) also contended that the EPA must create emissions limitations more stringent than the MACT floor if they are achievable.

Three commenters (A-90-19: IV-F-12 and IV-F-7.39; IV-D-49; IV-D-85) contended that although the Act indicates the EPA may take cost into consideration, it does not let the EPA allow less than the maximum reductions control technologies can provide, unless costs make that level of control unachievable. Two commenters (A-90-19: IV-D-85; IV-F-12) contended that by exempting emission streams below certain cost-effectiveness cutpoints from control, the EPA has created an incentive for sources to separate large emission streams into smaller emission streams that would qualify for exemptions. Three commenters (A-90-19: IV-F-12 and IV-F-7.39; IV-D-41; IV-D-85) stated that the EPA must presume that maximum emissions reductions are achievable considering cost because the maximum level of control is derived only from techniques already in use at existing facilities. One commenter (A-90-19: IV-D-85) also asserted that the EPA's cost estimates fail to reflect that almost all the non-

wastewater controls required are already in place in most facilities. The commenter (A-90-19: IV-D-85; IV-F-12 and IV-F-7.39) also claimed that since the EPA has not predicted any plant shutdowns or large price increases for chemicals from control of all available emission points in the SOCOMI, the emission reductions through application of the RCT's to all emission points are achievable. The commenter (A-90-19: IV-D-85) also claimed that the cost-effectiveness of various control options is irrelevant to whether the cost of a control technology makes the reductions it could produce unachievable.

One commenter (A-90-19: IV-D-41) contended that cost-effectiveness should not be used to determine the MACT, and all MACT determinations in the HON should be redone, eliminating cost considerations. The commenter (A-90-19: IV-D-41) contended that the EPA never assessed environmental and health benefits of total control, but used cost effectiveness repeatedly in determining whether to require controls more stringent than the floor. The commenter (A-90-19: IV-D-41) contended that in the HON, cost-effectiveness is used to justify unacceptably weak standards below what is achievable.

Several commenters (A-90-19: IV-D-58; IV-F-1.3 and IV-F-5; IV-F-1.6 and IV-F-6) suggested that the EPA institute a policy that requirements beyond the emission point-based floor for existing sources should be adopted only when both the estimated emission reduction and cost effectiveness of the additional requirements is substantially advantageous. One commenter (A-90-19: IV-D-83) stated that the EPA should acknowledge that the HON would establish a stringent MACT floor that should not be tightened unless the emission reductions greatly outweigh the incremental costs of control. One commenter (A-90-19: IV-D-82) opposed setting a MACT standard beyond the mandatory floor absent a compelling reason to do so.

Response: The EPA agrees with the commenters that the intent of the Act is to improve air pollution control nationwide and to use the best performers as examples and measuring sticks or benchmarks. The EPA also agrees that the MACT floor represents the minimum level of control that must be required. However, the EPA disagrees with the commenters' claim that the Act requires no special justification to go above the floor. On the contrary, the Act requires that, in determining the maximum achievable degree of emission reductions, the EPA is to consider the cost of achieving emission reductions, and non-air quality health and environmental impacts and energy requirements, and that EPA must establish MACT at a level no less stringent than the floor. Clearly, a MACT standard set at a level above the floor must be based on a consideration of the statutorily-specified factors, and therefore must be justified on the basis of those factors. The EPA further notes that the Act does not specify the precise manner in which it is to consider the statutorily-specified factors and believes that the manner in which it has considered those factors is an appropriate one.

The EPA believes that to comply with the Act, cost must be considered in selecting an option more stringent than the floor. However, the EPA considers terms like "substantially advantageous" , "greatly outweigh the costs", and "compelling reason to do so" to be ambiguous and subject to numerous interpretations. The EPA has interpreted the Act to require a cost-effectiveness analysis for selecting options more stringent than the floor level of control. For the HON, control above the floor level of control was carefully analyzed to determine if it was achievable. The EPA set control levels above the floor level of control for process vents, storage tanks, and wastewater because it was cost-effective.

The Act also prohibits a cost-benefit analysis requiring an assessment of health effects from being used to determine MACT. Health effects are to be considered 8 years later when the EPA evaluates the residual risk of the source category. The EPA considers that it has followed the requirements of the Act in these respects.

5.2.2.1 Reference Control Technology

Comment: Three commenters (A-90-19: IV-D-32; IV-D-57; IV-D-112) supported the use of RCT as the basis for the HON, stating that it is consistent with the technology-based approach specified in section 112(d) of the Act. One commenter (A-90-19: IV-D-73) stated that the RCT's for storage vessels, process vents, and transfer operations are generally applicable and reasonable for Group 1 emission points, and will result in effective and consistent control of HAP emissions. Three commenters (A-90-19: IV-D-32; IV-D-57; IV-D-112) added that the selected RCT's are generally applicable to the sources in the category. Another commenter (A-90-19: IV-F-1.1 and IV-F-3) contended that the EPA identified controls required for new sources or in special situations and tried to apply those to all situations.

Response: The EPA thanks the commenters for their support. The EPA believes one commenter (A-90-19: IV-F-1.1 and IV-F-1.3) may have misinterpreted the basis of the selection of the RCT's. The EPA selected the RCT's based on a review of control technologies required in State and Federal regulations, and surveys for wastewater emissions. All controls analyzed for the HON are applicable to new and existing sources.

Comment: One commenter (A-90-19: IV-D-85) generally endorsed the RCT approach as being a flexible system. However, the commenter (A-90-19: IV-D-85) stated that the RCT approach involves some environmental risk as plant owners and operators have incentive to choose the most inexpensive

control option, even when the option selected does not produce the maximum emissions reduction. The commenter (A-90-19: IV-D-85) stated that the RCT approach could be improved by requiring the operator to choose the most environmentally beneficial technology.

Response: The EPA thanks the commenter for their suggestion. However, the term environmentally beneficial is ambiguous and may have many interpretations. In addition, the EPA considers proving whether the technology used is or is not the most environmentally beneficial to be difficult if not impossible. While one control technology may reduce HAP emissions more than another technology, it may also increase multimedia impacts, such as NO_x or SO_x emissions.

The Act also requires that maximum emissions reduction be required considering, among other things, cost. Since the Act requires the EPA to consider cost, the EPA does not consider it appropriate to require control greater than the MACT because it is not cost-effective to implement. The EPA considers using the suggested RCT, or a technology that may reduce emissions equivalent to the RCT, sufficient to meet the requirements of the Act. Another technology may reduce emissions even more, but may not be cost-effective to implement.

Comment: One commenter (A-90-19: IV-D-58) recommended that EPA clearly state what is meant by "achieved" in terms of existing control device performance because some emission control devices, however well-maintained and operated, may experience some degradation in control efficiency over time. One commenter (A-90-19: IV-D-63) suggested that "achieved control device performance" be defined as the performance obtained in normal operating conditions over the expected operating lifetime of the equipment, assuming proper maintenance and operating conditions.

Two commenters (A-90-19: IV-D-58; IV-D-83) requested that the EPA clarify in the final HON rule that the RCT performance levels will not be based on the potential capabilities of new equipment operated under optimal conditions but rather on the performance levels achieved by a properly operated and maintained control device during its expected lifetime. One commenter (A-90-19: IV-D-58) recommended that the EPA consider warranted performance of control equipment as the measure of achievable performance.

Response: The EPA considers that proper maintenance and monitoring of the control device will enable the control device to operate under normal operating conditions at the desired efficiency over the lifetime of the equipment. However, should control device performance decline over time as mentioned by the commenter, the owner or operator would be responsible for repairing or replacing the equipment so that the emission point is still in compliance with the HON.

Comment: One commenter (A-90-19: IV-D-85) asserted that the EPA cannot claim that the reference control efficiency reflects the capabilities of the technology, because the rule does not require achievement of the percentage reduction over a reasonably short period of time.

The commenter (A-90-19: IV-D-85) also contended that the reference control efficiency understates the maximum achievable emissions reduction to the extent that averaging times are not consistent with the capabilities of the technology selected.

Response: For some RCT's, the EPA bases demonstration of compliance on performance testing and includes certain time specifications in the provisions for performance-testing. The EPA believes that if a device is demonstrated to achieve a specific reduction during a performance test, then that device can be expected to continue to achieve that reduction as long as the device is properly maintained and operated. The

commenter did not provide any details regarding why the averaging times are not consistent with the technology selected.

Comment: One commenter (A-90-19: IV-D-85) stated that the RCT level of control is less than some State RACT requirements (e.g., 99 percent reduction in New York). The commenter (A-90-19: IV-D-85) also stated that in New York, emissions of less than one lb/hr are required to be controlled if necessary to meet ambient air quality limits. The commenter (A-90-19: IV-D-85) claimed that because data is not available to show that New York's standards are not achievable or are not achieved by the average of the best performing 12 percent of existing sources, the EPA must raise the RCT efficiency at least to New York's levels.

Response: As discussed in section 5.2.1.2, consideration of an existing requirement as affecting the MACT floor is dependent on the location of the facility and the characteristics of the emission point. Although a State may contain more than 12 percent of the SO2MI facilities in the nation, if there are no emission points in that State that meet the applicability criteria of the State rule and are required to meet specific control requirements, then the stringency of the State rule is irrelevant. There must be emission points actually subject to control requirements in order for a regulation to have an impact on the MACT floor.

Further, the EPA would like to point out that the HON analysis indicated that less than 12 percent of SO2MI facilities are located in New York.

Comment: One commenter (A-90-19: IV-D-107) recommended that each recovery technology or combustion device should be allowed to compete in the marketplace to meet the specific needs of each SO2MI process subject to the HON.

Response: The HON is written as a performance standard so that any control device may be used if it can meet the

performance requirements. Nothing in the HON precludes any technology from competing in the market place as long as the technology can achieve the level of emission control required in the HON. The EPA even provides provisions for alternative control technologies and promotes innovative control strategies.

Comment: One commenter (A-90-19: IV-D-92) contended that the proposed rule does not provide a time period in which the EPA must approve, deny, or modify requests for approval of equivalent technology. The commenter (A-90-19: IV-D-92) recommended a 90-day period for the EPA to review the application requests. The commenter (A-90-19: IV-D-92) requested that if no word from the EPA is received after the 90 days have elapsed, the facility be given permission to implement the technology at its own risk if it fails to meet the standard.

The commenter (A-90-19: IV-D-92) suggested that the EPA act as a clearinghouse for approved alternative methods (BACT-like data base) in order to provide industry with inter-EPA Region and interstate consistency.

One commenter (A-90-19: IV-D-33) asserted that the alternative means of emission limitation provisions in proposed §63.102(c) should be streamlined and used to encourage innovative and cost-effective means to achieve MACT. The commenter (A-90-19: IV-D-33) added that proposed §63.162(c) in subpart H does not adequately reflect the statutory language and should be changed to be consistent with proposed §63.102(c) in subpart F.

Response: The HON already contains provisions that would allow the use of alternative means of emissions limitations as long as the technology meets the requirement of the MACT. The EPA considers the language in these provisions to be adequate. However, the EPA does agree with the commenter that the provisions for alternative means of emission limitation should

be consistent between subparts F and H of the HON. The EPA has revised the rule to reflect this.

The EPA appreciates the suggestion to create a new data base. However, at this time, the EPA does not have plans to facilitate the construction of such a data base.

5.2.2.2 Use of Cost and Cost Effectiveness

Comment: One commenter (A-90-19: IV-D-85) contended that the EPA's estimate of cost effectiveness does not reflect the cost savings possible from pollution prevention, emissions averaging, or from ducting emission points together.

Response: It is not technically feasible in all cases to duct emission points together. Many times the resulting stream would be unsafe because of the incompatibility of the chemicals in the stream. In addition, it is difficult, if not impossible, to estimate the savings from pollution prevention programs because they are generally site-specific. To have accounted for these control measures in the HON impacts analysis would have required more detailed, site-specific information than was gathered by the EPA for the HON. Collecting this type of information would have required a substantial investment in time that was not possibly under the strict schedule of the HON. However, the EPA did account for the savings associated with the use of recovery devices by including product recovery credits in the estimation of total costs. It should also be noted that other commenters felt that the cost estimates were understated.

Comment: Two commenters (A-90-19: IV-D-72; IV-D-106) concurred with the EPA's use of incremental cost per ton of pollutant removed as the appropriate method for evaluating the cost-effectiveness of control technology beyond the floor. Another commenter (A-90-19: IV-D-87) contended that the EPA should reassess its reliance on incremental cost-effectiveness for decision making because most of the associated values for average cost effectiveness are much less than the cost per

pound for new hydrocarbon controls in States such as California. The commenter (A-90-19: IV-D-87) contended that overall cost effectiveness, not incremental cost effectiveness, should be used to measure the economic efficiency of a regulation, because adding increments in stringency would have raised the overall cost-effectiveness only slightly, leaving still low values for the regulation.

Response: While overall cost-effectiveness would be the appropriate measure for the comparison between having a particular regulatory alternative and having no regulation, it is not the appropriate measure for comparing several regulatory alternatives. When comparing two regulatory options, the extra cost and extra environmental improvement are the relevant factors for comparing a more stringent option to a less stringent one. This use of incremental analysis is accepted practice for both economics and decision analysis.

Two commenters (A-90-19: IV-D-72; IV-D-106) also agreed with the EPA's use of incremental cost-effectiveness.

Comment: One commenter (A-90-19: IV-D-41) requested that the EPA fully evaluate non-air quality and environmental impacts. Two commenters (A-90-19: IV-D-72; IV-D-106) added that the EPA should also consider non-air quality health and environmental impacts (e.g., generation of solid waste and wastewater) and energy impacts in setting requirements beyond the floor. One of these commenters (A-90-19: IV-D-106) suggested that the EPA also consider the overall cost of controls when defining similar sources within a category.

Response: As required by the statute, the EPA considered the magnitude of HAP reductions, cost and economic impacts, energy impacts, non-air quality health impacts, and other environmental impacts when evaluating control levels above the floor level of control. The reader is referred to the preamble where these impacts are presented in tabular form for the selected option.

Comment: One commenter (A-90-19: IV-G-1) recognized that the EPA has authority to set cut-off levels based on surrogates for cost-effectiveness, below which individual HAP emission points within MACT-covered processes are not required to be controlled. The commenter (A-90-19: IV-G-1) stated that the EPA's approach was consistent with the implementation history of NSPS, RACT, and other technology-based requirements under the Act, and also comports with the EPA's authority to set reasonable *de minimis* levels.

Response: The EPA thanks the commenter for their support.

Comment: One commenter (A-90-19: IV-D-82) supported setting standards only for those specific subclasses for which controls are relatively cost-effective. The commenter (A-90-19: IV-D-82) contended that the decision whether to control remaining elements should be left to the individual source, and government initiatives to extend controls to these units should take the form of general encouragement through pollution prevention and emissions trading programs. The commenter (A-90-19: IV-D-82) recommended that voluntary incentives should be emphasized except where additional regulation is either legally required or clearly justified on policy grounds. One commenter (A-90-19: IV-D-89) asserted that the HON must be carefully reviewed to achieve emissions control in the most cost-effective manner.

Response: The Act requires that MACT standards require the maximum emissions reductions considering cost, non-air quality health and environmental impacts, and energy requirements. However, the Act requires the Administrator to establish a standard that is no less stringent than the best-controlled 12 percent of sources. In this rule-making, the EPA used cost effectiveness to evaluate options above the floor. For emission points not included in the floor and determined not to be cost effective to control, and also not

required to be controlled under other regulations, an owner or operator may choose to control emission points voluntarily or not to control them at all.

Comment: Two commenters (A-90-19: IV-D-32; IV-D-69) asserted that the EPA has failed to meet its statutory obligation to consider costs when setting a MACT standard above the floor level of control. Several commenters (A-90-19: IV-D-32; IV-D-69; IV-D-75; IV-D-112) stated that the EPA's model plant approach contains several unrealistic assumptions thereby leading to inaccurate estimates. One commenter (A-90-19: IV-D-69) concluded that the rule is not as cost-effective as the EPA claims and/or cut-off levels are too low. Three commenters (A-90-19: IV-D-32; IV-D-75; IV-D-112) claimed that based on a more realistic assessment of costs, emission benefits, and multimedia impacts, there is no justification for exceeding the MACT floor.

One commenter (A-90-19: IV-D-32) asserted that by focusing on emission points instead of sources, the EPA overstates the actual floor levels, and the EPA should account for this overstringency when establishing the prescribed MACT levels for the HON. The commenter (A-90-19: IV-D-32) reasoned that, because the EPA's estimate of the floor was already more stringent than the actual floor, there was no justification for exceeding the MACT floor. The commenter (A-90-19: IV-D-32) asserted that cost and environmental benefits must be considered where the EPA sets MACT above the floor. The commenter (A-90-19: IV-D-32) contended that the EPA had not adequately considered these factors, had relied on flawed data, and should adjust the MACT levels to account for realistic cost and benefit estimates. The commenter (A-90-19: IV-D-32) specified that the EPA did not justify exceeding the floor for vents, storage vessels, and wastewater.

One commenter (A-90-19: IV-D-98) contended that the EPA's failure to subcategorize sufficiently makes the

emissions limitation infeasible for sources that legitimately should be in a subcategory. The commenter (A-90-19: IV-D-98) concluded that this equated to a failure to take costs into consideration in setting emission standards.

Response: As stated in previous responses, the EPA maintains that its approach for estimating the impacts of the HON was the only practical way to evaluate such a large and complex industry within the available timeframe. While the EPA recognizes that there was uncertainty in the analysis, the rule is structured to accommodate site-specific characteristics and considerations. The rule also allows for future changes due to redesign or changes in process operations.

Where the EPA has selected an option more stringent than the MACT floor, the decision was based on the statutory criteria (i.e., cost, energy requirements, and non-air quality health and environmental impacts). Consideration of cost effectiveness was based on algorithms that have been used and commented on extensively in past rules. The EPA does not believe that these algorithms drastically underestimate costs on a national basis. The EPA has also provided numerous compliance options for each emission point to allow owners and operators to select the most practical compliance program for each source.

Comment: One commenter (A-90-19: IV-D-115) contended that cost-effectiveness benchmarks listed with the HON are significantly lower than those in California's BAAQMD cost-effectiveness guide for photochemically reactive organic compound reductions. The commenter (A-90-19: IV-D-115) stated that \$17,500 per ton is cost effective even if a compound is not hazardous. Another commenter (A-90-19: IV-D-87) argued that it would be logical to spend more per ton for HAP's, compared to hydrocarbons, because the HAP's subject to the HON are generally photochemically reactive as well as

toxic. One commenter (A-90-19: IV-D-70) contended that the cost figure used to determine whether or not an emission point is a Group 1 or Group 2 classification should be consistent with the Texas Regulation Development Program's determination of cost effectiveness. One commenter (A-90-19: IV-D-115) asserted that any cost-effectiveness provisions should allow equivalency for States/Districts whose cost-effectiveness benchmarks are at least as stringent.

Response: In evaluating regulatory alternatives and selecting the stringency of the rule, the EPA had to consider not only cost but also non-air quality health and environmental impacts and energy requirements. Also, the EPA had to evaluate these criteria for the entire nation, not just a single State. Thus, the requirements had to be reasonable when applied to the source category as a whole, with all its diversity and complexity.

The EPA disagrees with one commenter's assertion that \$17,500 per ton of HAP is cost effective for the sources regulated by the HON. The value may be accepted as cost effective in specific geographic regions or parts of the SOCFI. However, in developing a national standard like the HON, the EPA must consider the diversity of the industry and the fact that some areas of the country have many plant sites while other areas have only a few. The EPA also recognizes that there are many SOCFI sources in Texas; however, the EPA had to take a broader perspective in selecting the requirements for a national rule. In addition, nothing in the HON precludes a State or region from setting more stringent standards than the HON if they so desire.

5.2.2.3 Cost-Benefit Analysis

Comment: One commenter (A-90-19: IV-D-82) recommended that the HON be based on a full cost-benefit analysis demonstrating that the social benefits of additional regulation more than exceed the social costs if there is a

decision to go beyond the MACT floor. The commenter (A-90-19: IV-D-82) contended that technology-based standards that regulate without regard to the benefits of regulation give the EPA no incentive to improve its knowledge of the risks it is addressing and the EPA should not to go beyond the MACT floor without justification on cost-benefit grounds.

The commenter (A-90-19: IV-D-82) contended that, in the absence of cost-benefit analysis, to propose going beyond the MACT floor the EPA should invite interested commenters to submit a full cost-benefit analysis in comments, and the EPA should promise to consider that analysis in its decisions. The commenter (A-90-19: IV-D-82) contended that adopting this approach would encourage private commenters to undertake their own policy analysis on major Act questions, while preserving the EPA's discretion to act in cases where they did not.

Response: The Act requires that section 112(d) standards be technology-based and does not allow consideration of cost-benefit analysis. The statute was revised in this manner to ensure progress in the regulation of HAP emission sources. By relieving the EPA from having to complete the analysis for and resolve the debate on this issue before a standard could be issued, the Act provided for earlier application of controls to achieve MACT. The Act also provided in section 112(o) for the National Academy of Sciences to study risk assessment procedures. The results of that study are to be used 8 years after promulgation of a MACT standard to evaluate residual risk as required by section 112(f).

Comment: Many commenters (A-90-19: IV-D-9; IV-D-10; IV-D-11; IV-D-49; IV-D-51; IV-D-83; IV-D-85; IV-D-89; IV-D-94; IV-D-122; IV-F-7.6; IV-F-7.9 and IV-F-12; IV-F-7.40) objected to the HON being based on cost-benefit or risk analysis. Two commenters (A-90-19: IV-D-99; IV-D-118) stated that the EPA must commit itself to technology-based standards. One commenter (A-90-19: IV-F-12 and IV-F-7.39) objected to cost-

benefit analysis because it does not take into account the value to the economy of expenditures and job-producing environmental controls.

One commenter (A-90-19: IV-D-49) asserted that the science of health impacts is not sufficiently advanced to be adequately represented in any benefits calculation of control. One commenter (A-90-19: IV-F-7.40) stated that the problem of a cost-benefit analysis is that the cost of capital expenditures for a facility are compared against the benefit of maintaining the health of humans as well as the environment for long periods of time. One commenter (A-90-19: IV-F-7.9) suggested that the cost savings of allowing less stringent emission controls is offset by the cost of health care for workers and nearby residents. One commenter (A-90-19: IV-F-7.40) concluded that the short-term cost in capital expenditures is minuscule compared to the long-term benefit from maintaining natural resources and the ancillary economic benefit derived therefrom.

One commenter (A-90-19: IV-F-7.2) disagreed with the use of risk assessment in developing the HON because the exposure levels set by using risk assessment do not actually correspond to health effects. The commenter (A-90-19: IV-F-7.2) presented an example where exposure levels, established using risk assessment, were repeatedly found to be inadequate and were, therefore, lowered.

Two commenters (A-90-19: IV-F-7.6; IV-F-7.39 and IV-F-12) maintained that the HON proposal preamble commits the EPA to cost-benefit analysis in future rulemakings, and that this policy is illegal and should be abandoned. Several commenters contended that: (1) although the Act requires cost to be taken into consideration, it does not mandate a cost-benefit analysis for the establishment of MACT standards (A-90-19: IV-D-49; IV-D-87; IV-D-115); (2) Congress did not intend for cost-benefit analysis to be used to determine the

MACT standard (A-90-19: IV-D-49; IV-D-90; IV-D-94; IV-D-100); and (3) Congress explicitly rejected cost-benefit analysis for setting MACT standards because, in the past, evaluating risk virtually paralyzed the EPA in its attempt to establish air toxic standards (A-90-19: IV-D-85; IV-D-94; IV-D-99; IV-D-118; IV-F-7.6; IV-F-7.39 and IV-F-12). Several commenters contended that by injecting cost benefit analysis into the HON: (1) the EPA will face the impossible task of putting a price on unquantifiable health concepts (A-90-19: IV-D-85; IV-D-99; IV-F-7.6); and (2) the regulatory process would be overwhelmed and cause the EPA to miss the deadlines for establishing standards (A-90-19: IV-D-85; IV-D-99; IV-F-7.6). One commenter (A-90-19: IV-D-99) added that if the EPA failed to establish MACT standards, the burden would fall on State agencies which do not have the resources for such a challenge.

Four commenters (A-90-19: IV-D-49; IV-D-90; IV-D-100; IV-F-7.39 and IV-F-12) objected to the EPA using cost-benefit analysis to determine exemptions for process vents and other emission points. Two commenters (A-90-19: IV-D-90; IV-D-100) contended that the EPA had improperly established such exemptions based on a cost-benefit analysis that did not address public health impacts or environmental impacts.

Two commenters (A-90-19: IV-D-90; IV-D-100) protested that the EPA did not account for the costs associated with the potential adverse health effects from exposure to allowable emissions that result from arbitrary exemption of Group 2 emission points. Another commenter (A-90-19: IV-F-7.39 and IV-F-12) contended that it was illegal for the EPA to exempt HON pollution streams from control on the basis of cost-benefit analysis by measuring the benefit in terms of tons of emissions reduction instead of avoided deaths.

Response: The EPA believes that there may be some confusion regarding the difference between cost-benefit

analysis and cost-effectiveness analysis. A cost-benefit analysis requires an assessment of the health effects associated with regulating HAP's and the associated costs. A cost-effectiveness analysis requires comparing the cost of applying control technologies or achieving performance levels with the associated reduction in emissions and determining if the cost of achieving the emission reductions is reasonable.

As noted by earlier commenters, cost-benefit analysis is difficult given the present state of development of risk assessment. It is also highly controversial because it involves assigning a value to health impacts. The EPA agrees with the commenters that the Act prohibits using a cost-benefit analysis for developing section 112 standards. The EPA considers the HON to comply with the Act because MACT for the HON was not determined using a cost-benefit analysis.

The Act requires that, in determining MACT, the EPA must consider cost, energy requirements, and non-air quality health and environmental impacts. Because evaluation of health impacts is to be postponed until completion of the NAS study required in section 112(o), in developing the HON the EPA considered the three remaining statutory criteria. Environmental impacts were evaluated by estimating reductions in HAP emissions and associated increases in secondary air pollutants. The EPA also estimated the increased energy demand associated with the rule.

The statute does not specify how the EPA is to consider cost. The EPA did evaluate the economic impacts associated with the HON; however, the measures were not sensitive enough to distinguish among regulatory options. Thus, the EPA selected a cost-effectiveness analysis as the most appropriate method for evaluating the costs of options more stringent than the floor.

The EPA maintains that its determination of MACT for the HON is consistent with the Act and involved consideration of the statutory criteria.

Comment: One commenter (A-90-19: IV-F-7.34) stated that cohabitation and coexistence with chemical companies are difficult when known or suspected medical conditions and diseases, as listed on materials safety data sheets, are daily realities. Many commenters (A-90-19: IV-D-27; IV-D-29; IV-D-117; IV-D-119; IV-F-1.5; IV-F-7.1; IV-F-7.2; IV-F-7.3; IV-F-7.4; IV-F-7.5; IV-F-7.6; IV-F-7.7; IV-F-7.8; IV-F-7.9; IV-F-7.10 and IV-F-9; IV-F-7.11; IV-F-7.12; IV-F-7.13; IV-F-7.14; IV-F-7.15; IV-F-7.16; IV-F-7.17; IV-F-7.18; IV-F-7.22; IV-F-7.23; IV-F-7.24; IV-F-7.25; IV-F-7.26; IV-F-7.30; IV-F-7.31; IV-F-7.32; IV-F-7.33; IV-F-7.34; IV-F-7.35; IV-F-7.36; IV-F-7.37; IV-F-7.38; IV-F-7.39 and IV-F-12; IV-F-7.40; IV-F-7.42; IV-F-7.45; IV-G-14) stated or implied that emissions from nearby chemical companies are causing health problems in the surrounding communities. Two commenters (A-90-19: IV-F-7.2; IV-F-7.5) contended that cumulative low levels of chemical exposure over the long term are associated with health effects. Several commenters (A-90-19: IV-D-119; IV-F-7.3; IV-F-7.4; IV-F-7.5; IV-F-7.8; IV-F-7.9; IV-F-7.12; IV-F-7.13; IV-F-7.16; IV-F-7.17; IV-F-7.18; IV-F-7.23; IV-F-7.24; IV-F-7.25; IV-F-7.26; IV-F-7.30; IV-F-7.31; IV-F-7.32; IV-F-7.33; IV-F-7.34; IV-F-7.35; IV-F-7.36; IV-F-7.37; IV-F-7.38; IV-F-7.40; IV-F-7.42; IV-F-7.45) cited various health effects that they believed to be related to toxic emissions from chemical plants. Three commenters (A-90-19: IV-D-66; IV-F-7.5; IV-F-7.25) raised issues regarding the health of children in areas with chemical plants.

One commenter (A-90-19: IV-F-12) cited a Tulane University study included in the House Report to the 1990 Amendment, which indicated that the lung cancer rate for

individuals living within a mile of major chemical plants is four times the national average. One commenter (A-90-19: IV-F-7.32) stated that, according to the EPA, it is more likely that a person living within 1 mile of a petrochemical facility will get cancer.

Many commenters (A-90-19: IV-D-118; IV-F-7.2; IV-F-7.10 and IV-F-9; IV-F-7.11; IV-F-7.12; IV-F-7.13; IV-F-7.25; IV-F-7.27; IV-F-7.29; IV-F-7.30; IV-F-7.34; IV-F-7.37) used the term "Cancer Alley" to refer to parts of Louisiana and Texas where a large number of chemical manufacturing companies have their operations. One commenter (A-90-19: IV-F-7.37) discussed and presented tables (A-90-19: IV-F-11) and scientific data on cancer in Louisiana but stated that more studies should be done regarding health in "cancer alley." The commenter (A-90-19: IV-F-7.37) presented data to disprove the prevalent "lifestyle theory" which states that excesses of cancer in Louisiana are due to excessive smoking, drinking, eating, and sexual behavior. The commenter (A-90-19: IV-F-7.37) concluded from the data that cancer rate due to occupation is a more important factor than smoking, drinking, eating, and sexual behavior.

One commenter (A-90-19: IV-D-76) claimed that the previous commenter (A-90-19: IV-F-7.37) had misinterpreted the data provided in the report entitled "Cancer in Louisiana: Volume VII - Cancer Incidence in South Louisiana, 1983-1986." The commenter (A-90-19: IV-D-76) provided a copy of the report and refuted various conclusions made by the previous commenter (A-90-19: IV-F-7.37) that had indicated elevated levels of cancer among specific sex-race groups in Louisiana and that had established a high occupation-related cancer rate.

One commenter (A-90-19: IV-F-7.15) mentioned data recently released by the EPA which was construed to indicate that the health risk near some chemical facilities is greater

than one in one thousand. One commenter (A-90-19: IV-F-7.23) mentioned that, in Mississippi, a particular city located near several chemical companies has almost twice the number of hospital admissions per 1,000 Medicaid recipients as any other city in the nation. Two commenters (A-90-19: IV-F-7.30; IV-F-7.31) discussed a health questionnaire distributed in their neighborhood, with 400 responses received. One of the commenters (A-90-19: IV-F-7.30) revealed that 90 percent of the respondents suffered from various health problems. The other commenter (A-90-19: IV-F-7.31) reported the following results: 35 percent ear infections; 39 percent skin rashes; 21 percent asthma; 43 percent vision problems; 46 percent allergies; 58 percent headaches; 30 percent respiratory problems; 4 percent cancer rate; 14 percent heart problems; 5 percent seizures; coughing spells, breathing disabilities in children, birth defects, and other illnesses.

Two commenters (A-90-19: IV-F-7.37; IV-F-7.39 and IV-F-12) urged consideration to be given to the cumulative effects of multiple chemicals. One commenter (A-90-19: IV-F-7.33) was especially concerned about the negative health effects from vinyl chloride. One commenter (A-90-19: IV-D-96) stated that in promulgating the final rule the EPA should consider that the incineration of organochlorine compounds creates more hazardous compounds such as dioxins and furans.

One commenter (A-90-19: IV-D-96) stated that the proposed HON failed to fully evaluate health impacts. Four commenters (A-90-19: IV-F-7.4; IV-F-7.5; IV-F-7.24; IV-F-12) suggested that public health or preventative health medicine should be the basis for, or at least a goal of, regulating the chemical industry. One commenter (A-90-19: IV-F-7.4) suggested that the regulation should err on the side of over-protecting public health, given the lack of information on, or conflicting interpretations of, existing information on

the effect of the regulated chemicals on human health. Two commenters (A-90-19: IV-D-96; IV-F-7.26) suggested that more studies should be done to determine synergistic effects on human health of chemicals released into the environment. One commenter (A-90-19: IV-F-7.32) was unsure how the EPA derives the allowable levels of chemicals that can be emitted into the air, since there are so many people who are dying of cancer. One commenter (A-90-19: IV-F-7.9) suggested that the HON should protect the health of workers at chemical plants and workers at non-SOCMI industrial plants located near chemical plants.

Response: The commenters have a legitimate concern and the EPA is also concerned with the health risks associated with HAP emissions. However, the study of risk assessment is still being developed. Congress decided in 1990 to base future air pollution regulations on maximum achievable control technology rather than on risk because debate regarding the methodology for risk assessment had virtually paralyzed the EPA. Emission standards were being delayed because of the controversy. Thus, the Congress specified in section 112(d) that standards should be technology-based.

However, the Congress also provided in section 112(f)(1) of the Act that the EPA should study: (1) methods for calculating residual risk, (2) available methods for reducing risk, and (3) data on actual health effects and results of applicable health studies. The EPA is required to report their findings in 1996 and to make recommendations on legislation regarding the remaining risk. In section 112(f)(2), the EPA is further required to promulgate additional standards for a source category if it is necessary to "provide an ample margin of safety to protect public health." The HON is, therefore, requiring the maximum achievable control technology, and a risk assessment has not been performed. However, the EPA will continue to study the

emission potential of the SOCOMI and, if necessary, will issue additional requirements in 2002.

Comment: Two commenters (A-90-19: IV-F-7.30; IV-F-7.42) expressed concern over the numerous accidental chemical/toxic releases that occur at nearby chemical companies.

Response: The EPA appreciates the commenters' concerns and is addressing accidental releases through a separate program established by Congress in the Act. Accidental releases are covered by the section 112(r) standard which has been proposed.

5.2.2.4 Group 1/Group 2 Points

Comment: Several commenters (A-90-19: IV-D-32; IV-D-54; IV-D-68; IV-D-73; IV-D-102; IV-D-112) praised the concept of Group 1 and Group 2 emission points. One commenter (A-90-19; IV-D-68) supported the concept of Group 1/Group 2 points as a means of setting priorities and requiring reductions and suggested the EPA maintain this concept. One commenter (A-90-19: IV-D-112) stated that the use of Group 1 and Group 2 distinctions accurately reflects the number and types of existing emission points and methods used to control those points. Another commenter (A-90-19: IV-D-102) stated that it reflects current best-industry practice. One commenter (A-90-19: IV-D-73) supported the concept of Group 1 and Group 2 emission points stating that it differentiates between significant emission points requiring control and insignificant emission points for which control is not required. One commenter (A-90-19: IV-D-32) stated that the Group 1/Group 2 distinction is an integral element of the MACT floor. The commenter (A-90-19: IV-D-32) also stated that the EPA's method for determining the floor using the Group 1/Group 2 concept is reasonable and acceptable. One commenter (A-90-19: IV-G-1) contended that nothing in the legislative history requires every emission point within a MACT process or major HAP source to be controlled by MACT. Another commenter

(A-90-19: IV-D-32) specified that section 112(d) of the Act does not require all emission points within a source to be controlled. One commenter (A-90-19: IV-D-102) contended that the costs of controlling emissions from Group 2 sources is not warranted and the Act does not require control of each and every emission point.

Response: The EPA thanks the commenters for their support.

5.2.3 Other

Comment: Two commenters (A-90-19: IV-F-7.18; IV-F-7.19) expressed concern that pollution is affecting the quality of rivers and fish.

Response: The Clean Water Act is the primary statute governing pollution of water. Thus, the HON, which is implemented through the Clean Air Act, is not the appropriate place for requirements on the quality of rivers and fish.

However, the EPA wishes to point out that in the HON impact analysis, the EPA evaluated whether air pollution controls required by the HON would create wastewater or solid waste impacts. The EPA determined that there would be negligible detrimental impacts.

Comment: Several commenters (A-90-19: IV-D-96; IV-F-7.1; IV-F-7.4; IV-F-7.5; IV-F-7.27 and IV-F-10; IV-F-7.40) mentioned that the HON should protect the environment. One commenter (A-90-19: IV-F-7.40) stated that the ecosystem risk assessment procedures have not been developed for any chemical. The commenter (A-90-19: IV-F-7.40) also stated that the HON rule fails to address atmospheric deposition and bioaccumulation of chemicals as they affect human and non-human endpoints.

Response: By significantly reducing emissions of HAP's, the HON will lessen the amount of chemicals released to the environment and therefore have a positive effect on the ecosystem. As discussed in previous responses, the HON is a

technology-based standard as required by the Act. Also as previously stated, risk assessment procedures are being studied and a residual risk analysis will be conducted 8 years after promulgation of the final rule.

Comment: Several commenters (A-90-19: IV-F-7.3; IV-F-7.8; IV-F-7.20; IV-F-7.22; IV-F-7.32; IV-G-14) expressed dissatisfaction with the nuisance caused by the bad odors or poor visibility associated with chemical production, and identified the odors as poisonous. Several commenters (A-90-19: IV-F-7.30; IV-F-7.32) discussed the noise pollution found around chemical companies, and noted that the roaring wakes them up in the middle of the night.

Response: Visibility issues related to VOC emissions would be addressed under the National Ambient Air Quality Standards. If an area is classified as non-attainment, State implementation plans are required to bring the area into attainment. The Clean Air Act also has provisions for PSD review of new sources to prevent deterioration of attainment areas. Visibility is considered in these reviews. Also, because the HON will reduce air pollutant emissions, the rule should have a positive effect on these areas.

The HON is promulgated under the CAA, and is focused on addressing air pollution. Controls required by the HON are not expected to increase noise impacts, but noise regulation is not within the legal scope of section 112 of the Act. Noise ordinances are usually State or local regulations.

5.3 GENERAL STRINGENCY

Comment: Several commenters (A-90-19: IV-D-32; IV-D-33; IV-D-63; IV-D-67; IV-D-72; IV-D-74; IV-D-78; IV-D-82; IV-D-83; IV-D-86; IV-D-89; IV-D-90; IV-D-93; IV-D-98; IV-D-100; IV-D-104; IV-D-106; IV-D-108; IV-D-113; IV-G-1) (A-90-23: IV-D-9) recognized the significance of the HON as a precedent-setting rule for future MACT standards. Several commenters specifically mentioned that the HON could influence the

refinery MACT standard (A-90-19: IV-D-63; IV-D-67; IV-D-113); future pulp and paper regulations (A-90-19: IV-D-98); future regulations covering can manufacturing (A-90-19: IV-G-1); and the pharmaceutical manufacturing MACT standard (A-90-19: IV-D-108). Two commenters (A-90-19: IV-D-83; IV-D-106) considered that much of the policy discussed in the HON is applicable and relevant to the development of future NESHAP for other source categories.

Several commenters (A-90-19: IV-D-63; IV-D-78; IV-D-80) cautioned the EPA against applying regulations similar to those proposed in the HON to other source categories without gathering appropriate process and industry-specific data. One commenter (A-90-19: IV-D-63) noted that the EPA had already recognized differences among industries with the equipment leak provisions. One commenter (A-90-19: IV-D-80) specifically mentioned that existing technologies in the paint and coating industry may not be suited for a regulation similar to the HON and that the small sizes of the firms in this industry may make regulations with extensive requirements economically unfeasible and inappropriate. The commenter (A-90-19: IV-D-80) asserted that recordkeeping requirements in the HON would require resource demands that smaller companies would not be able to meet. Another commenter (A-90-19: IV-D-82) asserted that the approach taken by the HON is not justified for the mining and mineral process industry.

Many commenters (A-90-19: IV-D-41; IV-D-43; IV-D-47; IV-D-49; IV-D-83; IV-D-93) expressed concern that future air toxics rules would suffer by following the precedent of the HON rule and would not control air toxic emissions strictly. Another commenter (A-90-19: IV-D-99) recognized that the HON rule is a comprehensive proposal that could have far-reaching benefits to the environment. However, the commenter (A-90-19: IV-D-99) contended that the proposed HON in its current form

contains significant problems that will prevent it from being as effective and stringent as it should be. One commenter (A-90-19: IV-D-49) requested that the EPA revise the proposed HON to address protection of public health and set precedents for future regulations of HAP's.

Response: The EPA recognizes that the HON is unique to the SOCOMI. MACT standards for each source category will be based on information from sources in that category. However, future standards may review the procedures and regulations in the HON for guidance.

Comment: Several commenters (A-90-19: IV-D-9; IV-D-10; IV-D-41; IV-D-43; IV-D-96; IV-D-118; IV-D-120; IV-D-123; IV-D-124; IV-D-125; IV-F-1.5; IV-F-7.1; IV-F-7.2; IV-F-7.3; IV-F-7.10 and IV-F-9; IV-F-7.29; IV-F-7.35; IV-F-7.36; IV-F-7.39 and IV-F-12; IV-F-7.44; IV-F-7.45; IV-G-14; IV-G-15) suggested that the HON does not reduce emissions enough and needs to strengthen its emissions standards; several commenters (A-90-19: IV-D-9; IV-D-11; IV-D-118; IV-D-120; IV-D-123; IV-D-124; IV-D-125; IV-F-7.23; IV-F-7.24; IV-F-7.25) urged the EPA to apply strict regulations. One commenter (A-90-19: IV-F-7.35) was concerned that the reductions under the Act will not be strong but will encourage polluters to practice phantom reductions. Two commenters (A-90-19: IV-D-41; IV-D-118) asserted that the HON was a weak rule, and the emissions reduction forecast by the EPA will remain elusive. One commenter (A-90-19: IV-D-120) contended that the HON illegally undermines the Act by allowing toxic emissions that Congress ordered cleaned. Several commenters (A-90-19: IV-D-9; IV-D-11; IV-D-43; IV-D-47; IV-D-96; IV-F-7.10 and IV-F-9; IV-F-7.39 and IV-F-12) expressed that the amount of chemicals that would be released annually under the HON is too much. One commenter (A-90-19: IV-F-7.33) urged the EPA to phase out the production of known carcinogens, stating that the production of them is immoral.

Another commenter (A-90-19: IV-F-7.40) urged the EPA to apply the policy solution used for lead, which is, as stated by the commenter, to reduce as much as possible, as fast as possible, whenever possible. One commenter (A-90-19: IV-F-7.4) expressed that the EPA must move quickly to get controls in place to reduce air pollutant emissions.

Several commenters (A-90-19: IV-F-7.1; IV-F-7.10 and IV-F-9; IV-F-7.12; IV-F-7.26; IV-F-7.27 and IV-F-10; IV-F-7.30) requested that the HON require zero toxics discharge. One commenter (A-90-19: IV-F-9) elaborated that the technology exists to eliminate toxics discharge. One commenter (A-90-19: IV-F-7.30) stated that companies can be productive while having zero emissions. One commenter (A-90-19: IV-F-7.1) stated that the problem with this rule is the underlying assumption that some pollution is okay, even if that pollution is avoidable. Two commenters (A-90-19: IV-D-118; IV-D-120) objected to the HON rule exempting over 35 million pounds of HAP's from control. Another commenter (A-90-19: IV-D-96) urged the EPA to adopt a HON rule with MACT standards that generate the 90 percent or better reductions required by Congress. The commenter (A-90-19: IV-F-7.15) also stated that the EPA must ensure a measure of pollution equity to citizens in States with large petrochemical industries. One commenter (A-90-19: IV-F-7.42) stressed that the HON rule must be strong enough to protect citizens living next door to the plant sites. One commenter (A-90-19: IV-F-1.5) stated that the proposed HON rule will not protect people living near chemical plants from toxic chemical air pollutants and claimed that this lack of protection in the proposed rule is a result of the chemical industry's influence on the proposed rulemaking. Another commenter (A-90-19: IV-F-7.21) contended that a strong HON would serve as a model for States that are developing their own programs and will support States with existing programs.

One commenter (A-90-19: IV-D-47) expressed concern that the EPA's first major air toxic standard did not strictly control emissions from areas already exposed to large amounts of air toxics and that a large number of emissions from the SOCFI industry are likely to continue to go unregulated. Three commenters (A-90-19: IV-D-41; IV-D-124; IV-D-125) specified that the SOCFI effects are localized in three States, but the EPA chose options other than total control, allowing emissions of 269 million pounds of HAP's annually. The commenter (A-90-19: IV-D-41) asserted that the EPA should reconsider the HON and make changes in order to provide an ample margin of safety for people in these States.

One commenter (A-90-19: IV-D-43) protested that the EPA's procedures and policies in the HON were flawed, and should not be allowed to remain. One commenter (A-90-19: IV-D-49) contended that the result of the HON's flaws is a regulatory proposal that is substantially weaker than Congress envisioned in crafting the Act. One commenter (A-90-19: IV-D-96) contended that the HON allows many loopholes which exempt many pollution sources and bring the standards below the Federal minimum or "floor" and are arguably illegal. Two commenters (A-90-19: IV-F-1.6 and IV-F-6) suggested that the EPA revise the HON requirements that go beyond the floor levels of control. Another commenter (A-90-19: IV-D-41) requested the EPA to withdraw the proposal and develop a substantially different approach.

One commenter (A-90-19: IV-F-7.41) stated that the HON will provide significant emissions reductions of air toxic pollutants.

Response: The final rule is estimated to reduce HAP emissions by 373,000 Mg/yr (89 percent nationwide) and to impose \$210 million/yr in annual control costs. The Act requires the EPA to consider costs, energy requirements, and non-air quality health and environmental impacts in

determining MACT. As shown in tables 6 and 7 of the promulgation preamble, the additional emission reduction that theoretically could be achieved in the SOCFI would cost \$16,000/Mg. Further control would also cause a significant increase in energy demand. Thus, the EPA decided against requiring control of all emission points. The EPA believes that the final rule is achievable and meets the statutory criteria.

The EPA thinks that the impression some commenters have that the rule has loopholes and illegal exemptions results from a misunderstanding regarding the definition of the SOCFI source category. Some specific examples of loopholes and exemptions given by the commenters were sources in other source categories such as marine loading and petroleum refining. The EPA would like to make clear that the HON is intended to apply only to the SOCFI source category. The reader is referred to chapter 2 of this BID volume for further discussion of the SOCFI source category.

Comment: Two commenters (A-90-19: IV-D-90; IV-D-100) contended that the combination of the flexible regulatory features incorporated into the HON will result in one of the most complex regulations ever developed for State programs to implement, monitor, and enforce. The commenter (A-90-19: IV-D-90; IV-D-100) contended that unless the EPA's approach is not adequately revised to provide a less complex regulation that is both protective of the public health and enforceable, States may not seek delegation to administer the HON and will simply continue administering their more stringent program requirements.

One commenter (A-90-19: IV-D-115) recognized the need to make the HON consistent nationally, but contended that it was important that the proposed HON not undermine existing State or regions regulations.

Response: In response to commenters' concerns, the EPA has revised many of the provisions in the final rule including: changes to the emissions averaging provisions; simplification of monitoring, recordkeeping, and reporting requirements; and clarification of requirements for overlapping regulations. In addition, the EPA will provide support documents to help regulatory agencies and industry understand the HON provisions.

The EPA believes these changes significantly simplify and clarify the final rule. Even with these revisions, the EPA recognizes that the final rule is still large and contains many complexities. However, such complexity and size are necessary if an industry as large, complex, and broad as the SOCOMI is to be regulated effectively.

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6.0 COORDINATION WITH OTHER CAA REQUIREMENTS

6.1 NESHAP GENERAL PROVISIONS

Comment: Many commenters (A-90-19: IV-D-26; IV-D-29; IV-D-32; IV-D-50; IV-D-54; IV-D-57; IV-D-59; IV-D-61; IV-D-62; IV-D-63; IV-D-64; IV-D-69; IV-D-73; IV-D-74; IV-D-75; IV-D-77; IV-D-87; IV-D-112; IV-D-113; IV-F-1.1 and IV-F-3) disapproved of the EPA's not proposing and/or promulgating the General Provisions for 40 CFR part 63 prior to proposing the HON. Some commenters (A-90-19: IV-D-50; IV-D-63; IV-D-87; IV-D-113; IV-F-1.1 and IV-F-3) asserted that the General Provisions contain critical requirements that should be considered in conjunction with the HON. Five commenters (A-90-19: IV-D-26; IV-D-36; IV-D-54; IV-D-57; IV-D-59; IV-D-63; IV-D-92; IV-D-113) claimed that they could not fully comment on the HON because the General Provisions were not available for review.

A few commenters (IV-D-32; IV-D-57; IV-D-62; IV-D-75; IV-D-92; IV-D-113) argued that it was a violation of the Administrative Procedures Act for the EPA to reference an unpromulgated regulation. Two commenters (A-90-19: IV-D-32; IV-D-92) also contended that cross-references to the General Provisions violate the requirements of 1 CFR 21.21(a), which prohibits ambiguous references and 40 CFR 51.1, which governs how materials are incorporated by references into Federal regulations. One commenter (A-90-19: IV-D-87) stated that the HON could not be implemented or enforced without the General Provisions being finalized.

Several commenters (A-90-19: IV-D-26; IV-D-50; IV-D-59; IV-D-63; IV-D-64; IV-D-74; IV-D-77; IV-D-87) stated that the EPA must allow and consider public comments on the General Provisions before promulgating the HON. A number of commenters (A-90-19: IV-D-26; IV-D-32; IV-D-36; IV-D-50; IV-D-54; IV-D-57; IV-D-59; IV-D-63; IV-D-64; IV-D-69; IV-D-77; IV-D-113) suggested extending the HON comment period or reopening the HON comment period once the General Provisions have been proposed. As an alternative, some commenters suggested removing all references in the HON to the General Provisions (A-90-19: IV-D-32; IV-D-62; IV-D-73; IV-D-75; IV-D-113); incorporating the requirements directly to the HON (A-90-19: IV-D-54; IV-D-73; IV-D-112); specifying in the final HON which requirements of the General Provisions will apply to HON sources (A-90-19: IV-D-33; IV-F-1.1 and IV-F-3) and/or re-proposing the HON (A-90-19: IV-D-54; IV-D-64). Other commenters (A-90-19: IV-D-32; IV-D-54; IV-D-57; IV-D-69; IV-D-75) recommended revising the HON to state that the HON will supersede any subsequent General Provisions.

Response: At the time the HON was proposed, the General Provisions had not yet been proposed. However, the General Provisions were proposed on August 11, 1993, and on October 15, 1993 (58 FR 53478) the EPA published in the Federal Register a notice reopening the HON public comment period for 30 days. This reopening provided an opportunity for the public to review the cross-referenced General Provisions and submit comments on the overlap between the HON and the General Provisions. The final General Provisions are being promulgated at the same time as the HON. Therefore, the cross-references in the promulgated HON will not be ambiguous. As detailed in the following response, the HON has been revised to more clearly state which General Provisions sections do and do not apply.

Comment: Many commenters (A-90-19: IV-D-33; IV-F-1.1 and IV-F-3; IV-K-6; IV-K-19; IV-K-21; IV-K-24; IV-K-27; IV-K-28; IV-K-34; IV-K-47; IV-K-49; IV-K-56; IV-K-57; IV-K-61; IV-K-66; IV-K-70 and IV-K-76; IV-K-73) contended that the EPA has an obligation to clearly specify in the HON subparts F, G, and H which General Provisions sections apply. The commenters disagreed with language in the proposed HON rule whereby the General Provisions apply in all circumstances except when superseded by specific HON requirements. The commenters contended that the proposed HON does not explicitly override some sections of the General Provisions that are in conflict with HON provisions and said that this will cause confusion. The commenters stated that confusion and misunderstanding among the regulators and regulated community as to which General Provisions sections apply would be avoided if the HON clearly listed those specific parts of the General Provisions that are applicable.

To assist the EPA in determining which specific General Provisions should or should not apply to the HON, several commenters (A-90-19: IV-K-21; IV-K-66; IV-K-70 and IV-K-76) provided tables or lists containing this information. Commenters contended that if the EPA decided against identifying the particular General Provisions that apply, then additional General Provisions that were not overridden at proposal would need to be overridden because they are not applicable. Several commenters (A-90-19: IV-D-26; IV-D-29; IV-D-33; IV-D-59; IV-D-87; IV-D-97) listed several sections of the HON that refer to the requirements of the General Provisions or overlap/conflict with the General Provisions and are of specific concern. Two commenters (A-90-19: IV-K-21; IV-K-70) stated that the complexity of the part 63 General Provisions far exceeds that of the part 60 or 61 General Provisions.

Response: In order to reduce confusion about which General Provisions sections apply to the HON, a table containing this information has been added to subpart F of the final rule. Table 6-1, presented here, is the same as table 3 of subpart F. The specific tables and comments submitted by the commenter were considered in developing the table. The table clarifies EPA's intent by listing the General Provisions sections, stating whether they apply or not, and providing additional clarifying information for some of the requirements.

TABLE 6-1. GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H

Reference	Applies to Subparts F, G, and H ^a	Comment
63.1(a)(1)	Yes	Overlap clarified in §63.101, §63.111, §63.161
63.1(a)(2)	Yes	
63.1(a)(3)	Yes	§63.110 and §63.160(b) of subparts G and H identify which standards are overridden
63.1(a)(4)	No	Subpart F specifies applicability of each paragraph in subpart A to subparts F, G, and H
63.1(a)(5) - (a)(9)	No	
63.1(a)(10)	No	Subparts F, G, and H specify calendar or operating day
63.1(a)(11)	No	Subpart F §63.103(d) specifies acceptable methods for submitting reports ^a
63.1(a)(12) - (a)(14)	Yes	
63.1(b)(1)	No	Subpart F specifies applicability
63.1(b)(2)	Yes	
63.1(b)(3)	No	
63.1(c)(1)	No	Subpart F specifies applicability
63.1(c)(2)	No	Area sources are not subject to subparts F, G, and H
63.1(c)(3)	No	
63.1(c)(4)	Yes	
63.1(c)(5)	No	Subparts G and H specify applicable notification requirements
63.1(d)	No	
63.1(e)	No	Subparts F, G, and H established before permit program

TABLE 6-1. GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H (CONTINUED)

Reference	Applies to Subparts F, G, and H ^a	Comment
63.2	Yes	Subpart F §63.103 specifies those subpart A definitions that apply to the HON. Subpart F definition of "source" is equivalent to subpart A definition of "affected source"
63.3	No	Units of measure are spelled out in subparts F, G, and H
63.4(a)(1) - (a)(3)	Yes	
63.4(a)(4)	No	
63.4(a)(5)	Yes	
63.4(b)	Yes	
63.4(c)	Yes	
63.5(a)(1)	Yes	Except replace term "source" and "stationary source" in §63.5(a)(1) of subpart A with "affected source"
63.5(a)(2)	Yes	
63.5(b)(1)	Yes	
63.5(b)(2)	No	
63.5(b)(3)	Yes	
63.5(b)(4)	Yes	Except the cross reference to §63.9(b) is changed to §63.9(b)(4) and (5). Subpart F overrides §63.9(b)(2) and (b)(3)
63.5(b)(5)	Yes	
63.5(b)(6)	Yes	
63.5(c)	No	
63.5(d)(1) (i)	No	Subpart G §63.151(b)(2)(ii) and (2)(iii) specify the applicability and timing of this submittal for sources subject to subpart G

TABLE 6-1. GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H (CONTINUED)

Reference	Applies to Subparts F, G, and H ^a	Comment
63.5(d)(1)(ii)	Yes	Except that for affected sources subject to subpart G instead of the information in §63.5(d)(1)(ii)(H), submit the Implementation Plan information specified in §63.151(e)
63.5(d)(1)(iii)	No	Subpart G requires submittal of the Notification of Compliance Status in §63.152(b)
63.5(d)(2)	No	
63.5(d)(3)	Yes	Except §63.5(d)(3)(ii) does not apply to subpart G
63.5(d)(4)	Yes	
63.5(e)	Yes	
63.5(f)(1)	Yes	
63.5(f)(2)	Yes	
63.5(f)(3)	Yes	Except the cross-reference to §63.5(d)(1) is changed to §63.151(b)(ii) of subpart G, and the cross-reference to (b)(2) does not apply
63.5(f)(4)	Yes	
63.6(a)	Yes	
63.6(b)(1)	No	Subparts F and H specify compliance dates for sources subject to subparts F, G, and H
63.6(b)(2)	No	
63.6(b)(3)	Yes	
63.6(b)(4)	No	May apply when standards are proposed under section 112(f) of the Act
63.6(b)(5)	No	Subparts G and H include notification requirements
63.6(b)(6)	No	
63.6(b)(7)	No	

TABLE 6-1. GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H (CONTINUED)

Reference	Applies to Subparts F, G, and H ^a	Comment
63.6(c)(1)	No	Subpart F specifies the compliance date
63.6(c)(2)	No	
63.6(c)(3)	No	
63.6(c)(4)	No	
63.6(c)(5)	Yes	
63.6(d)	No	
63.6(e)	Yes	Does not apply to Group 2 emission points unless they are included in an emissions average ^b
63.6(f)(1)	No	§63.102(a) of subpart F specifies when the standards apply
63.6(f)(2)(i)	Yes	
63.6(f)(2)(ii)	Yes	§63.151(c)(2) of subpart G specifies the use of monitoring data in determining compliance with subpart G
63.6(f)(2)(iii)(A), (B), and (C)	Yes	
63.6(f)(2)(iii)(D)	No	
63.6(f)(2)(iv)	Yes	
63.6(f)(2)(v)	Yes	
63.6(f)(3)	Yes	
63.6(g)	No	Procedures specified in §63.102(b) of subpart F
63.6(h)	No	
63.6(i)(1)	Yes	
63.6(i)(2)	Yes	

TABLE 6-1. GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H (CONTINUED)

Reference	Applies to Subparts F, G, and H ^a	Comment
63.6(i)(3)	No	§63.151(a)(6) of subpart G specifies procedures
63.6(i)(4)(i)(A)	Yes	
63.6(i)(4)(i)(B)	No	Dates are specified in §63.151(a)(6) of subpart G
63.6(i)(4)(ii)	No	
63.6(i)(5) - (14)	Yes	
63.6(i)(15)	No	
63.6(i)(16)	Yes	
63.6(j)	Yes	
63.7(a)(1)	No	Subparts F, G, and H specify required testing and compliance demonstration procedures
63.7(a)(2)	No	Test results must be submitted in the Notification of Compliance Status due 150 days after compliance date, as specified in §63.152(b) of subparts G and H
63.7(a)(3)	Yes	
63.7(b)	No	
63.7(c)	No	
63.7(d)	Yes	
63.7(e)(1)	Yes	
63.7(e)(2)	Yes	
63.7(e)(3)	No	Subparts F, G, and H specify test methods and procedures
63.7(e)(4)	Yes	
63.7(f)	No	Subparts F, G, and H specify applicable methods and provide alternatives

TABLE 6-1. GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H (CONTINUED)

Reference	Applies to Subparts F, G, and H ^a	Comment
63.7(g)	No	Performance test reporting specified in §63.152(b) of subparts G and H
63.7(h)(1)	Yes	
63.7(h)(2)	Yes	
63.7(h)(3)	No	§63.103(b)(5) of subpart F specifies provisions for requests to waive performance tests
63.7(h)(4)	No	
63.7(h)(5)	Yes	
63.8(a)(1)	Yes	
63.8(a)(2)	No	
63.8(a)(3)	No	
63.8(a)(4)	Yes	
63.8(b)(1)	Yes	
63.8(b)(2)	No	Subparts G and H specify locations to conduct monitoring
63.8(b)(3)	Yes	
63.8(c)(1)(i)	Yes	
63.8(c)(1)(ii)	No	Addressed by periodic reports in §63.152(c) of subpart G
63.8(c)(1)(iii)	Yes	
63.8(c)(2)	Yes	
63.8(c)(3)	Yes	
63.8(c)(4)	No	HON specifies monitoring frequency in §63.111 and §63.152(f) of subpart G
63.8(c)(5) - (c)(8)	No	
63.8(d)	No	
63.8(e)	No	

TABLE 6-1. GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H (CONTINUED)

Reference	Applies to Subparts F, G, and H ^a	Comment
63.8(f)(1) - (f)(3)	Yes	
63.8(f)(4) (i)	No	Timeframe for submitting request specified in §63.152(g)(1) of subpart G
63.8(f)(4) (ii)	Yes	
63.8(f)(4) (iii)	No	
63.8(f)(5) (i)	Yes	
63.8(f)(5) (ii)	No	
63.8(f)(5) (iii)	Yes	
63.8(f)(6)	No	Subparts G and H do not require CEM's
63.8(g)	No	Data reduction procedures specified in §63.152(f) of subpart G
63.9(a)	Yes	
63.9(b)(1) (i)	No	Specified in §63.151(b)(2)(ii) of subpart G
63.9(b)(1) (ii)	No	
63.9(b)(2)	No	Initial Notification provisions are specified in §63.151(b) of subpart G
63.9(b)(3)	No	
63.9(b)(4)	Yes	Except that the notification in §63.9(b)(4)(i) shall be submitted at the time specified in §63.151(b)(2)(ii) of subpart G

TABLE 6-1. GENERAL PROVISIONS APPLICABILITY TO SUBPARTS F, G, AND H (CONTINUED)

Reference	Applies to Subparts F, G, and H ^a	Comment
63.9(b)(5)	Yes	Except that the notification in §63.9(b)(5) shall be submitted at the time specified in §63.151(b)(2)(ii) of subpart G
63.9(c)	Yes	
63.9(d)	Yes	
63.9(e)	No	
63.9(f)	No	
63.9(g)	No	
63.9(h)	No	§63.152(b) of subpart G specifies Notification of Compliance Status requirements
63.9(i)	Yes	
63.9(j)	No	
63.10(a)	Yes	
63.10(b)(1)	No	§63.103(c) of subpart F specifies record retention requirements
63.10(b)(2)	No	§63.103(c) of subpart F specifies required records
63.10(b)(3)	No	
63.10(c)	No	
63.10(d)(1)	No	
63.10(d)(2)	No	§63.152(b) of subpart F specifies performance test reporting
63.10(d)(3)	No	
63.10(d)(4)	Yes	
63.10(d)(5)(i)	Yes	Except that reports required by §63.10(d)(5)(i) shall be submitted at the time specified in §63.152(c) of subpart G
63.10(d)(5)(ii)	Yes	
63.10(e)	No	

TABLE 6-1. GENERAL PROVISIONS APPLICABILITY TO
SUBPARTS F, G, AND H (CONCLUDED)

Reference	Applies to Subparts F, G, and H ^a	Comment
63.10(f)	Yes	
63.11 - 63.15	Yes	

^aWherever subpart A specifies "postmark" dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not necessarily required.

^bThe plan, and any records or reports of start-up, shutdown, and malfunction do not apply to Group 2 emission points unless they are included in an emissions average.

Comment: One commenter (A-90-19: IV-D-29) cautioned the EPA that the draft General Provisions require that all data be retained, while the HON requires that all applicable data be retained. The commenter (A-90-19: IV-D-29) stated that a plant operator would feel obligated to keep specific records for the HON and all records to meet the requirements of the General Provisions.

Four commenters (A-90-19: IV-K-6; IV-K-21; IV-K-66; IV-K-70) expressed confusion on whether to comply with the definitions in the General Provisions or the HON if definitions appear contradictory (i.e., definition of "process unit shutdown" in subparts G and H and definition of "shutdown" in subpart A).

Two commenters (A-90-19: IV-K-6; IV-k-66) requested clarification for those situations when General Provisions sections are not overridden by the HON, but refer to parts of the General Provisions that are overridden.

Response: For the HON, the source is required to retain only those records that are specified in subparts F, G, and H or in sections of the NESHAP General Provisions that the HON does not override. The EPA has overridden those sections of the General Provisions that do not apply to HON sources. For example, subpart F of the HON specifically overrides the General Provisions recordkeeping requirements in §63.10(b)(2) and (c) of subpart A, which pertain to continuous monitoring systems. Therefore, sources with continuous monitoring systems would keep the records specified in subparts F, G, and H rather than those specified in the General Provisions. Section 63.103(c) of subpart F specifies the required records for HON.

The final HON rule has clarified which General Provisions definitions apply to the HON by including a list of the applicable General Provisions definitions in §63.101 of subpart F of the HON. The definition of "shutdown" contained

in the General Provisions has been overridden by the HON definitions contained in §63.101 of subpart F.

Once a section of the General Provisions has been overridden by the HON, that section will never apply to the HON. If an applicable General Provisions section refers to parts of the General Provisions that have been overridden, the overridden section will not apply to the HON. The comments column on table 3 of subpart F clarifies some specific cross-referencing issues.

Comment: Several commenters (A-90-19: IV-K-27; IV-K-34; IV-K-66; IV-K-70) expressed concern that while some emission points, such as Group 2 emission points, are exempt entirely or subject only to minimal HON recordkeeping and reporting requirements, it appears they would still be subject to the General Provisions recordkeeping and reporting requirements.

Response: Subparts F and G specify what recordkeeping and reporting is required for Group 2 emission points. To provide further clarification, §63.103(c)(3) and table 3 of subpart F state that start-up, shutdown, and malfunction plans, subsequent records of start-up, shutdown, and malfunction, and records of monitoring system calibration and maintenance do not apply to Group 2 emission points. It was not intended that Group 2 emission points, which are not required to control emissions, should be subject to these General Provisions and subpart F monitoring, recordkeeping, and reporting requirements. Provisions have also been added in §63.100(f) and (j) of subpart F to clarify that subparts F, G, and H do not require processes or emission points that are not part of a source subject to HON to comply with the General Provisions.

Comment: One commenter (A-90-19: IV-K-66) contended that the 30 day reopening of the comment period to address overlap between the HON and the General Provisions was too short a period. The commenter (A-90-19: IV-K-66) requested

that they be allowed to submit additional comments after the comment period ends. Another commenter (A-90-19: IV-K-24) requested that the HON comment period be reopened once the General Provisions have been promulgated to allow comment on changes made to the General Provisions between proposal and promulgation that may affect the HON.

Response: The EPA considers the 30 day comment period adequate. The EPA is not legally obligated to address comments received after the comment period closes, however, the EPA will attempt to respond to comments that are received. The HON and the General Provisions have been promulgated simultaneously, so it was not possible to reopen the HON comment period after finalization of the General Provisions.

Comment: Two commenters (A-90-19: IV-K-10; IV-K-66) recommended that all references to the General Provisions in the HON be reviewed and any inaccuracies be corrected.

Response: The EPA reviewed all references to the General Provisions prior to promulgation and made changes as appropriate.

Comment: One commenter (A-90-19: IV-K-24) contended that the HON will impose "grossly unreasonable" recordkeeping and reporting burdens, due to requirements in the General Provisions.

Two commenters (A-90-19: IV-K-6; IV-K-28) estimated that as much as \$3.3 million may be required for sources to determine the interrelationship between the HON and the General Provisions.

Another commenter (A-90-19: IV-K-57) estimated that the task of determining the interrelationship between the HON and the General Provisions would require three to six months of effort per impacted manufacturing unit and substantially increase the risk of noncompliance.

Response: In response to comments, subpart F of the final rule contains a table (table 3) which specifies the

specific provisions in the General Provisions that apply and those that do not apply to HON sources. Therefore, it will not be necessary for a source to spend valuable resources to determine the interrelationship between the HON and the General Provisions, as some commenters feared.

Comment: One commenter (A-90-19: IV-K-57) suggested that the HON rule contain provisions requiring the EPA to respond to questions concerning the overlap between the General Provisions and MACT standards within 30 days.

Response: The final rule and this BID volume contain a table showing which specific General Provisions sections apply to subparts F, G, and H. The table states whether each section applies or whether the General Provisions are overridden by the HON. The EPA developed this table in response to the numerous public comment letters requesting clarification of the relationship between the HON and the General Provisions. The HON does not require the EPA to respond to questions concerning overlap of the General Provisions and the HON within 30 days; however, an owner or operator will receive a response from the EPA within a reasonable amount of time.

Comment: One commenter (A-90-19: IV-K-28) considered that consistency exists between the HON and proposed General Provisions. However, the commenter (A-90-19: IV-K-28) contended that they cannot determine the true impact of these two regulations nor evaluate the potential conflicts between them due to the segmented and disjointed manner in which the regulations have been proposed.

Response: Both proposed rules were published in the Federal Register and were made available for public comment. Also, as mentioned above, the EPA reopened the HON public comment period to receive comments on how the HON and the General Provisions will work together. The EPA believes that affected implementing agencies, environmental groups, owners,

and operators have had ample opportunity to analyze the interactions in the two rules, and to comment on them. All comments were analyzed by the EPA and appropriate changes were incorporated into the final HON rule where applicable.

6.2 SECTION 112(g) MODIFICATIONS

Comment: Two commenters (A-90-19: IV-D-56; IV-D-86) suggested that the EPA provide definitions for "modification" and "reconstruction" as they apply to new and existing sources in the final HON rule as a guideline for industry. Another commenter (A-90-19: IV-D-74) requested that the definitions of construction and reconstruction be identical for all Title III provisions. One commenter (A-90-19: IV-D-92) contended that if a change occurs in incremental HAP emissions which are not offset, it is not clear if this situation constitutes a modification.

Two commenters (A-90-19: IV-K-66; IV-K-70) expressed concern about what constitutes a new versus an existing source. The commenters (A-90-19: IV-K-66; IV-K-70) contended that the definitions of "affected source," "reconstruction," and "existing source" proposed in the General Provisions create confusion and uncertainty and confuse the issue by suggesting that preconstruction review and approval may be required for "sources" that are constructed or changed after proposal of the HON. One of the commenters (A-90-19: IV-K-66) was concerned that the General Provisions may be interpreted to require compliance with new source MACT upon startup.

Response: The EPA considers the Act and the General Provisions for 40 CFR part 63 to provide sufficient clarification on the relationship between the HON and section 112(g) of the Act. This topic is also discussed in the preamble to the final rule. The EPA has added new provisions to §63.100(l) of subpart F to clarify the procedures for determining whether a chemical manufacturing

process unit that is added to a plant site or a change made to an existing chemical manufacturing process unit is subject to the provisions for new or existing sources. Section 112(a) of the Act provides a definition for modification and §63.2 of the General Provisions provides a definition for reconstruction. Sources subject to the HON are required to follow the requirements of the Act and the sections of the General Provisions identified in subpart F, so it is not necessary to add these definitions to the HON. The HON provisions in subpart F refer to the General Provisions definition of reconstruction. The meaning of "source" and "affected source" for purposes of the HON have been clarified in the definition list in §63.100 of subpart F. Thus, the commenter's concerns regarding definitions and clarification of the determination of new versus existing source status have been addressed in the HON rule.

Comment: Two commenters (A-90-19: IV-D-90; IV-D-100) suggested that the EPA review the guideline currently being developed for establishing case-by-case MACT for section 112(g) of the Act to provide consistency in establishing the MACT floor and standard in Title III provisions. One commenter (A-90-19: IV-D-73) urged the EPA to state clearly in the HON that the HON is the MACT determination for the purposes of 112(g)(2)(a) of the Act, and that there is no need for a separate MACT determination if a SO2 source is modified.

Response: The EPA agrees that a separate MACT determination is not necessary if a source is modified. However, the Act does not allow the EPA to override section 112(g)(2)(a) in the HON. Section 112(g)(2)(a) of the Act requires that "After the effective date of a permit program under Title V in any State, no person may modify a major source of hazardous air pollutants in such State, unless the Administrator (or the State) determines that the maximum

achievable control technology emission limitation under this section for existing sources will be met. Such determination shall be made on a case-by-case basis where no applicable emissions limitations have been established by the Administrator." The EPA interprets the Act to require that where a source is covered by the HON, any modifications made to the source must continue to meet the emission reductions required by the HON for existing sources. For example, if an existing Group 1 transfer rack is modified and is still a Group 1 transfer rack, the rack will still be required to achieve 98 percent reduction of HAP's or use vapor balancing to control emissions. In the future, the EPA will prepare a guidance document for clarification on section 112(g) requirements. The EPA does not consider the HON an appropriate place to provide such guidance.

Comment: One commenter (A-90-19: IV-D-74) cautioned that the definition of source relating only to specific processes at a plant site leaves some ambiguity regarding how the emissions which are not regulated by the HON at a particular location are to be evaluated under future MACT regulations and section 112(g) standards. The commenter (A-90-19: IV-D-74) asked whether such emissions would be considered area sources in future MACT rules and what emissions would be available for offsets under section 112(g).

Response: The Act defines both major source and area source. If a plant site meets the definition of major source, it will be regulated as a major source under any applicable MACT standards. Plant sites that are considered area sources could be covered under other emission standards that regulate area sources. For example, if within a petroleum refinery plant site that is a major source, there are emission points associated with SOCFI processes, the SOCFI emission points would be regulated under the HON and the refinery emission points would be regulated under the refinery MACT standard.

Comment: One commenter (A-90-19: IV-D-92) suggested incorporating a *de minimis* emission increase concept for minor modifications. The commenter (A-90-19: IV-D-92) contended that these modifications, which should be allowed only with notification, would have to be consistent with existing permitting requirements.

Response: The EPA does not consider the HON an appropriate place to discuss minor modifications. In the future, the EPA will prepare a guidance document for clarification on section 112(g) requirements. The reader is referred to this document for additional guidance regarding section 112(g).

6.3 PREVENTION OF SIGNIFICANT DETERIORATION/NEW SOURCE REVIEW

Comment: Two commenters (A-90-19: IV-D-32; IV-D-75) claimed that the EPA has not fully considered the multimedia impacts of using the RCT's in the HON. One commenter (A-90-19: IV-D-32) provided results of an analysis showing extensive multimedia impacts. Three commenters (A-90-19: IV-D-6; IV-D-75; IV-D-86) contended that compliance with the HON will require combustion of all air toxics emissions. Two commenters (A-90-19: IV-D-32; IV-D-71; IV-D-92) also stated that combusting emission streams will increase CO and NO_x emissions. Several commenters (A-90-19: IV-D-6; IV-D-32; IV-D-46; IV-D-75; IV-D-86; IV-D-92) contended that increases of CO and NO_x emissions in CO and ozone non-attainment areas will require sources to secure an NSR permit, and increases in attainment areas will require sources to undergo a PSD permit review. Another commenter (A-90-19: IV-D-46) expressed concern that emissions increases will trigger NSPS.

One commenter (A-90-19: IV-D-6) claimed that NSR and PSD determination may require impacts analysis, air emissions modeling, and even a Federal Land Manager review. Several commenters (A-90-19: IV-D-6; IV-D-32; IV-D-71; IV-D-86; IV-D-92) claimed that sources would also be required to obtain

offsets for NO_x emission increases. Four commenters (A-90-19: IV-D-32; IV-D-50; IV-D-86; IV-D-92) stated that offsets may not be available. One commenter (A-90-19: IV-D-50) contended that offsets may not be available because of prior State and Federal regulations. Another commenter (A-90-19: IV-D-86) stated that small facilities in urban areas are unlikely to have other sources of NO_x credits to offset NO_x increases. The commenter (A-90-19: IV-D-86) also stated that markets for NO_x credits are either nonexistent, or in early stages of development, and purchased NO_x credits may not be available to many facilities. The commenter (A-90-19: IV-D-86) concluded that if credits are available, the cost of purchasing them has not been incorporated into the HON's economic assessment.

Two commenters (A-90-19: IV-D-6; IV-D-86) expressed concern that NSR and PSD would require BACT/LAER determination. Three commenters (A-90-19: IV-D-6; IV-D-46; IV-D-86) claimed that BACT/LAER determinations would require SCR and SNCR technologies to be implemented. Three commenters (A-90-19: IV-D-6; IV-D-86; IV-D-92) contended that this was tantamount to forcing a control on a control. Another commenter (A-90-19: IV-D-46) contended that use of SCR for NO_x control requires use of ammonia, and ammonia storage above 10,000 lbs will subject a facility to various requirements under EPCRA and SARA. The commenter (A-90-19: IV-D-46) claimed that this would result in regulatory compound jeopardy.

Response: The EPA did analyze the multimedia impacts of applying the RCT's. The results of the analysis indicated that emissions from only 6 percent of the process vents would exceed the PSD NO_x cut-off of 40 tpy in non-attainment zones, and none of the process vents would exceed the CO emissions cut-off of 100 tpy. None of the transfer racks were determined to exceed the NO_x or CO emission cut-off levels. Based on these results, the EPA does not consider that control

of secondary impacts of applying the RCT's will significantly impact the cost of compliance with the HON. The EPA maintains that the approach for estimating impacts that was presented in the proposed HON is sufficient for rulemaking purposes.

In addition, the HON provisions for process vents and transfer operations require 98 percent control. They do not necessarily require combustion. A facility has the choice of applying the RCT or using any technology that achieves an equivalent emission reduction.

Comment: Three commenters (A-90-19: IV-D-6; IV-D-32; IV-D-92) suggested that the EPA allow RACT determination rather than a BACT/LAER analysis for NSR or PSD for combustion control devices installed to comply with the HON. Two commenters (A-90-19: IV-D-6; IV-D-32) reasoned that RACT determination would not require case-by-case determination by the EPA. One commenter (A-90-19: IV-D-6) contended that only a small incremental NO_x reduction would be gained by forcing small firms to comply with BACT/LAER versus RACT. The commenter (A-90-19: IV-D-6) suggested that implementation of the HON should require only the appropriate change in existing operating permits rather than an NSR permit.

One commenter (A-90-19: IV-D-46) stated that the EPA is considering changes to the NSR program by excluding projects that are considered environmentally beneficial. The commenter (A-90-19: IV-D-46) explained that, in a previous case, the EPA recognized the installation of equipment designed to reduce pollutants and improve the environment as a desired action that should not be unduly discouraged by regulation. The commenter (A-90-19: IV-D-46) asserted that the installation of MACT fits into the definition of environmentally beneficial, and as such should not be considered a modification, and therefore should not require an NSR permit. One commenter (A-90-19: IV-D-86) recommended adding the following language to §63.100 of the HON:

Control equipment installed on existing equipment pursuant to subparts F and G of this part will not constitute "new construction" or a modification "pursuant to 40 CFR 51 subpart I, and are thereby exempt from non-attainment and PSD/NSR permitting requirements."

Response: The EPA thanks the commenters for their suggestions. The NSR/PSD requirements are being reviewed by the EPA. Until changes are made to the NSR/PSD program, the EPA has decided that sources requesting exemptions will be handled on a case-by-case basis. Where a source merits it, the EPA will consider exclusions from some NSR/PSD requirements. The requirements of a BACT or LAER analysis must still be met if NSR and PSD regulations are triggered by increased CO or NO_x emissions.

Comment: Several commenters (A-90-19: IV-D-46; IV-D-50; IV-D-75; IV-D-86) contended that the HON cost analysis did not consider the additional expenses of controls and offsets for secondary pollutants resulting from control devices installed to comply with the HON. Three commenters (A-90-19: IV-D-6; IV-D-46; IV-D-86) asserted that the cost for applying BACT or LAER technology for control of NO_x would be significant. Two commenters (A-90-19: IV-D-6; IV-D-86) claimed that such costs would make compliance unaffordable for many small firms. One commenter (A-90-19: IV-D-71) claimed that the addition of NO_x controls and/or offsets to the burden already presented in the proposed HON is unreasonable and exceeds the intent of Congress.

Response: The commenters are correct in their contention that the EPA did not consider the additional costs associated with controlling secondary pollutants. However, the EPA did determine that secondary impacts would only affect 6 percent of the process vents. The EPA does not consider the cost from so few sources to significantly impact the cost results presented in the proposal preamble.

In addition, there was no reasonable way to estimate the cost of controlling secondary impacts because such costs are generally site-specific, and the EPA did not have the level of information necessary to do a site-specific cost analysis. There would also be no way of extrapolating site-specific information to estimate nationwide impacts.

Comment: Three commenters (A-90-19: IV-D-32; IV-D-50; IV-D-75) indicated that the PSD and NSR permit review processes would increase the amount of time needed for a source to comply with the HON. One commenter (A-90-19: IV-D-50) suggested that the EPA allow an extension of the deadline for such permitting delays. Another commenter (A-90-19: IV-D-75) stated that sources may not be able to comply with the HON because they are waiting on permits for emissions.

Response: The EPA recognizes that a HON source choosing to install a combustion device may need a pre-construction permit requiring either PSD or NSR review and that this may require considerable time to obtain. However, the EPA has determined that because only a few sources would be affected by PSD or NSR permitting, it was not necessary to include any specific provisions or exemptions for such sources in the HON.

The EPA considers PSD and NSR concerns to be best-handled on a site-specific basis. An individual source may cite the delays involved with obtaining PSD or NSR permits in requesting extensions from the EPA. Under the Pollution Control Project exclusion section of the NSR regulations, States will have the flexibility to consider overall environmental benefits of pollution control projects and may not require a source to obtain preconstruction permits under PSD or NSR. States may also show some flexibility in the BACT or LAER decision that is made.

Also, sources do have alternatives to installing combustion devices when complying with the HON. For example,

sources may increase product recovery or use existing control equipment.

Comment: One commenter (A-90-19: IV-D-32) recommended adding language to subpart F that would allow emission points to remain uncontrolled if negative environmental impacts would be greater with the RCT than without it.

Response: The EPA does not consider the commenter's suggestion to be consistent with the requirements of the Act. The Act does not allow the EPA to differentiate between toxicity of HAP's, and CO and NO_x emissions. Such an analysis may be interpreted as a form of risk analysis which is prohibited in MACT standards.

6.4 RESIDUAL RISK

Comment: Three commenters (A-90-19: IV-D-58; IV-D-62; IV-D-63) expressed concerns with calculating residual risk under section 112(f) on a plant-wide basis. The commenters (A-90-19: IV-D-58; IV-D-62; IV-D-63) saw difficulties with the plant-wide basis because once a MACT standard is promulgated for one source category within a facility, residual risk requirements for that source category could be triggered before other MACT standards are established under section 112(d) for other source categories at the facility. Two of the commenters (A-90-19: IV-D-58; IV-D-63) concluded that the controls from the subsequent standards would not be available for reducing residual risks from the earlier standard. One commenter (A-90-19: IV-D-58) considered this outcome extremely undesirable and not consistent with statutory intent. Two commenters (A-90-19: IV-D-58; IV-D-63) worried that making the plant-wide residual risk determination before all MACT controls are available could lead to requirements that are untimely, duplicative, or complex in compliance implications.

One commenter (A-90-19: IV-D-58) added that if instead, future MACT requirements are estimated for the purposes of

plant-wide residual risk determinations, another large uncertainty would be introduced. As an example, the commenter (A-90-19: IV-D-58) questioned whether, if residual risks based on estimates of subsequent MACT reductions underestimate risks, would facilities need to redo their emission requirements to comply with residual risks, or would they immediately be out of compliance.

In contrast, one commenter (A-90-19: IV-D-85) argued that the legislative history of the Act indicates that residual risk must be calculated at least on a facility-wide basis. The commenter (A-90-19: IV-D-85) cited Senator Durenberger's statement for Senate managers regarding the 1990 amendments, which indicated that the risk from all of the emission points in a major source should be assessed. Cong. Rec. S 16928-16929 (October 27, 1990). The commenter (A-90-19: IV-D-85) further interpreted the legislative history to indicate some disapproval of the EPA's past failure to consider the cumulative effects of multiple pollutants from multiple plants and to indicate concern about high cancer rates near chemical plants. H. Rep. 101-490 at 318. Hence, the commenter (A-90-19: IV-D-85) recommended that the EPA begin now to measure pollution carefully from plants in toxic hot spots and begin to figure out how to deal with cumulative exposures from several plants and to study synergies between pollutants.

Three commenters (A-90-19: IV-D-58; IV-D-62; IV-D-63) expressed concerns with calculating residual risk under section 112(f) on a source category basis. The commenters (A-90-19: IV-D-58; IV-D-62; IV-D-63) opposed the source category-based option because public health could be compromised if emissions were artificially split up for purposes of risk assessment, rather than considered on the whole. However, two commenters (A-90-19: IV-D-58; IV-D-63)

stated that implementation would be simplified if a source-category based approach were taken.

Six commenters (A-90-19: IV-D-32; IV-D-62; IV-D-63; IV-D-69; IV-D-74; IV-D-108) argued that the issue of the basis on which to calculate residual risk should not be addressed in the HON or should not be addressed at this time. One commenter (A-90-19: IV-D-32) reasoned that Congress intended to defer risk-based standards until better methods are defined. Two commenters (A-90-19: IV-D-32; IV-D-69) emphasized that calculating health risks from emissions is extremely difficult with the current knowledge base. One commenter (A-90-19: IV-D-62) recommended that the EPA postpone the issue until the results of the National Academy of Sciences study of risk assessment methodology mandated under section 112(o) of the Act are available. Another commenter (A-90-19: IV-D-58) called for an open forum for assessing the best means to address residual risk, taking into account the National Academy of Sciences risk study and other ongoing activities. One commenter (A-90-19: IV-D-32) noted that section 112(f) of the Act requires a thorough investigation by the EPA of the issue of residual risk, and suggested that the appropriate forum for exploring methodologies for calculating residual risk is in the EPA's investigation and report to Congress under section 112(f)(2).

One commenter (A-90-19: IV-D-103) complained that the EPA treats "residual" risks as a group and averages them over the facility. The commenter (A-90-19: IV-D-103) stated that risk should be calculated on a chemical-specific basis.

Response: As many of the commenters have noted, residual risks will be determined 8 years after promulgation of the HON. The EPA's intent in requesting comments on residual risk was only to facilitate ideas on how residual risks should be analyzed. The EPA thanks the commenters for their comments and suggestions.

6.5 POLLUTION PREVENTION

Comment: Two commenters (A-90-19: IV-D-44; IV-D-89) claimed that the HON discourages pollution prevention. One commenter (A-90-19: IV-F-7.28) argued that the approach to pollution prevention within the HON rule is misguided. One commenter (A-90-19: IV-F-7.28) explained that pollution prevention refers not only to adding on control technologies at the end of the pipe, but also substituting safer materials, considering changes in processes, possibly producing different products, and addressing other issues, such as ending leaks. One commenter (A-90-19: IV-D-89) claimed that controls required at a point of generation, as defined in the HON, discourage, inhibit, and may actually disallow the reuse, reprocessing or recycling back to the process unit. One commenter (A-90-19: IV-D-44) asserted that the HON does not meet the requirements of the Act because it does not adopt a zero-emissions rule where feasible.

The commenter (A-90-19: IV-D-44) insisted that the approach taken in the HON promotes use of pollution controls and safety measures rather than redesign of processes to eliminate emissions. The commenter (A-90-19: IV-D-44) asserted that industry will generally fail to evaluate process and product changes in the absence of an explicit rule, but firms will innovate and identify additional pollution prevention measures to the extent that there is continual and stringent regulatory pressure. One commenter (A-90-19: IV-F-7.28) also claimed that the HON failed to recognize that pollution prevention technologies are currently available, and failed to recognize that the industry will have to comply with additional rules in the future, for which pollution prevention might decrease the need. The commenter (A-90-19: IV-F-7.28) presented the following policy reasons for including pollution prevention as a priority in the HON rule: (1) maximize innovation within industry to help turn industries into clean

production industries of the future and maintain jobs in the community; (2) prevent cross-media impacts; and (3) get at the source and prevent exposure to workers, consumers, and the environment. The commenter (A-90-19: IV-F-7.28) cited various statistics from a survey pertaining to pollution prevention released by the New York-based group Inform, such as, pollution prevention measures can achieve 80 to 85 percent emission reduction and pay for themselves quickly, sometimes in as little as 6 months; and an aggressive government pollution prevention program could result in at least a 50-percent reduction in waste over 5 years.

One commenter (A-90-19: IV-D-71) asserted that the EPA, in developing its regulatory programs, must view its regulations as the primary vehicle for promoting pollution prevention. The commenter (A-90-19: IV-D-71) contended that industry, Congress, and the EPA all view pollution prevention as the vehicle that can enhance environmental quality, advance environmental product stewardship, and potentially provide a competitive advantage.

Several commenters (A-90-19: IV-D-41; IV-D-44; IV-D-71; IV-D-106; IV-F-7.1; IV-F-7.2; IV-F-7.28) recommended that the EPA revise the HON to encourage more pollution prevention. One commenter (A-90-19: IV-D-41) recommended mandating product recovery or vapor collection devices prior to any combustion device for concentrated streams. Two commenters (A-90-19: IV-D-44; IV-D-71) recommended setting a timetable for elimination of emissions. One of the commenters (A-90-19: IV-D-71) also encouraged the EPA to promote the use of research allowances, reduction credits, and alternative control options. One commenter (A-90-19: IV-F-7.28) suggested using cost accounting for materials and pollution to all media; encouraging employee participation; encouraging plant managers and environmental managers to promote source reduction; evaluating source reduction alternatives; and

inviting public participation. The commenter (A-90-19: IV-F-7.28) recommended that pollution prevention programs should be shown to be infeasible before emissive technologies are used as control measures. One commenter (A-90-19: IV-D-44) contended that the HON rule should require evaluation of process and product changes including transitions to cleaner and more environmentally sound products at plants where organochlorines are currently produced.

One commenter (A-90-19: IV-D-44) recommended that the EPA should incorporate into the HON the pollution prevention approaches used in existing State programs, such as: (1) maximizing awareness and feasibility of pollution prevention; (2) evaluating pollution prevention alternatives through toxics-use reduction plans (i.e., quantify each hazardous substance in each production process; identify all available methods for toxics reduction for each substance; analyze costs; list methods selected for toxics use reduction; and establish a timetable by which those methods would be implemented over a specified time period); (3) applying pollution prevention measures where feasible before considering and applying control measures that will leave residual risks; and (4) making all evaluations accessible to the workforce and community.

Response: The EPA agrees that it would be preferable to eliminate all emissions of HAP's. However, a "zero emissions" rule is not possible with the technology available. In selecting the stringency and control requirements of the HON, the EPA followed the guidance stated in the Act. Specifically, the final rule is at least as stringent as the MACT floor, and, where it was cost effective, the EPA selected requirements more stringent than the MACT floor. The EPA maintains that control options requiring greater control than those chosen for the rule are not cost-effective.

Pollution prevention activities, particularly process redesign, are generally site-specific. Therefore, it would not be practical or possible for the EPA to stipulate specific requirements for the various chemical manufacturing processes in the SOCFI. In addition, when developing the HON, the EPA did not have access to the site-specific information required to sufficiently characterize the potential pollution prevention schemes in the SOCFI. The EPA also considers that elimination of pollution through material substitution will not be possible in all cases because SOCFI products (many of which are listed as HAP's in section 112 of the Act) cannot be eliminated from use without adverse economic impact. Specifically, because the products of the SOCFI are used in the production of polymers, resins, pesticides, pharmaceuticals, etc., elimination of a SOCFI product would affect not only the SOCFI producer, but also the downstream user of that SOCFI product. Many of the end-use products (e.g., resins, pharmaceuticals, etc.) could not be made from other materials. Thus, the EPA maintains that material substitution is better left determined by the marketplace rather than by mandate through a specific Federal requirement.

The EPA believes that the HON sufficiently encourages pollution prevention. Within the provisions for process vents, storage vessels, transfer operations, and wastewater collection and treatment, there are compliance options that only specify a percent reduction of HAP emissions. To comply with these options, a source may use any means, including process changes or recovery devices, to reduce emissions by the specified percent.

The process vents provisions encourage the use of recovery devices because they include an option for achieving a specified TRE value. Thus, the owner or operator does not necessarily have to incinerate emissions to control process vents. The storage vessel provisions also encourage the use

of floating roofs to control emissions. Many of the requirements in the equipment leaks and wastewater provisions also allow significant pollution prevention options to reduce emissions.

The emissions averaging provisions provide incentives for use of pollution prevention measures. Specifically, no discount factor is applied to credits generated by pollution prevention measures and an additional five emission points (for a total of 25) may be included in an average if pollution prevention measures are used.

The EPA would also like to emphasize that the HON does not require treatment at the point of generation, as some commenters have contended. For Group 1 wastewater streams, the EPA does require that emissions be suppressed from the point of generation, but the wastewater does not necessarily have to be sent to a treatment process. In fact, recycling or reprocessing is allowed and encouraged as long as HAP's are not released to the atmosphere during the recycling.

6.6 OVERLAPPING REGULATIONS

6.6.1 Benzene Waste Operations NESHAP

Comment: One commenter (A-90-19: IV-D-110) recommended that the EPA carefully review the wastewater provisions in the HON to address any provisions that may conflict or overlap with other regulations. One commenter (A-90-19: IV-F-1.6 and IV-F-6; IV-D-63) contended that petrochemical and refining facilities currently addressing compliance requirements under the Benzene Waste NESHAP would have a conflict with the wastewater provisions in the HON because the HON does not include biological oxidation as an RCT option and the benzene waste rule does. The commenter (A-90-19: IV-F-1.6 and IV-F-6) asserted that this difference will add confusion in facilities where HON process wastewater streams and refinery wastewater streams are co-mingled. One commenter (A-90-19: IV-D-92) contended that the HON should not be the controlling

regulation when regulations overlap. The commenter (A-90-19: IV-D-92) maintained that the alternative compliance options in the Benzene Waste NESHAP could be overridden if the HON controlled in all cases. Two commenters (A-90-19: IV-D-63; IV-D-92) expressed concern that refiners who have installed biological oxidation units will have to make additional and expensive modifications in order to comply with the HON.

Another commenter (A-90-19: IV-D-89) contended that several of the control requirements and control levels presented in the Benzene NESHAP may not be acceptable under the proposed HON regulation. The commenter (A-90-19: IV-D-89) expressed concern that complying with the HON will require additional expenses.

Response: In addressing the overlap between the benzene waste operations NESHAP and the HON, it is not possible for one rule to override the other. The benzene rule cannot override the HON because the HON covers 112 organic HAP's whereas the benzene waste operations NESHAP only covers emissions of benzene. The EPA does not believe that in all cases demonstration of control of benzene can equate to sufficient control of all organic HAP's. The HON cannot override the benzene rule because the benzene rule applies to waste and wastewater and the HON only applies to wastewater. Thus, in the final HON, the EPA is requiring that a source subject to both rules must comply with both rules.

6.6.2 Resource Conservation and Recovery Act

Comment: One commenter (A-90-19: IV-D-89) asserted that the proposed HON includes requirements for hazardous waste already controlled by regulations in RCRA, and the proposed HON does not consider those controls already in place under RCRA regulations. The commenter (A-90-19: IV-D-89) contended that the imposition of additional requirements may result in overcontrol or conflicts with existing requirements.

Response: The EPA has made every effort to identify areas in which the HON and RCRA may overlap and to consider the implications associated with overlap between these programs. The commenter did not express any particular concerns about specific areas of overlap. The EPA has identified several potential areas in which both the RCRA and the HON could apply to the same situation. To avoid dually regulating these areas, the EPA has tried to make the regulatory language in the HON consistent with existing RCRA requirements and, where appropriate, has designated which requirements the owner or operator must comply with in order to satisfy the requirements of both regulatory programs. For example, in the provisions that specify the required treatment processes for managing wastewater at SOCFI sources, the following will be accepted as demonstrating compliance with the HON: (1) hazardous waste incinerator permitted under 40 CFR 270; (2) boilers and industrial furnaces either permitted under 40 CFR 270 or certified as an interim status facility in compliance with 40 CFR 266; and (3) underground injection wells permitted under 40 CFR 207 and in compliance with 40 CFR 122. These treatment processes are not subject to the treatment process requirements in the HON because the EPA recognizes that such treatment processes are already strictly regulated under the RCRA program. However, emissions from wastewater streams must still be suppressed up to these treatment processes according to requirements in §§63.133 through 63.137 of the HON.

The EPA has also specified in §63.110 of the final rule two options for addressing the overlap on a source-specific basis. The owner or operator may either: (1) submit a request for a case-by-case determination of requirements, or (2) make their own estimate of which requirements are the most stringent (this will be subject to approval by the

implementing agency) and keep a record of the information used to make the determination.

Comment: One commenter (A-90-19: IV-D-69) asserted that if the incinerator installed to meet the HON requirements is considered to be a hazardous waste incinerator due to the characteristics of the feed materials, several years may be required to obtain a RCRA permit. The commenter (A-90-19: IV-D-69) contended that the permitting process may be further delayed or even terminated by unforeseen public opposition to a project, thereby limiting alternatives of emission control. The commenter (A-90-19: IV-D-69) suggested that the definition of incinerator in the HON should be uniquely and clearly defined to ensure that it is not classified as a hazardous waste incinerator. The commenter (A-90-19: IV-D-69) proposed that the term "HON incinerator" be used and that such incinerators be specifically exempt from RCRA hazardous waste incinerator requirements.

Response: The EPA understands the commenter's concern about the possibility of confusion through the use of the term "incinerator" in the HON. However, the EPA maintains that a RCRA permit will not be required for the treatment of air emissions. Under the RCRA program, only "contained gases" (e.g., aerosol sprays) can be classified as hazardous waste. Therefore, the uncontained gases that are vented to control devices for treatment would not be hazardous waste under RCRA. Such devices would be treating air emissions that are regulated by the HON and not by RCRA.

If a facility plans to install a new hazardous waste incinerator on-site to treat waste other than air emissions (e.g., residuals), the owner or operator will be required to obtain a RCRA permit. The HON does not require any facility to install such a treatment device to comply with HON.

6.6.3 Vinyl Chloride NESHAP

Comment: Three commenters (A-90-19: IV-D-53; IV-D-79; IV-D-105) asserted that the vinyl chloride NESHAP should override the HON or the EPA should specifically exempt VCM and EDC operations from the HON because the vinyl chloride NESHAP is more stringent. Another commenter (A-90-19: IV-D-36) considered that the NESHAP that were issued before the Act was amended in 1990 will always be more stringent than the HON because of their focus on risk. One commenter (A-90-19: IV-D-105) contended that control strategies for wastewater, storage provisions, and equipment leaks from the vinyl chloride NESHAP are equivalent or superior to that required in the HON.

One commenter (A-90-19: IV-D-53) asserted that the HON and the vinyl chloride NESHAP are not comparable on an emission-point basis because the vinyl chloride NESHAP was written for a specific industry and the HON was written for a broad industry. The commenter (A-90-19: IV-D-53) listed several areas where they interpreted the vinyl chloride NESHAP to be more stringent than the HON. Another commenter (A-90-19: IV-D-105) contended that the vinyl chloride NESHAP and HON cannot be compared line by line because the regulations take two different approaches to the control of emissions. The commenter (A-90-19: IV-D-105) contended that many vinyl chloride NESHAP provisions are based on process modifications, while the HON tends to rely more heavily upon end-of-stack or equipment controls. The commenter (A-90-19: IV-D-105) contended that the use of process controls should be preferred over end-of-pipe controls because the ultimate goal of the Act is the reduction of total air emissions.

Two commenters (A-90-19: IV-D-53; IV-D-105) argued that significant resources had already been expended in order to comply with the vinyl chloride NESHAP. The commenters (A-90-19: IV-D-53; IV-D-105) argued that to comply with the HON additional resources would have to be spent for no

additional environmental benefit. One commenter (A-90-19: IV-D-105) contended that it would be confusing and complicated for facilities to apply different standards to various emission points within a single facility. The commenter (A-90-19: IV-D-105) added that this would impose unjustifiable costs upon the operation of EDC/PVC/VC facilities.

Response: The EPA agrees that it is difficult to compare the HON and the vinyl chloride NESHAP because the formats for the two rules are different and compliance options will be different from plant to plant. However, the EPA has added clarification in §63.110 of subpart G on the requirements for process vents and wastewater streams subject to both the HON and the vinyl chloride NESHAP. Group 1 process vents subject to both rules are required to comply only with the HON requirements, because the combustion devices applied to control Group 1 vents for HON would also achieve vinyl chloride control, and by requiring only HON monitoring, recordkeeping, and reporting will reduce the burden for sources and implementing agencies. If a Group 2 process vent (which is not required to be controlled by the HON) is controlled with a combustion device to meet the vinyl chloride NESHAP, the source may choose to comply with the monitoring, recordkeeping, and reporting requirements of either the HON for Group 1 process vents or the vinyl chloride NESHAP for the combustion device. Either set of monitoring, recordkeeping, and reporting requirements would ensure combustor performance, and allowing sources a choice will reduce the compliance burden. If a Group 2 process vent is not controlled by a combustion device, it must comply with both the provisions of the HON for Group 2 points and the vinyl chloride NESHAP. For wastewater, the EPA felt that it would not be practical or possible for the EPA to specify the overriding requirements in a national rule due to differences between the HON and the

vinyl chloride NESHAP. Rather, the EPA has added language in §63.110 of the final rule to allow sources to either comply with both rules or to submit a demonstration that compliance with the vinyl chloride NESHAP will also assure compliance with the HON.

6.6.4 Other Air Regulations

Comment: Several commenters (A-90-19: IV-D-29; IV-D-32; IV-D-54; IV-D-57; IV-D-59; IV-D-61; IV-D-63; IV-D-69; IV-D-73; IV-D-75; IV-D-77; IV-D-92) contended that the HON will lead to overlap with other existing and future regulations such as NSPS, NESHAP, enhanced monitoring requirements, and the General Provisions. Two commenters (A-90-19: IV-D-75; IV-D-89) claimed that the EPA failed to integrate the HON with other regulations and laws.

One commenter (A-90-19: IV-D-79) contended that the EPA was proposing to duplicate existing standards thereby subjecting certain industries to double-jeopardy control standards. The commenter (A-90-19: IV-D-79) argued that this would threaten the ability of the regulated community to be economically competitive.

Five commenters (A-90-19: IV-D-34; IV-D-69; IV-D-79; IV-D-89; IV-D-110) considered the proposed regulatory language on overlapping regulations to be confusing. Several commenters (A-90-19: IV-D-77; IV-D-92; IV-D-110) asserted that the HON has failed to identify which standards may be the most stringent while requiring in proposed §63.103 the source to comply with the most stringent provision. One commenter (A-90-19: IV-D-89) asserted that language in the proposed HON is too vague and ambiguous because the term "stringent" is subject to numerous interpretations. One commenter (A-90-19: IV-D-50) contended that this provision was an unreasonable and burdensome condition to place upon a facility.

One commenter (A-90-19: IV-D-53) expressed confusion on how to determine the most stringent standard, as HON

recordkeeping and reporting requirements may be more stringent but the control efficiencies may be less stringent. The commenter (A-90-19: IV-D-53) also questioned whether monitoring, and recordkeeping and reporting may be compared between overlapping regulations. Another commenter (A-90-19: IV-D-63) noted that different MACT standards may contain incompatible and significantly different recordkeeping and reporting requirements which are not easily evaluated for stringency.

Several commenters (A-90-19: IV-D-32; IV-D-33; IV-D-34; IV-D-57; IV-D-64; IV-D-73; IV-D-77) expressed confusion as to whether the HON references in §63.103 to complying with the most stringent of applicable standards applies to overlapping control requirements or only recordkeeping and reporting requirements. One commenter (A-90-19: IV-D-73) recommended revising proposed §63.103(a) and (d)(ii) to clarify that they apply to recordkeeping and reporting requirements only and that the Implementation Plan or permit application will specify the applicable requirements. The commenter (A-90-19: IV-D-73) also requested that the prohibition of duplicative recordkeeping and reporting be moved from §63.103(d)(ii) to (d). Another commenter (A-90-19: IV-D-64) requested that §63.103(d)(i) refer to the most stringent reporting standards applicable.

Two commenters (A-90-19: IV-D-33; IV-D-75) requested that the EPA examine the HON for provisions which are unnecessary or duplicative with other rules. Two other commenters (A-90-19: IV-D-33; IV-D-64) mentioned that recordkeeping and reporting requirements should not be duplicated.

Several commenters (A-90-19: IV-D-32; IV-D-57; IV-D-59; IV-D-63; IV-D-69; IV-D-77) contended that the overlap between the HON and other regulations will lead to confusion, uncertainty, and frustration for sources and regulators, as

they will have to make independent decisions on what regulations apply and which are the most stringent. Several commenters (A-90-19: IV-D-32; IV-D-33; IV-D-57; IV-D-63; IV-D-69; IV-D-71) concluded that this would ultimately lead to inconsistent application of the requirements.

Two commenters (A-90-19: IV-D-33; IV-D-71) contended that the confusion over which regulation is the most stringent could result in compliance violations. One commenter (A-90-19: IV-D-34) stated that the possibility exists where enforcement action would be taken because the owner or operator has reached a different conclusion than the EPA regarding which regulation is most stringent. Another commenter (A-90-19: IV-D-63) raised a concern that complying with one standard could subject a facility to enforcement actions under other standards.

One commenter (A-90-19: IV-D-98) contended that requirements for sources to determine and comply with the most stringent requirements of the Act will result in delay and enforcement uncertainty. The commenter (A-90-19: IV-D-98) stated that the EPA should provide for a determination mechanism whereby facilities may request the EPA's assistance in resolving conflict between overlapping Federal regulations.

Two commenters (A-90-19: IV-D-36; IV-D-92) requested that the EPA provide further guidance on how to determine which standards are the most stringent or how to deal with overlapping regulations. One commenter (A-90-19: IV-D-92) asserted that in situations where the HON applies to one point while another NESHAP applies to other points connected to the same control device, the HON should define a mechanism to determine the comparative stringency between the regulations. The commenter (A-90-19: IV-D-92) stated that in situations of uncertainty, one regulation should be selected over the other under a safe-harbor provision.

Several commenters (A-90-19: IV-D-32; IV-D-33; IV-D-34; IV-D-36; IV-D-59; IV-D-63; IV-D-71; IV-D-73; IV-D-79; IV-D-89; IV-F-1.1 and IV-F-3) recommended that the EPA provide in the HON a list of what requirements apply and what do not apply to SO2MI sources when there are overlapping regulations. Two commenters (A-90-19: IV-D-33; IV-D-57) requested that the EPA list in subpart F those parts of 40 CFR parts 60, 61, and 63 which still apply to HON sources. Another commenter (A-90-19: IV-D-59) suggested that the EPA list all the existing regulations in the Act and update the list as new regulations are promulgated.

Two commenters (A-90-19: IV-D-36; IV-D-110) suggested modifying the language in the HON to refer to sources rather than emission points and use the source as the basic unit for making any comparisons of stringency. The commenters (A-90-19: IV-D-36; IV-D-110) claimed this would reduce the excessive burden and complexity of making a stringency determination for each emission point.

Several commenters (A-90-19: IV-D-32; IV-D-51; IV-D-64; IV-D-69; IV-D-79) contended that the HON should override overlapping regulations. Two commenters (A-90-19: IV-D-32; IV-D-57) stated that overriding other regulations is consistent with the Act and the EPA has the authority to override old standards with new ones.

One commenter (A-90-19: IV-D-53) stated that the HON should override overlapping requirements on a subpart-by-subpart basis because a direct comparison on an emission point basis is not possible. One commenter (A-90-19: IV-D-36) supported comparing regulations on a subpart basis rather than a line-by-line basis. Another commenter (A-90-19: IV-D-50) recommended that stringency determinations be made on a process unit basis and by regulation, such that current process units regulated by existing standards would continue

to be regulated by those standards and be exempt from regulation under 40 CFR 63.

One commenter (A-90-19: IV-D-64) stated that the HON is more stringent than 40 CFR parts 60 or 61. One commenter (A-90-19: IV-D-71) contended the HON should override the benzene and vinyl chloride NESHAP's and that sources which are regulated by the HON should be exempted from the conditions of the NESHAP's for benzene and vinyl chloride.

One commenter (A-90-19: IV-D-63) recommended that the EPA only require compliance with the MACT standard for the category under which a regulated process is predominantly operated, as demonstrated by the unit operator, thereby eliminating the extra burden of evaluating and complying with two or more different standards. One commenter (A-90-19: IV-D-36) added that the MACT rules will be more stringent than NSPS. One commenter (A-90-19: IV-D-71) suggested that the language of NSPS should be revised to provide an exemption of applicability for those sources which are regulated by the HON and also regulated by the NSPS.

One commenter (A-90-19: IV-D-54) contended that the Primary Intended Product approach proposed by CMA would serve to solve the problem of duplicative and conflicting standards.

Response: The EPA recognizes that the language in the proposed rule was not clear. Thus, the EPA has specified in §63.110 of the final rule with which provisions owners or operators are required to comply when multiple regulations apply to the same emission point. In developing these clarifications, the EPA compared the HON control, monitoring, recordkeeping, and reporting requirements with those of other NSPS and NESHAP for each kind of emission point. The EPA determined which control requirements were most stringent and which monitoring, recordkeeping, and reporting requirements were most reasonable for assuring compliance on a case-by-case basis. Tables

Table 6-1

Table 6-1-3 present the requirements that apply to Group 1 and

Table 6-5mission points, respectively. Table 6-4 presents

requirements for cases where source-specific judgments are necessary.

Comment: One commenter (A-90-19: IV-D-98) suggested that the HON should not require duplicative HAP controls during maintenance turnarounds, start-ups, and shutdowns. The commenter (A-90-19: IV-D-98) claimed that most States allow a grace period during start-up, shutdown, and maintenance of equipment. The commenter (A-90-19: IV-D-98) recommended that the HON provide a similar grace period.

Response: The HON does not require duplicative controls during periods of start-up, shutdown, or malfunction. Rather, the HON cites the specific paragraph in the General Provisions that address such occurrences. The EPA maintains that the General Provisions provide the flexibility necessary to deal with start-ups, shutdowns, and malfunctions.

Comment: One commenter (A-90-19: IV-D-63) claimed that the EPA's approach may require facilities to install new

technology if later MACT standards require more stringent control. The commenter (A-90-19: IV-D-63) cautioned that the EPA should not force operators to comply with one standard only to require them to install different technology at a later date as the result of the promulgation of a more stringent MACT standard.

Response: Each source category will have its own MACT standard. No two MACT standards should be applicable to the same emission points in the source category for the same type of pollutants. The only future requirements that should apply to the emission points subject to the HON are those developed during the residual risk analysis for the HON. The EPA has done its best to clarify the applicability of the HON. However, it is difficult to anticipate all the potential overlaps with MACT standards that have not yet been drafted. In developing the applicability provisions of future MACT standards, the EPA will be as clear as possible and will avoid applying more than one MACT standard to the same emission point.

6.7 MISCELLANEOUS

Comment: One commenter (A-90-19: IV-F-7.7 and IV-D-45) contended that the HON rule should be linked with the operator training requirements specified in the EPA's forthcoming Process Safety Management rule. The commenter (A-90-19: IV-F-7.7 and IV-D-45) asserted that the EPA should consider it a violation of the HON rule if management permits inadequately trained workers to operate and maintain emissions control equipment.

Response: The HON and the General Provisions establish requirements for proper operation and maintenance of processes and control equipment. While the EPA appreciates the commenter's concern, the suggestion would be difficult to implement in practice. In drafting regulations, it is better

to specify objective criteria which can be verified in order to avoid ambiguity and subjectivity in enforcement.

Comment: One commenter (A-90-19: IV-D-115) contended that it was important that the EPA allow States to offer and/or require alternative test methods where situations warrant it. The commenter (A-90-19: IV-D-115) contended that there are a number of test methods that are different from specified the EPA methods, but no less effective. The commenter (A-90-19: IV-D-115) added that in many cases the alternate methods are more effective than the EPA methods. The commenter (A-90-19: IV-D-115) suggested that the EPA provide an expedited mechanism for review of specific methods or cases, to render them federally enforceable.

Response: The HON allows States to use alternative test methods as long as the test methods are validated according to the procedures of Method 301. In addition, through the provisions of subpart A, a State may petition the EPA to allow the use of other test methods.

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7.0 NATIONAL IMPACTS

7.1 MODEL APPROACH AND EMISSION ESTIMATES

Comment: One commenter (A-90-19: IV-F-1.1 and IV-F-3) stated that the model plant approach and emissions estimates are seriously flawed and should be re-examined. Three commenters (A-90-19: IV-D-32; IV-D-69; IV-D-75) disagreed with the model approach used by the EPA to estimate emissions and costs. One commenter (A-90-19: IV-D-32) added that the emission reductions are high and the cost estimates are low; therefore, the cost per ton of HAP removed will be higher than estimated. Two commenters (A-90-19: IV-D-32; IV-D-75) stated that the model approach is over-simplified and is based on inaccurate assumptions. Another commenter (A-90-19: IV-D-98) contended that EPA should base its rulemaking on new and more accurate emissions data on HAP's rather than old data collected for prior rulemakings. The commenter (A-90-19: IV-D-98) also objected to the EPA using hypothetical model plants to estimate emissions rather than using actual emissions characteristics because the technical and cost assessments may be inaccurate. Five commenters (A-90-19: IV-D-3; IV-D-69; IV-D-75; IV-D-98; IV-D-113) concluded that the EPA's methodology could result in an arbitrary and overstringent MACT floor when compared with data summarizing the application of real, in-use control technologies to specific emission points at actual facilities.

Another commenter (A-90-19: IV-D-71) objected to the model used by EPA for relating the emission rate to a production rate for the process. The commenter (A-90-19:

IV-D-71) contended that these emission factors cannot be used for the SOCFI because the size or the production rate of the process has very little impact on the emission rate. The commenter (A-90-19: IV-D-71) added that other key variables which influence emission rates, such as condenser temperature, are specifically designed into the process, and the amount of emissions is a function of these variables and not of the production rate. The commenter (A-90-19: IV-D-71) concluded that the use of a production based emission factor for the development of baseline emissions is inaccurate and may either understate or overstate the true emissions of the processes.

Four commenters (A-90-19: IV-D-32; IV-D-68; IV-D-69; and IV-D-75) claimed that the EPA's estimate of baseline HAP emissions using the models is approximately ten times higher than what is in the TRI data base. One commenter (A-90-19: IV-D-32) also provided air toxics emissions estimates from a recent industry study supporting lower emissions numbers.

Two commenters (A-90-19: IV-D-32; IV-D-75) stated that the 16 percent increase in HAP emissions based on industry growth over a five year period proposed in the HON is inconsistent with the TRI data which show a 10 percent decrease in a three year period. One commenter (A-90-19: IV-D-32) contended that existing industry sources are taking steps already to reduce emissions which are not accounted for in the emissions estimates.

Response: The EPA recognizes that site-specific information is the most accurate means of estimating emissions and costs. However, this level of information was not available from each facility in the SOCFI. Gathering such data could not be accomplished if the promulgation date of the HON was to be met. The similarity in operations at SOCFI facilities does allow the use of model emission points to represent actual emission points at various facilities. Since no complete inventory of the sources in the SOCFI and their

emission points exists, using models to characterize the industry was the most reasonable method by which the EPA could meet the deadline specified in the consent decree order in the Act. In some cases, the models were developed in terms of emissions per unit of production for a product process. To estimate national costs, the EPA applied the production-dependent model emission points to the production rates of the product processes at each SOCOMI facility. While the EPA recognizes that factors other than production rate may influence emissions from a given process, this was the best approach possible with the available information. The EPA believes that emissions and costs will be overestimated for some facilities and underestimated for others. However, for estimating national impacts, the EPA has assumed that the amount overestimated or the amount underestimated for specific facilities will result in a reasonably accurate national cost estimate. The EPA was willing to consider other methods for extrapolating national impacts, but public comment did not provide any feasible suggestions.

The EPA has used models in many previous rulemakings because they are reasonable representations of sources and allow national impacts to be calculated. The model process vents, storage tank farms, transfer racks, and wastewater streams were developed from the best available real data, and a large number of models were developed to represent different kinds of processes. Furthermore, the models were assigned to real facilities, using facility-specific production information. The EPA recognizes that some degree of simplification was required for the models to make them applicable for all processes in the SOCOMI, and no one facility may match the models. However, since the data are representative of the industry, the national impacts should also be representative of the industry. The EPA does not consider the simplifying assumptions to greatly affect the

results of the national impacts analysis. National impacts have been estimated as accurately as possible with the data available.

Furthermore, it is appropriate to use the estimated impacts in selecting the standards and making decisions to go beyond the floor. For example, the information was used in the decisions to go beyond the floor for process vents and storage. For process vents, the TRE format assures that if individual vent cost effectiveness is greater than \$3,000/Mg of organic HAP, the process vent will not have to be controlled, even if emissions reductions and costs were over- or under-estimated for a particular process in the national impacts analysis. Site-specific data on the process vent will be used in determining whether control is actually required. For storage, AP-42 equations based on tank size and vapor pressure were used. These equations are widely accepted, and the resulting emission estimates are appropriate for decision making. Also, actual applicability of control requirements will be determined by vapor pressure and capacity of tanks onsite, not by which model tank farm was assigned.

There are differences in the emission estimating procedures used by the EPA and the TRI data base. For example, wastewater and equipment leak emissions can be estimated using SARA estimating procedures or EPA estimating procedures, which have potential differences. Other sources of difference may exist which could influence the bias either way. However, since control requirements are determined by the actual characteristics of the emission points at any source, any errors in the EPA estimates will be somewhat self-correcting. The EPA used a consistent methodology based on existing data to develop emissions estimates. The HON emission estimate was based on the level of control required by State regulations and previous NSPS and NESHAP. The data to consider additional site-specific controls were not

available. The actual emissions could either be lower or higher than estimated. The approach used was the only practical alternative given the schedule allowed by the statutory deadline and consent decree.

New sources were estimated to emit the same emissions as existing product processes. The same procedure of scaling emissions based on capacity was used with the exception of storage, which assumes the NSPS level of control which is greater than the existing level of control. This approach was selected since it was uncertain how many new sources versus modifications to existing sources would be implemented by the industry.

The EPA does not view the change in TRI estimates in the first few years of the program as necessarily demonstrating that emissions were decreasing over time. For example, some sources initially reported their permit limits, which include safety factors, and therefore overstate the actual emissions. Those sources later revised their estimations based on what they thought was actually being emitted.

7.2 COST IMPACTS

Comment: One commenter (A-90-19: IV-G-4) said the proposed HON will add an estimated two months to a typical project completion time for a new facility or modification because the control design work is sequential, not parallel, to other process decision activities. The commenter (A-90-19: IV-G-4) said the extra two months will increase execution time by 5 to 10 percent from initial project approval to mechanical completion. Assuming 15 percent return on capital and an investment of \$500 million per year, the increase will cost \$12.5 million per year in lost revenue. The commenter (A-90-19: IV-G-4) added that the additional process engineering required will cost about \$2.5 million per year, assuming process engineering is 5 percent of the investment

and that the cost increases 10 percent due to the extra time spent.

Response: If compliance with the HON were to cause a delay of two months in the completion of a new facility or modification, the opportunity cost would be the percent return on capital times the capital already expended at the point when the delay actually occurs, times the fraction of a year that the delay continues. In the example, the commenter seems to incorrectly assume that all of the capital (\$500 million) is tied up even though the example states the extra process engineering must occur before the end of the regular process engineering. The process engineering cost is a standard factor already included in the capital cost of control. Recordkeeping and reporting requirements are also already included.

Comment: Two commenters (A-90-19: IV-D-32; IV-D-34) stated that the factors used to estimate capital costs in the BID differ significantly from those used in industrial practice. One commenter (A-90-19: IV-D-32) asserted that the EPA's estimate of capital costs is 2 to 4 times too low because initial costs will be followed by substantial maintenance and operating costs as well as substantial administrative costs for monitoring, recordkeeping and reporting. The commenter (A-90-19: IV-D-32) stated that the BID cost factors are too low for the following reasons: the factors assume little additional engineering will be required for the purchased control systems, the factors do not include a large enough contingency, and the factors do not account for costs of meeting requirements of regulations such as the OSHA Process Safety rule or the costs of instrumentation and computerization for monitoring activities.

Another commenter (A-90-19: IV-D-74) contended that the EPA did not consider the cost of testing, recordkeeping and reporting, and monitoring in its cost estimates, and estimated

that the additional monitoring requirements in the HON would add \$161 million to their capital costs and \$16.1 million to their annual operating costs, which represent 46 percent of the capital costs and 12 percent of the total operating costs.

Response: Capital costs were estimated based on standard EPA methods and factors used in previous analyses and include cost estimates for maintenance and operating costs. For the final rule, the cost of the monitoring, recordkeeping, and reporting requirements were estimated to be \$70 million/yr and are included in the total nationwide annual cost estimate of the rule, which is \$230 million/yr. As discussed in the national impacts section of the proposal preamble (section IV.C), it is expected that the actual compliance cost of the rule will be less due to some operators ducting several emission points to a common device, upgrade of an existing control device, use of other less expensive control technologies, use of pollution prevention practices, or more efficient monitoring practices. However, it is not possible to quantify these savings. The EPA considers the estimated costs representative for national estimates and within the ± 30 percent accuracy expected for a regulatory development analysis.

Comment: One commenter (A-90-19: IV-D-41) stated that the EPA overestimated the economic costs of the HON by failing to do a pollution prevention analysis. The commenter (A-90-19: IV-D-41) hoped that pollution prevention would reduce costs due to process changes instead of add-on controls and by applying RCT to a single emission point instead of to a group of emission points. The commenter (A-90-19: IV-D-41) added that the costs were also overestimated by not including savings in products or reactants as a result of the application of recovery devices or the application of better controls or storage vessels.

Response: The EPA believes the commenter has misinterpreted some aspects of the national impacts analysis. Recovery credits were calculated for storage vessels (see BID volume 1B). As a previous response has indicated, process vent streams were grouped together for similar vents from the same process unit (i.e., distillation, reactor, or air oxidation process vents), and a common control device was costed. Due to proximity and safety reasons, the EPA considered it appropriate to assume that vent streams from different process units or different vent stream types would not be controlled by a common device. For the same reason, emission streams from different kinds of emission points were not grouped together.

Pollution prevention activities, particularly process redesign, are generally site-specific. The EPA did not have access to the level of information required to sufficiently characterize the potential pollution prevention schemes in the SOCFI. Therefore, it was not possible to analyze how process changes would be used. While the EPA acknowledges that the inability to consider pollution prevention or greater use of common control devices may tend to overestimate costs, other commenters pointed out that the cost estimates may not consider other costs encountered on a site-specific basis. On balance, the national cost estimates are expected to be within ± 30 percent.

Comment: One commenter (A-90-19: IV-K-28) said the true impact or potential conflict of the proposed HON MACT standard and the proposed General Provisions standards cannot fully be determined due to the segmented and disjointed manner in which the two regulations were proposed. The commenter (A-90-19: IV-K-28) said a true economic impact cannot be conducted on a "singular" view of each proposed regulation, but should be evaluated in conjunction for the HON standard and other pending MACT standards.

Response: The General Provisions only influence the costs for particular standards such as the HON - the General Provisions are not directly responsible for any costs apart from individual standards. Therefore, no independent estimate of the cost or economic impact of the General Provisions could be undertaken. However, the costs of the HON were assessed in a way that includes the requirements of the General Provisions.

7.3 ENVIRONMENTAL IMPACTS

Comment: Four commenters (A-90-19: IV-D-41; IV-D-45; IV-D-90, IV-D-100) expressed concern about emissions and potential increases of dioxins, furans, and other products of incomplete combustion generated as a result of the combustion of chlorinated hydrocarbons as a result of the HON regulation and said that the EPA did no analysis of the possible health and environmental impacts.

One of the commenters (A-90-19: IV-D-41) added that section 112(c)(6) of the Act mandates that the EPA identify categories and subcategories of sources accounting for not less than 90 percent of the aggregate emissions of the 2,3,7,8 forms of furans and dioxins, as well as POM's. The commenter (A-90-19: IV-D-41) concluded that the HON may be adding to the aggregate emissions of these HAP's, which will then need to be controlled in future rulemakings.

Response: Combustion controls used to comply with the process vent and transfer provisions of the HON are required to achieve at least 98 percent destruction of organic HAP's or TOC. This will result in a substantial decrease of organic HAP emissions. Available data on emissions from combustion controls in the SOCOMI do not indicate that there are significant emissions of dioxins or furans; the commenter did not provide data to the contrary or suggest an analysis methodology. The commenter is correct in pointing out that section 112(c)(3) requires listing of categories accounting

for 90 percent of 2,3,7,8 forms of dioxins and furans, followed by regulation of these categories. However, that study has yet to be completed, and results are not yet available.

Comment: One commenter (A-90-19: IV-D-74) asserted that the EPA's estimates of secondary impacts of CO and NO_x may be underestimated by as much as a factor of ten. The commenter (A-90-19: IV-D-74) stated that the presence of chlorinated compounds during combustion will increase CO emissions and that the EPA failed to consider NO_x emissions generated due to incineration of nitrogen-bearing compounds.

Response: The estimated NO_x and CO increases are reasonable based on the overall organic HAP reductions and other benefits of the rule. The commenter provided no data as to why the combustion of chlorinated compounds would increase CO emissions by an order of magnitude. The increased temperature and fuel use required to combust chlorinated HAP's was accounted for in the CO emissions estimate. Emissions of NO_x were calculated for each process vent stream which vented nitrogen-containing compounds.

Comment: One commenter (A-90-19: IV-D-74) objected to the EPA considering impacts on water pollution and solid waste to be negligible. The commenter (A-90-19: IV-D-74) contended that the use of RCT's will increase the amount of hazardous waste and scrubber waste. The commenter (A-90-19: IV-D-74) specifically stated that the scrubber water used to absorb chlorinated compounds may be a considerable problem that would require additional treatment equipment and investment to rectify.

Response: Less than 6 percent of the CMPU's affected by the HON have vent streams that would be considered halogenated. Of those affected, some will select product recovery devices or emissions averaging over scrubbing. Additionally, the discarded scrubber effluent will not meet

the definition of hazardous waste and is typically combined with the facility wastewater collection system. The volume of scrubber effluent is usually small compared to the total volume of wastewater and will therefore contain sufficient buffer. The overall wastewater characteristics and collection and treatment system will not be impacted. The impact of the standard on water pollution is therefore considered negligible.

Comment: Two commenters (A-90-19: IV-D-32; IV-D-69) said that the EPA should more fully examine the multimedia impacts that will be caused by the HON. One commenter (A-90-19: IV-D-69) reasoned that the benefit of controlling HAP emissions under the HON will be partially offset by the environmental "cost" of achieving the control. The commenter (A-90-19: IV-D-69) provided the example that the control of process vent sources from a "model plant" can result in significant emissions of NO_x, CO, and SO₂. The commenter (A-90-19: IV-D-69) suggested that an option be provided for sources to conduct a multimedia assessment. Based on the assessment, certain emission points would not need to be controlled, or the source could apply for alternative controls with lesser control efficiencies than the RCT. For example, the commenter (A-90-19: IV-D-69) suggested that less stringent controls than RCT, or no controls, be required for storage tanks, loading racks, or wastewater handling/treatment units if the owner or operator demonstrates that the impacts to air, water, and solid waste are greater than without controls.

Response: The EPA did analyze the multimedia impacts of the HON. The results of the analysis indicated that emissions from only 6 percent of SOCOMI process vent sources would exceed the PSD NO_x cut-off of 40 tpy in non-attainment zones, and none of the sources would exceed the CO emissions cut-off of 100 tpy. Impacts on water pollution and solid waste were

judged to be negligible as described in chapter 5 of the proposal BID volume 1A. Based on these results, control of secondary impacts of applying the RCT's will not significantly impact the cost of the HON. The EPA maintains that the approach for estimating impacts presented in the proposed HON is sufficient for rulemaking purposes. The reduction in HAP emissions achieved by the HON greatly outweighs the small increases in other air pollutants.

The EPA does not consider the commenters suggestion to be consistent with the requirements of the Act. MACT standards are defined in the Act as being at least as stringent as the HAP control achieved by the best-controlled 12 percent of sources. Allowing HAP control levels below the MACT is not consistent with the requirements of the Act. In addition, the HON provisions allow a facility to use any technology that achieves the required emissions reduction. The facility may chose to use the RCT, which EPA has designated as being able to achieve the required control, or any other control technique which can be proven to achieve an equivalent emission reduction.

7.4 ECONOMIC IMPACTS

Comment: One commenter (A-90-19: IV-D-74) requested that the EPA identify the projected impact of a 3 percent or 5 percent increase in SOCFI chemical prices on the consumer inflation rate, since SOCFI chemicals are basic to consumer products. The commenter (A-90-19: IV-D-74) also disputed the EPA's claim that the additional percentage price increase will not be significant. The commenter (A-90-19: IV-D-74) contended that it is already difficult to find secondary and specialty chemicals which are manufactured in the U.S., and more smaller volume chemicals will likely be produced only overseas as a result of the increased cost of production due to the SOCFI rule. Another commenter (A-90-19: IV-D-75) stated that the EPA incorrectly assumed that the increased

cost of products affected by the HON could be passed on to the customer without considering the impacts on prices in a global marketplace.

Response: For the final rule, the cost of the monitoring, recordkeeping, and reporting requirements were estimated to be \$70 million/yr and were included in the total nationwide annual cost estimate of the rule, which is \$230 million/yr. The EPA's economic analysis assessed price increases for a subset of 23 selected compounds. The estimates of price increases included consideration of individual supply and demand factors for the particular markets. Sixteen of the price increases were less than 1 percent. Three were between 1 and 2 percent. One was between 2 and 3 percent. Four were between 3 and 4 percent. A production weighted average for all compounds would probably fall below 1 percent. This type of price increase indicates that any significant impact on inflation rates is unlikely. If smaller volume chemicals are losing market share to overseas producers in the absence of a HON regulation, the commenter is correct that the HON will increase that loss of market share. The EPA tried to include a number of the smaller volume chemicals in the economic analysis. Unfortunately, necessary information on price of chemical, production capacity, market factors, substitutes, and imports/exports could not be located.

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8.0 MISCELLANEOUS

8.1 CLARITY OF THE RULE'S APPLICABILITY

Comment: One commenter (A-90-19: IV-D-68) asserted that many people will only skim the HON for relevant sections and will easily miss important points. The commenter (A-90-19: IV-D-68) asserted that exclusions and cut-offs should be clearly listed in all relevant sections to avoid misleading facilities into complying with something from which they are exempt or excluded.

Response: Many clarifications have been made so that the final rule more thoroughly and clearly delineates the applicability of the provisions. The clearer wording in the final rule, along with the implementation and outreach materials that are available, will be useful to affected sources.

8.2 PUBLIC PARTICIPATION IN RULEMAKING

Comment: One commenter (A-90-19: IV-F-7.38) asserted that decisions made by the State Department regarding a chemical plant which have an impact on the health and welfare of citizens should be made with input from the citizens, and that any changes to current regulations should incorporate more public participation in the decision-making process. The commenter (A-90-19: IV-F-7.28) recommended further specific mechanisms for the HON: (1) requiring management practices to maximize awareness and assessment of pollution prevention strategies; and (2) requiring the evaluation process to be a democratic process in which workers and communities can participate directly.

Response: The Administrative Procedures Act requires that the public be given notice and an opportunity for comment during the development of a regulation. For the HON, the EPA complied with this requirement by holding 2 public hearings, having an initial 90-day comment period, and an additional 30-day comment period following the supplemental notice for the General Provisions and emissions averaging (58 FR 53478).

As described in section 9.1, similar provisions for notice and comment are included in regulations for section 112(l) regarding delegation of authority for State programs to implement NESHAP. Also, each facility's emission limits and plans to comply with the HON and other applicable standards will be included in the facility's operating permit. Section 503 of the Act requires a copy of each permit application, compliance plan and schedule, and permit to be available to the public.

Comment: One commenter (A-90-19: IV-F-7.34) requested that the EPA make provisions so that information such as the HON rule are available in the Louisiana DEQ files for the public to view on demand.

Response: The final HON rule will be published in the Code of Federal Regulations under 40 CFR part 63, subparts F, G, H, and I. This code is available in many State and university libraries.

Comment: One commenter (A-90-19: IV-F-7.3) recommended that the EPA hold public hearings elsewhere in the country.

Response: The EPA held 2 public hearings regarding the proposed HON. The first was held in Research Triangle Park, North Carolina which is the location for many public hearings on EPA regulations because of its proximity to the EPA's Office of Air Quality Planning and Standards. In response to several early requests for hearings elsewhere in the country, the EPA held a second public hearing in Baton Rouge, Louisiana. This site was chosen because it is centrally

located in the country and because of the number of SOCOMI facilities in the vicinity.

8.3 LOCATION OF CHEMICAL FACILITIES

Comment: Several commenters (A-90-19: IV-D-96; IV-F-7.2; IV-F-7.5; IV-F-7.10 and IV-F-9; IV-F-7.11; IV-F-7.12; IV-F-7.14; IV-F-7.27 and IV-F-10; IV-F-7.31) discussed the issue of environmental racism and injustice upon minorities and the poor, caused by the location of chemical plants in neighborhoods inhabited by minorities and the poor. One commenter (A-90-19: IV-F-9) suggested that this inequity in the HON is related to a myriad of social, economic, and political forces that promote this inequity, and addressing this inequity in the HON should be done as part of a greater government policy of social reform. One commenter (A-90-19: IV-F-7.27 and IV-F-10) stated that, concerning cost-effectiveness, the levels of emissions, in general, carry a very heavy economic, social, and environmental cost to the people who can least afford them.

One commenter (A-90-19: IV-F-7.27) stated that not only are the poor people living in these cluster areas having to breathe contaminated air, but they are in an ozone non-attainment area and have the additional expense of keeping their old automobiles up to the emission standards. The commenter (A-90-19: IV-F-7.27) said that while the poor will be forced to discard old cars and pay high car maintenance costs, industry is not being asked to correspondingly reduce their emissions.

Two commenters (A-90-19: IV-F-7.31; IV-F-7.32) stated that the presence of the chemical plants have caused the price of nearby property to depreciate. One commenter (A-90-19: IV-D-31) explained that she was currently in the process of selling her house to a chemical company for a low price, despite the fact that she has lived there for 18 years, because members of her family have experienced illnesses.

However, one commenter (A-90-19: IV-F-7.31) stated that industry is monopolizing real estate in the area surrounding plant sites. One commenter (A-90-19: IV-F-7.34) stated that the companies report they are doing this to provide a buffer zone; however, the commenter contended that the company is trying to avoid future liability. Another commenter (A-90-19: IV-F-7.34) stated that the residents mean nothing to the chemical plants and one company is buying whole communities adjacent to their facility and moving them.

One commenter (A-90-19: IV-F-7.32) contended that the EPA should require plants to establish buffer zones between their plant site and the surrounding neighborhoods. The commenter (A-90-19: IV-F-7.32) pointed out that there used to be a buffer zone between the nearby plants and his neighborhood; however, the plants have since built to the edge of the neighborhoods and the poor people that live in these neighborhoods are powerless and they do not have any way to move.

Response: While it is true that development of the HON did not specifically focus on environmental inequities caused in different communities due to their location with respect to SOCFI facilities, the EPA does believe that the HON is one of the most effective rules developed to reduce toxic emissions in these areas. The HON is designed to fulfill the requirements of the section 112(d) of the Clean Air Act by limiting emissions at SOCFI facilities (wherever they are located) to the maximum degree achievable, considering cost and other environmental and energy factors. The HON will result in reductions of hazardous air pollutants (HAP) by about 460,000 Mg/yr (510,000 tons per year) and ozone-causing pollutants, volatile organic compounds (VOC) by about 950,000 Mg/yr (1,000,000 tons per year) on a nationwide basis. This is an 88 percent reduction of HAP and a 79 percent reduction of VOC compared to what emissions would be without the HON.

It is equivalent to removing 42 million cars per year from the U.S. roadways. Therefore, the HON is expected to be effective in reducing the emissions in areas near chemical facilities, which often are near neighborhoods inhabited by minorities and the poor. The EPA is sensitive to this issue and is pleased at the degree to which the HON will help to ensure that chemical companies reduce their emissions. While the concerns expressed by the commenters about buffer zones are valid, they are outside the scope of this rulemaking which is being done under authority of section 112(d) of the Act. This section of the Act limits EPA to basing standards developed under this section on the most effective emission control technologies that can be identified. However, there are other avenues through which Federal, State, and local agencies are encouraging the types of efforts described by the commenters.

8.4 CLUSTERING OF CHEMICAL FACILITIES

Comment: Several commenters (A-90-19: IV-D-9; IV-D-96; IV-D-117; IV-D-118; IV-D-120; IV-F-7.2; IV-F-7.5; IV-F-7.27 and IV-F-10; IV-F-7.34; IV-F-7.44) contended that the hon does not adequately address those areas of the country where several chemical companies are clustered together, causing increased emission levels in nearby neighborhoods. One commenter (A-90-19: IV-D-96) reported that there are more than 175 petrochemical facilities along an 85-mile stretch of the Mississippi River between Baton Rouge and New Orleans. One commenter (A-90-19: IV-F-7.27 and IV-F-10) provided an overview of the types and amounts of chemicals discharged from the various industrial clusters in Texas and Louisiana.

One commenter (A-90-19: IV-F-7.44) indicated that the TACB used cumulative dispersion modeling to evaluate combined benzene emissions from six bulk fuel terminals located near poor minority neighborhoods. The commenter (A-90-19: IV-F-7.44) stated that even though the terminals had low benzene emissions on an individual basis, the cumulative model

showed that emissions could exceed safe levels for benzene in the off-site areas, and additional controls were required.

Response: The purpose of the NESHAP program under section 112 of the Act is the development of national requirements that are technology based. The EPA believes that local issues such as the ones described above are best addressed by State and local governments. The EPA will evaluate the SOCOMI for residual risk 8 years after promulgation of the final rule.

8.5 GOVERNMENT-RELATED ISSUES

Comment: Three commenters (A-90-19: IV-F-7.2; IV-F-7.5; IV-F-7.10 and IV-F-9) expressed dissatisfaction that the Presidential administrations over the last 12 years have not adequately regulated the chemical industry. Two commenters (A-90-19: IV-F-7.36; IV-F-7.39 and IV-F-12) asserted that the Council on Economic Competitiveness and Office of Management and Budget had pressured the EPA to weaken the HON rule.

Response: The Administration has addressed the role of OMB in reviewing regulations in E.O. 12866, which has specific requirements for documenting OMB comments on EPA regulations. Also, the Council on Economic Competitiveness was disbanded.

Comment: Four commenters (A-90-19: IV-F-7.2; IV-F-7.4; IV-F-7.5; IV-F-7.10 and IV-F-9) expressed hope that the Clinton administration would effectively regulate industry. One commenter (A-90-19: IV-F-7.10) expressed hope that the HON would restore the public's confidence in government. Two commenters (A-90-19: IV-F-7.10 and IV-F-9; IV-F-7.15) contended that strong regulations create jobs.

Response: The HON will reduce HAP emissions more than any other air toxics rule being developed under section 112 of the Act (an 88 percent reduction compared to the amount that would be emitted in the HON's absence). It is a tough but fair rule and will be effective in the nation's efforts to achieve cleaner air.

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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 SOCFI 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(1) 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(1) 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 SOCOMI 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 SOCFMI 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 SOCOMI 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 SOCFI 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 SOCFI 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 m³ 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 SOCOMI 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 SOCFI 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 SOCFI 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.

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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(1) 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(1) 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 from state to state and plant to plant. In some cases, the operating 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 that section 112(i)(3)(A) of the Act allows up to 3 years 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-day period is not enough time for a source to engineer, permit, 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 °C exit temperature range for condensers unachievable.
- Incinerator temperatures may vary by more than 50 °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.

Response: 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 monitored 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-7.35; 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, not continuous emission monitoring.

Comment: 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.

Response: 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.

Comment: 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(1). States are also required to develop operating permit programs. State programs developed under section 112(1) as well as operating permit programs must be approved by the EPA before they can go into effect. If State 112(1) 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(1) 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(1), 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 commenters (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 any deviation 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.

Response: 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.

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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 fraction 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 over 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.

4.0	TEST METHODS	4-1
4.1	METHOD 18	4-1
4.2	METHOD 25D	4-3
4.3	METHOD 304	4-7
4.4	METHOD 305	4-22

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.

Chapter 2.0 of this BID volume contains an explanation of the docket identification numbers assigned to each public comment received. Chapter 3.0 contains the index of docket identification numbers and the associated person and the

organization, industry, or agency they represent. These docket identification numbers were used in the other BID volumes (2A, 2B, 2C, 2D, and 2E) to identify the commenter. Chapter 4.0 contains a list of commenters who expressed support for other commenters' comments.

2.0 EXPLANATION OF THE DOCKET IDENTIFICATION NUMBERS

There are five dockets for the HON: A-90-19 contains process vent and miscellaneous information; A-90-20 contains equipment leaks information; A-90-21 contains storage vessel information; A-90-22 contains transfer operation information; and A-90-23 contains wastewater operation information. Within these four dockets, comments were received under four categories:

- IV-D; indicates the comment was a written comment received within the comment period;
- IV-F; indicates the comment was an oral comment at one of the public hearings or was from a written document given to the EPA at a public hearing. The transcripts for the two public hearings are IV-F-1 (Research Triangle Park, North Carolina) and IV-F-7 (Baton Rouge, Louisiana). In the BID volumes, the actual person making the comment at the public hearing is represented using a number after a decimal point. For example, IV-F-7.6 indicates the sixth person to speak at the Baton Rouge public hearing. All IV-F comments are in the A-90-19 docket;
- IV-G; indicates a written comment received after the public comment period was over; and
- IV-K; indicates a written comment received in response to the Supplemental Notice (58 FR 53478; October 15, 1993). All IV-K comments are in the A-90-19 docket.

Because of multiple dockets and multiple categories in which a comment could be received, a commenter may have multiple identification numbers. In order to accurately identify the

person making the comment and document in which the comment was made, the EPA developed the following system.

- For similar comments made by different people within the same docket number, the identification was handled as shown in the following example:
(A-90-19: IV-D-31; IV-D-34; IV-F-12)
This indicates that there are three written comments, one of which was given to the EPA at a public hearing.
- For similar comments made by different people with different docket numbers, the identification was handled as shown in the following example:
(A-90-19: IV-D-73), (A-90-22: IV-D-13)
This indicates a similar comment made in two written comments sent to two different dockets within the public comment period.
- For identical comment letters sent to multiple dockets, the identification number associated with the A-90-19 docket was used throughout the BID volumes.
- For identical comments made by the same person, representing the same organization but whose comments are included in different categories, each category number was included and joined with an "and", as shown in the following example:
(A-90-19: IV-D-34 and IV-G-4, IV-D-48)
This indicates two different commenters. One commenter sent in a comment letter within the comment period and one after the comment period. The other commenter sent in a written comment within the comment period. In each of these letters, the commenter made the same comment.

3.0 DOCKET IDENTIFICATION NUMBERS

Hazardous Organic NESHAP (HON): General Information and
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Docket No. A-90-19
Subcategory IV-D
Additional Comments Received

<u>Item No.</u>	<u>Description</u>
IV-D-1	G. I. Matsumoto, Johnson Wax, to Air Docket Section (A-90-19). January 6, 1993. Comments on HON proposal (57 FR 62608-808h).
IV-D-2	M. M. Orr, Louisiana Environmental Action Network (LEAN); R. Abraham, Texans United; S. Blyskal, Citizens for a Clean Environment; S. C. Harrington, Sierra Club Legal Defense Fund; F. Robinson, North Baton Rouge Environmental Association; W. E. Sanders, OCAW Local 4-449; P. Bryant, Gulf Coast Tenants Organization; D. Nicolai, OCAW Local 4-620; and R. Parry, Galveston-Houston Against Smog Pollution, to W. K. Reilly, EPA Administrator. January 12, 1992. Request to hold a HON public hearing in Baton Rouge, Louisiana.

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<u>Item No.</u>	<u>Description</u>
IV-D-3	M. M. Orr, Louisiana Environmental Action Network (LEAN); R. Abraham, Texans United; W. E. Sanders, OCAW Local 4-449; P. Bryant, Gulf Coast Tenants Organization; S. Blyskal, Citizens for a Clean Environment; S. C. Harrington, Sierra Club Legal Defense Fund; F. Robinson, North Baton Rouge Environmental Association; D. Nicolai, OCAW Local 4-620; and R. Parry, Galveston-Houston Against Smog Pollution, to C. Browner, EPA Administrator-Designate. January 12, 1992. Request to hold a HON public hearing in Baton Rouge, Louisiana.
IV-D-4	D. Driesen, Natural Resources Defense Council, to W. K. Reilly, EPA Administrator. January 13, 1993. Request to hold a HON public hearing in Baton Rouge, Louisiana.
IV-D-5	D. Driesen, Natural Resources Defense Council, to C. Browner, EPA Administrator-Designate. January 13, 1993. Request to hold a HON public hearing in Baton Rouge, Louisiana.
IV-D-6	G. F. Hoffnagle, TRC Environmental Corporation, to W. G. Rosenberg, EPA Assistant Administrator. January 19, 1993. Inter-

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<u>Item No.</u>	<u>Description</u>
	program difficulties in implementing the 1990 Clean Air Act Amendments.
IV-D-7	J. Schulze, Ciba-Geigy, to J. S. Meyer, EPA:ESD. February 1, 1993. Problem with definition of chemical manufacturing process.
IV-D-8	P. Dolan, Adsistor Technology, Inc., to EPA Air Docket (A-90-19). February 9, 1993. Alternatives to Method 21 for fugitive emissions compliance testing of chemical process equipment pursuant to the proposed NESHAP regulations (40 CFR part 63, subpart H, 63.180).
IV-D-9	D. B. Hunt, Columbia United Christian Church, to Administrator C. M. Browner, EPA. Undated. Comments regarding HON proposal.
IV-D-10	J. DeBaker, private citizen, to Administrator C. Browner, EPA. Undated. Comments regarding HON proposal.
IV-D-11	S. R. Kniffer, private citizen, to Administrator C. Browner, EPA. March 16, 1993. Comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-D-12	K. A. Muldoon, Powertrol, to R. Rosensteel, EPA:CPB. March 23, 1993. Comments on proposed revisions to 40 CFR Part 63, 63.114(a)(2): process vent provisions-monitoring equipments.
IV-D-13	N. W. Hancock, Oil, Chemical & Atomic Workers (OCAW), to Administrator C. Browner, EPA. January 27, 1993. Request to hold additional HON public hearings in New Orleans and Baton Rouge, Louisiana; Houston, Texas; Philadelphia, Pennsylvania; and Los Angeles, California.
IV-D-14	D. A. Bingham, Bingham Environmental Technologies, Inc., to EPA Air Docket (A-90-19). March 24, 1993. Comments regarding HON proposal.
IV-D-15	L. P. Guzzetti, Lumur International, Inc., to EPA Air Docket (A-90-19). March 24, 1993. Comments regarding HON proposal.
IV-D-16	B. L. Bailey, General Electric Company, to Air Docket Section (A-90-19). March 26, 1993. Comments regarding HON proposal.
IV-D-17	K. Treen, Specialty Gases, to EPA Air Docket (A-90-19). March 26, 1993. Comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-D-18	R. B. Shirrell, Monitoring Technologies Corporation (on behalf of Photovac), to EPA Air Docket (A-90-19). March 26, 1993. Comments regarding HON proposal.
IV-D-19	D. A. Blair, Monitoring Technologies Corporation (on behalf of Photovac), to EPA Air Docket (A-90-19). March 26, 1993. Comments regarding HON proposal.
IV-D-20	R. M. Carter, Reider Associates, to EPA Air Docket (A-90-19). March 26, 1993. Comments regarding HON proposal.
IV-D-21	D. E. Strayer, Borden Packaging and Industrial Products, to EPA Air Docket (A-90-19). March 29, 1993. Comments on proposed SOCFI HON general provisions.
IV-D-22	D. E. Strayer, Borden Packaging and Industrial Products, to EPA Air Docket (A-90-19). March 29, 1993. Comments on proposed SOCFI HON process vent provisions.
IV-D-23	P. M. Besio, Hazco, to EPA Air Docket (A-90-19). March 29, 1993. Comments regarding HON proposal.
IV-D-24	R. W. Wheelhouse, Hazco, to EPA Air Docket (A-90-19). March 29, 1993. Comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-D-25	B. J. Howard, ICS Associates, Inc., to EPA Air Docket (A-90-19). March 29, 1993. Comments regarding HON proposal.
IV-D-26	J. E. Schmidt, FMC Corporation, to EPA's Air Docket (A-90-19 and A-90-20). March 30, 1993. Comments regarding HON proposal.
IV-D-27	P. Buerger, Safety and Environmental Services, Inc., to EPA Air Docket (A-90-19). March 30, 1993. Comments regarding HON proposal.
IV-D-28	R. M. Carter, Reider Associates, to EPA Air Docket (A-90-19). March 26, 1993. Comments regarding HON proposal.
IV-D-29	T. T. Cromwell, Chemical Manufacturers Association (CMA), to M. Dubow, EPA:OAQPS. March 22, 1993. Possible overlap and conflict between the proposed HON and the draft General Provisions.
IV-D-30	M. M. Orr, Louisiana Environmental Action Network (LEAN); R. Abraham, Texans United; W. E. Sanders, OCAW Local 4-449; P. Bryant, Gulf Coast Tenants Organization; S. Blyskal, Citizens for a Clean Environment; S. C. Harrington, Sierra Club Legal Defense Fund; F. Robinson, North Baton Rouge Environmental Association; D. Nicolai, OCAW

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<u>Item No.</u>	<u>Description</u>
	Local 4-620; and R. Parry, Galveston-Houston Against Smog Pollution, to J. Meyer, EPA:ESD. March 24, 1993. Letter of thanks for attending the public hearing.
IV-D-31	D. Thompson, Enviromega Ltd. (on behalf of the Chemical Manufacturers Association), to J. Meyer, EPA:ESD. April 7, 1993. Comments on Proposed Methods 21, 304, and 305 Contained in the Hazardous Organic NESHAP.
IV-D-32	M. L. Mullins, Chemical Manufacturers Association (CMA), to EPA Air Docket Office, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal.
IV-D-33	C. D. Malloch, Monsanto, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal.
IV-D-34	J. C. Hovious, Union Carbide Corporation, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-D-35	D. W. Gustafson and J. A. Crites, The Dow Chemical Company, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON (process vents) proposal.
IV-D-36	D. W. Gustafson and J. A. Crites, The Dow Chemical Company, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON (general) proposal.
IV-D-37	D. W. Gustafson and J. A. Crites, The Dow Chemical Company, to EPA Air Docket A-90-19. March 30, 1993. Comments regarding HON (Method 18) proposal.
IV-D-38	D. Fillingame, Citgo, to EPA Air Docket A-90-19. March 18, 1993. Comments regarding HON proposal.
IV-D-39	J. M. Wilson, Bristol-Myers Squibb Company, to EPA Air Docket A-90-19. March 31, 1993. Comments regarding HON proposal.
IV-D-40	M. von der Ahe, Witzel Associates, to EPA Air Docket A-90-19. April 5, 1993. Comments regarding HON proposal.
IV-D-41	B. Warren, Consumer Policy Institute, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 7, 1993. Comments regarding HON proposal.

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Additional Comments Received

<u>Item No.</u>	<u>Description</u>
IV-D-42	J. A. Fitzgerald, Argus Supply Company, to EPA Air Docket A-90-19. April 8, 1993. Comments regarding HON proposal.
IV-D-43	H. Bialer, Staten Island Citizens for Clean Air ("SICCA"), to EPA Air Docket A-90-19. April 8, 1993. Comments regarding HON proposal.
IV-D-44	S. Lewis, The Good Neighbor Project for Sustainable Industries, to EPA Air Docket A-90-19. April 11, 1993. Comments regarding HON proposal.
IV-D-45	Oil, Chemical & Atomic Workers (OCAW) to EPA Air Docket A-90-19. April 12, 1992 (date is most likely a typographical error). Statements of W. E. Sanders, OCAWIU and D. Nicolai, Louisiana Labor/Neighbor Project.
IV-D-46	D. W. Marshall, Union Camp, to EPA Air Docket A-90-19. April 12, 1993. Comments regarding HON proposal.
IV-D-47	M. Zeesman, New York City Environment Campaign, to EPA Air Docket A-90-19. April 13, 1993. Comments regarding HON docket.
IV-D-48	R. Skinner, Air Products, to EPA Air Docket A-90-19. April 14, 1993. Comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-D-49	P. P. Baljet, American Lung Association, to EPA Air Docket A-90-19. April 14, 1993. Comments regarding HON proposal.
IV-D-50	D. L. Chapman, The Goodyear Tire & Rubber Company, to EPA Air Docket A-90-19. April 14, 1993. Comments regarding HON proposal.
IV-D-51	D. F. Theiler, State of Wisconsin, Department of Natural Resources, to EPA Air Docket A-90-19. April 15, 1993. Comments regarding HON proposal.
IV-D-52	R. M. Baldisserotto, Hoffmann-La Roche, to EPA Air Docket A-90-19. April 15, 1993. Comments regarding HON proposal.
IV-D-53	V. E. Messick, Vista Chemical Company, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal.
IV-D-54	D. A. Woodring, BP Chemicals, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-D-55	T. Tepedino, CITGO Petroleum Corporation, to EPA Air Docket A-90-19. April 15, 1993. Comments regarding HON proposal.
IV-D-56	P. M. King, PPG Industries, to EPA Air Docket A-90-19. April 15, 1993. Comments regarding HON proposal.
IV-D-57	S. Engelman, Hoechst Cleanese Corporation, to EPA Air Docket A-90-19. April 15, 1993. Comments regarding HON proposal.
IV-D-58	P. C. Bailey, American Petroleum Institute (API), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal.
IV-D-59	T. A. Kovacic, Dow Corning, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-60	A. T. Roy, Allied Signal, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-D-61	B. J. Price, Phillips Petroleum Company, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-62	P. T. Cavanaugh, The Chevron Companies, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal.
IV-D-63	S. J. H. Manekshaw, Pennzoil Company, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-64	B. D. Patterson, Exxon Company, U.S.A., to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-65	D. G. Berkebile, The Goodyear Tire & Rubber Company, to EPA Air Docket A-90-19. April 16, 1993. (See comments dated April 14, 1993--IV-D-50). Comments regarding HON proposal.
IV-D-66	E. J. Flynn, Louisiana Chemical Association, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-67	R. D. Truelove, Conoco, Inc., to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-

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	90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal.
IV-D-68	E. A. Fisher, Rohm and Haas, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-69	D. C. Copeland and F. P. Collis, OxyChem, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, and A-90-21. April 16, 1993. Comments regarding HON proposal.
IV-D-70	W. R. Campbell, Texas Air Control Board, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal.
IV-D-71	G. R. Reynolds and M. O. Tanzer, GE Plastics, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-72	J. W. Vinzant, Kaiser Aluminum, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-73	B. L. Taranto, Exxon Chemical Americas, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.

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IV-D-74	E. L. DuSold, Eli Lilly and Company, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-75	R. R. Kienle, Shell Oil Company, to EPA Air Dockets A-90-19 and A-90-23. April 16, 1993. Comments regarding HON proposal.
IV-D-76	V. W. Chen, Louisiana State University Medical Center, J. Meyer and EPA Air Docket A-90-19. April 16, 1993. Monograph on cancer in Louisiana (Volume VII).
IV-D-77	R. C. Phelps and J. L. Woolbert, Eastman Kodak (Texas), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal.
IV-D-78	A. J. Dawson, American Cyanamid Company, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-79	W. P. Leonard, Borden Chemicals and Plastics, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-80	J. T. Sell, National Paint & Coatings Association, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-

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	90-20, A-90-21, A-90-22, and A-90-23. April 18, 1993. Comments regarding HON proposal.
IV-D-81	G. D. Strickland, Chemical Manufacturers Association (Diisocyanates Panel of CMA), to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-82	J. E. Gilchrist, American Mining Congress, to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-83	R. T. Paul, The Coalition for Clean Air Implementation, to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-84	G. D. Strickland, Chemical Manufacturers Association (Phthalate Esters Panel of CMA), to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-85	D. Driesen, Natural Resources Defense Council, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal.
IV-D-86	S. L. Edwards, Synthetic Organic Chemical Manufacturers Association, Inc. (SOCMA), to EPA Air

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	Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-87	D. J. Ames, State of California, Air Resources Board, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal.
IV-D-88	V. McIntire, Eastman Chemical Company, to EPA Air Docket A-90-19. April 15, 1993. Comments regarding HON proposal.
IV-D-89	R. T. Richards, Texaco, Inc., to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-90	T. M. Allen, New York State Department of Environmental Conservation, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-91	C. D. Bennett, Ashland Petroleum Company, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-92	N. Dee, National Petroleum Refiners Association, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-

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	20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal.
IV-D-93	M. Zaw-Mon, Maryland Department of the Environment, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal.
IV-D-94	M. E. Johnson, John Muir (Wisconsin) Chapter of the Sierra Club, to C. Browner, EPA Administrator. April 16, 1993. Comments regarding HON proposal.
IV-D-95	J. Schulze, Ciba Geigy, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-96	S. C. Harrington, Sierra Club Legal Defense Fund, Inc., to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal.
IV-D-97	J. A. Dege, DuPont, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal.
IV-D-98	Comments of the American Forest and Paper Association. April 19, 1993. Comments regarding HON proposal.

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IV-D-99	I. N. Vaughan (Association of Local Air Pollution Control Officials [ALAPCO], and T. M. Allen (State and Territorial Air Pollution Program Administrators [STAPPA]), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal.
IV-D-100	M. J. Bradley, Northeast States for Coordinated Air Use Management (NESCAUM), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal.
IV-D-101	G. D. Strickland, Chemical Manufacturers Association (Olefins Panel of CMA), to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-102	G. D. Strickland, Chemical Manufacturers Association (Ethylene Oxide Industry Panel of CMA), to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-103	P. L. DeFur, E. K. Silbergeld, and L. Epstein, Environmental Defense Fund, to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.

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IV-D-104	D. P. Bowers, Merck & Co., Inc. to EPA Air Docket, Attn: Docket Numbers A-90-19 and A-90-20. April 19, 1993. Comments regarding HON proposal.
IV-D-105	S. C. Tautfest, Keller and Heckman (on behalf of the Vinyl Institute), to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-106	L. Williams, The Aluminum Association, to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-107	R. J. Connor, Manufacturers of Emission Controls Association (MECA), to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-108	T. X. White, Pharmaceutical Manufacturers Association, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, and A-90-23. April 19, 1993. Comments regarding HON proposal.
IV-D-109	D. S. Freedman, U. S. Small Business Administration, to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-110	W. Caffey Norman, Patton, Boggs & Blow (on behalf of the Halogenated Solvents Industry Alliance [HSIA]),

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	to EPA Air Docket A-90-19. April 19, 1993. Comments regrading HON proposal.
IV-D-111	J. S. Berry, Rhone-Poulenc, to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-112	D. E. Davis, Vulcan Chemicals, to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-113	W. R. Quanstrom, Amoco Corporation, to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-114	M. M. Orr, Louisiana Environmental Action Network (LEAN); R. Abraham, Texans United; W. E. Sanders, OCAW Local 4-449; P. Bryant, Gulf Coast Tenants Organization; S. Blyskal, Citizens for a Clean Environment; S. C. Harrington, Sierra Club Legal Defense Fund; F. Robinson, North Baton Rouge Environmental Association; D. Nicolai, OCAW Local 4-620; and R. Parry, Galveston-Houston Against Smog Pollution, to J. Meyer, EPA:ESD. March 24, 1993. Letter of thanks for attending the public hearing.
IV-D-115	S. Lopez, Bay Area Air Quality Management District, to EPA Air Docket, Attn: Docket Nos. A-90-19,

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	A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal.
IV-D-116	B. C. Henderson, R.J. Reynolds Tobacco Company, to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-117	D. Stevens, Jr., Louisiana Environmental Action Network (LEAN), to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal.
IV-D-118	R. Abraham, Texans United Education Fund, to C. M. Browner, EPA Administrator. March 1, 1993. Comments regarding HON proposal.
IV-D-119	C. Robinson, private citizen, to C. Browner, EPA Administrator. March 16, 1993. Comments regarding HON proposal.
IV-D-120	B. Mannchen, private citizen, to C. Browner, EPA Administrator. April 14, 1993. Comments regarding HON proposal.
IV-D-121	D. W. Gustafson, J. A. Crites, and T. A. Threet, The Dow Chemical Company, to Chief, EPA Information Policy Branch. April 16, 1993. Comments regarding HON proposal.

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IV-D-122	M. L. Brisker, private citizen, to C. Browner, EPA Administrator. Undated. Comments regarding HON proposal.
IV-D-123	D. Makin, private citizen, to C. Browner, EPA Administrator. Undated. Comments regarding HON proposal.
IV-D-124	N. Paravicini, private citizen, to C. M. Browner, EPA Administrator. March 27, 1993. Comments regarding HON proposal.
IV-D-125	N. F. Parks, Sierra Club, Pennsylvania Chapter, to C. M. Browner, EPA Administrator. March 31, 1993. Comments regarding HON proposal.
IV-D-126	T. K. Elliott, Photovac, to EPA's Air Docket. March 23, 1993. Comments regarding HON proposal.
IV-D-127	Figure A - Sampling System for Hydrocarbons and Other Emissions. Attachment inadvertently omitted from Item No. IV-D-16 (letter from B. L. Bailey, General Electric Company, to Air Docket Section (A-90-19) [in letter, referred to as "the attached sketch."] March 26, 1993. Comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-F-1	PUBLIC HEARING IN THE MATTER OF: Proposed Hazardous Organic NESHAP. Transcript of Hearing held in the EPA Administrative Building, Research Triangle Park, NC. February 25, 1993.
IV-F-2	V. S. Everette, Radian Corporation, to Docket No. A-90-19, HON. Public hearing on the proposed hazardous organic NESHAP (HON). List of panel, speakers, and attendees. February 25, 1993.
IV-F-3	Statement of J. Hovious on behalf of the Chemical Manufacturers Association before the Environmental Protection Agency on the Proposed Hazardous Organic NESHAP for the SOCFI Industry. February 25, 1993.
IV-F-4	Statement of P. Jann on behalf of the Chemical Manufacturers Association before the Environmental Protection Agency on the Proposed Hazardous Organic NESHAP for the SOCFI Industry. February 25, 1993.

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IV-F-5	Testimony of R. T. Paul on behalf of the Coalition for Clean Air Implementation (CCAI) before the Environmental Protection Agency on the Proposed Hazardous Organic NESHAP for the SOCOMI Industry. February 25, 1993.
IV-F-6	Oral statement of F. D. Gealy, Atlantic Richfield Company (ARCO), Chairman of the Air Toxics Task Force for the American Petroleum Institute, before the Environmental Protection Agency on the Proposed NESHAP Standards for the Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry and Seven Other Processes. February 25, 1993.
IV-F-7	PUBLIC HEARING IN THE MATTER OF: Proposed Hazardous Organic NESHAP. Transcript of Hearing held in the Conservation Hearing Room of the Louisiana Department of Natural Resources, Baton Rouge, Louisiana. March 18, 1993.

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<u>Item No.</u>	<u>Description</u>
IV-F-8	V. S. Everette, Radian Corporation, to Docket No. A-90-19, HON. April 15, 1993. Second public hearing on the proposed hazardous organic NESHAP (HON). List of panel, speakers, and attendees for the Baton Rouge public hearing held March 18, 1993.
IV-F-9	Remarks of P. Bryant, Gulf Coast Tenants Organization, before the Environmental Protection Agency on the Proposed Hazardous Organic NESHAP for the SOCFI Industry public hearing held in Baton Rouge, Louisiana, March 18, 1993.
IV-F-10	Remarks of F. T. Robinson, North Baton Rouge Environmental Association, before the Environmental Protection Agency on the Proposed Hazardous Organic NESHAP for the SOCFI Industry public hearing held in Baton Rouge, Louisiana, March 18, 1993.
IV-F-11	Remarks of V. Alexander, Enviro-Medicine Associates, before the Environmental Protection Agency on the Proposed Hazardous Organic NESHAP for the SOCFI Industry public hearing held in Baton Rouge, Louisiana, March 18, 1993.
IV-F-12	Statement of D. M. Driesen, Natural Resources Defense Council, before the Environmental Protection

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Rouge, Louisiana, March 18, 1993.

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<u>Item No.</u>	<u>Description</u>
IV-G-1	M. H. Levin, Nixon, Hargrave, Devans & Doyle (on behalf of Can Manufacturers Institute [CMI]), to EPA Air Docket A-90-19. April 20, 1993. Comments regarding HON proposal.
IV-G-2	D. Driesen, Natural Resources Defense Council (NRDC), to EPA Air Docket A-90-19. April 21, 1993. Comments regarding HON proposal.
IV-G-3	D. M. Driesen, Natural Resources Defense Council (NRDC), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 23, 1993. Comments regarding HON proposal.
IV-G-4	J. C. Hovious, Union Carbide Corporation, to EPA Air Docket, Attn: Docket Nos. A-90-18, A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. (Believe A-90-18 is a typographical error--no such docket number). April 29, 1993. Comments regarding HON proposal.
IV-G-5	M. L. Mullins, Chemical Manufacturers Association, to EPA's Air Docket No. A-90-19.

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	May 27, 1993. Comments on the "Interlaboratory Study."
IV-G-6	D. M. Driesen and R. White, American Lung Association and Natural Resources Defense Council, to M. Shapiro, EPA:OAR. June 4, 1993. Comments regarding HON proposal.
IV-G-7	D. M. Driesen and R. White, American Lung Association and Natural Resources Defense Council, to M. Shapiro, EPA:OAR. June 4, 1993. Comments regarding HON proposal.
IV-G-8	D. Driesen and R. White, American Lung Association and Natural Resources Defense Council, to C. Fox, EPA:OA. June 4, 1993. Comments regarding HON proposal.
IV-G-9	D. M. Driesen and R. White, American Lung Association and Natural Resources Defense Council, to A. Eckert, EPA:OGC. June 4, 1993. Comments regarding HON proposal.
IV-G-10	A. Shelton, NOVA Engineering, Inc., to J. S. Meyer, EPA:SDB. July 8, 1993. Comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-G-11	B. L. Taranto, Exxon Chemical Americas, to EPA Air Docket No. A-90-19. July 9, 1993. Clarifications of Exxon Chemicals Americas Comments on the Proposed HON (57 FR 62608).
IV-G-12	A. Shelton, NOVA Engineering, Inc., to EPA Air Docket No. A-90-19. July 9, 1993. Comments regarding HON proposal.
IV-G-13	D. Driesen, Natural Resources Defense Council, to B. Jordan, EPA:OAQPS. July 15, 1993. Comments regarding HON proposal.
IV-G-14	V. Di Tizio, private citizen, to C. Browner, EPA Administrator. Undated. Comments regarding HON proposal.
IV-G-15	A. Wallos, private citizen, to C. Browner, EPA Administrator. Undated. Comments regarding HON proposal.
IV-G-16	T. T. Cromwell, Chemical Manufacturers Association, to EPA Air Docket No. A-90-19. July 28, 1993. Additional comments regarding HON proposal.
IV-G-17	N. L. Morrow, Exxon Chemical Americas, to EPA Air Docket No. A-90-19. July 27, 1993. Additional comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-G-18	D. Driesen, NRDC, et. al., to C. Browner, EPA Administrator. August 23, 1993. Additional comments regarding HON proposal.
IV-G-19	W. D. Binder, Thermatrix Inc., to D. L. McMurrer, EPA:ESD. April 26, 1993.
IV-G-20	D. G. Hawkins, D. A. Sheiman, D. Driesen, and S. Buccino, Natural Resources Defense Council (NRDC), to M. Nichols, EPA:AA. December 2, 1993. Thank-you letter for meeting with NRDC.

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IV-K-1	D. Driesen, Natural Resources Defense Council, to EPA Air Docket No. A-90-19. Undated. Response to request for supplemental comments.
IV-K-2	L. Williams, The Aluminum Association, to EPA Air Docket No. A-90-19. October 15, 1993. Response to request for supplemental comments.
IV-K-3	D. E. Strayer, Borden Packaging and Industrial Products, to EPA Air Docket A-90-19. October 28, 1993. Response to request for supplemental comments.
IV-K-4	C. W. Ensign, Sinclair Oil Corporation, to EPA Air Docket No. A-90-19. November 3, 1993. Response to request for supplemental comments.
IV-K-5	J. M. Willcox, The Louisiana Land and Exploration Company, to EPA Air Docket No. A-90-19. November 5, 1993. Response to request for supplemental comments.

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<u>Item No.</u>	<u>Description</u>
IV-K-6	A. Lee, Texaco, Inc., to EPA Air Docket No. A-90-19. November 9, 1993. Response to request for supplemental comments.
IV-K-7	S. Engelman, Hoechst Celanese Corporation, to EPA Air Docket No. A-90-19. November 9, 1993. Response to request for supplemental comments.
IV-K-8	G. E. Sutherland, Phillips 66 Company, to EPA Air Docket No. A-90-19. November 9, 1993. Response to request for supplemental comments.
IV-K-9	R. H. Collom, Georgia Department of Natural Resources, to EPA Air Docket No. A-90-19. November 10, 1993. Response to request for supplemental comments.
IV-K-10	B. Hartsock, Texas Natural Resource Conservation Commission, to EPA Air Docket No. A-90-19. November 10, 1993. Response to request for supplemental comments.
IV-K-11	D. E. Byars, Commonwealth Oil Refining Company, Inc. (CORCO), to EPA Air Docket No. A-90-19. November 10, 1993. Response to request for supplemental comments.

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IV-K-12	B. Warren, Consumer Policy Institute, to EPA Air Docket No. A-90-19. November 11, 1993. Response to request for supplemental comments.
IV-K-13	R. R. Kienle, Shell Oil Company, to EPA Air Docket No. A-90-19. November 11, 1993. Response to request for supplemental comments.
IV-K-14	D. F. Hunter, Phillips Petroleum Company, to EPA Air Docket No. A-90-19. November 11, 1993. Response to request for supplemental comments.
IV-K-15	N. L. Renfro, Valero Refining Company, to EPA Air Docket No. A-90-19. November 11, 1993. Response to request for supplemental comments.
IV-K-16	S. Nichols, Diamond Shamrock, to EPA Air Docket No. A-90-19. November 11, 1993. Response to request for supplemental comments.
IV-K-17	N. J. Carman, Sierra Club--Lone Star Chapter, to C. Browner, EPA Administrator. November 11, 1993. Response to request for supplemental comments.
IV-K-18	F. Barron, Placid Refining Company, to EPA Air Docket No. A-90-19. November 11, 1993. Response to request for supplemental comments.

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IV-K-19	P. M. Bitter, The Chevron Companies, to EPA Air Docket No. A-90-19. November 11, 1993. Response to request for supplemental comments.
IV-K-20	D. J. Tippeconnic, Phillips Petroleum Company, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-21	C. D. Malloch, Monsanto, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-22	R. W. Skinner, Air Products, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-23	A. Farmer, Tosco Refining Company, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-24	D. W. Gustafson and T. A. Threet, The Dow Chemical Company, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.

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IV-K-25	M. S. Kelly, Total Petroleum, Inc., to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-26	S. J. H. Manekshaw, Pennzoil Company, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-27	R. C. Phelps, Eastman Chemical Company, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-28	G. R. Reynolds, Jr., GE Plastics, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-29	E. R. Lewis, Texas Petrochemicals Corporation, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-30	D. Theiler and R. Colby, State and Territorial Air Pollution Program Administrators/Association of Local Air Pollution Control Officials (STAPPA/ALAPCO), to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.

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<u>Item No.</u>	<u>Description</u>
IV-K-31	L. W. Cresswell, Kerr-McGee Refining Corporation, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-32	D. K. McCormick, Wyoming Refining Company, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-33	D. W. Gates, Ashland Petroleum Company, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-34	R. P. Strieter, The Coalition for Clean Air Implementation, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-35	J. W. Vinzant, Kaiser Aluminum, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-36	R. J. Weiss, Jr., Crown Central Petroleum Corporation, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.

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<u>Item No.</u>	<u>Description</u>
IV-K-37	D. F. Theiler, State of Wisconsin/Department of Natural Resources, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-38	J. A. Dege, Jr., DuPont, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-39	M. H. Levin, Nixon, Hargrave, Devans & Doyle (on behalf of the Can Manufacturers Institute [CMI]), to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-40	J. S. Berry, Jr., Rhone-Poulenc, Inc., to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-41	L. Fields and G. Collins, National Association for the Advancement of Colored People (Austin Branch), to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-42	T. X. White, Pharmaceutical Manufacturers Association, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.

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<u>Item No.</u>	<u>Description</u>
IV-K-43	J. G. Gerard, American Furniture Manufacturers Association (AFMA), to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-44	P. P. Baljet, American Lung Association, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-45	B. M. Harney, Mobil Oil Corporation, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-46	P. C. Bailey, Jr., American Petroleum Institute (API), to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-47	N. Dee, National Petroleum Refiners Association, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-48	M. W. Abernathy, Fina Oil and Chemical Company, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.

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IV-K-49	B. D. Patterson, Exxon Company, U.S.A., to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-50	J. Thompson, CITGO Petroleum Corporation, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-51	J. M. Christman, Powerine Oil Company, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-52	C. C. Barnard, The UNO-VEN Company, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-53	K. I. Roane, National Cooperative Refinery Association, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-54	M. J. Hansel, Koch Industries, Inc., to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-55	M. J. Bradley, Northeast States for Coordinated Air Use Management (NESCAUM), to EPA Air Docket

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<u>Item No.</u>	<u>Description</u>
	No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-56	S. L. Edwards, Synthetic Organic Chemical Manufacturers Association, Inc. (SOCMA), to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-57	J. C. Hovious, Union Carbide Corporation, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-58	J. Nichols, Pride Refining Inc., to EPA Air Docket No. A-90-19. November 9, 1993. Response to request for supplemental comments.
IV-K-59	N. F. Seppi, Marathon Oil Company, to EPA Air Docket No. A-90-19. November 10, 1993. Response to request for supplemental comments.
IV-K-60	S. T. Bottom, Philbro Energy USA, Inc., to EPA Air Docket No. A-90-19. November 11, 1993. Response to request for supplemental comments.
IV-K-61	F. P. Collis, Occidental Chemical Corporation (OxyChem), to EPA Air Docket No. A-90-19. November

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<u>Item No.</u>	<u>Description</u>
	12, 1993. Response to request for supplemental comments.
IV-K-62	E. L. DuSold, Eli Lilly and Company, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-63	G. Smith, Sierra Club--Lone Star Chapter, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-64	C. A. O'Neil, State of Washington, Department of Ecology, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-65	E. K. Silbergeld, Environmental Defense Fund, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-66	J. J. Mayhew, Chemical Manufacturers Association (CMA), to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-67	B. Mannchen, Galveston-Houston Association for Smog Prevention (GHASP), to EPA Air Docket No. A-90-19.

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	November 12, 1993. Response to request for supplemental comments.
IV-K-68	B. Bateman, Bay Area Air Quality Management District (BAAQMD), to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-69	R. W. Curtis, American Airlines Maintenance & Engineering Center, to EPA Air Docket No. A-90-19. November 15, 1993. Response to request for supplemental comments.
IV-K-70	B. L. Taranto, Exxon Chemical Americas, to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-71	D. Theiler and R. Colby, State and Territorial Air Pollution Program Administrators/Association of Local Air Pollution Control Officials (STAPPA/ALAPCO), to EPA Air Docket No. A-90-19. November 12, 1993. Response to request for supplemental comments.
IV-K-72	C. Kemper, State of Missouri Department of Natural Resources, to EPA Air Docket No. A-90-19. November

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<u>Item No.</u>	<u>Description</u>
	22, 1993. Response to request for supplemental comments.
IV-K-73	R. C. Kaufmann, American Forest & Paper Association, to EPA Air Docket No. A-90-19. November 23, 1993. Response to request for supplemental comments.
IV-K-74	M. Zaw-Mon, Maryland Department of the Environment, to EPA Air Docket No. A-90-19. November 24, 1993. Response to request for supplemental comments.
IV-K-75	D. W. Gustafson and T. A. Threet, The Dow Chemical Company, to EPA Air Docket No. A-90-19. December 2, 1993. Response to request for supplemental comments regarding HON wastewater requirements.

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<u>Item No.</u>	<u>Description</u>
IV-D-1	P. Dolan, Adsistor Technology, Inc., to EPA Air Docket (A-90-20). February 9, 1993. Alternatives to Method 21 for fugitive emissions compliance testing of chemical process equipment pursuant to the proposed NESHAP regulations (40 CFR part 63, subpart H, 63.180). This item is identical to Docket No. A-90-19, Item No. IV-D-8.
IV-D-2	S. Hennigan, The Foxboro Company, to EPA's Air Docket, Attn: A-90-20. February 26, 1993. Comments on HON proposal.
IV-D-3	T. A. Kittleman, Du Pont, to R. Colyer, EPA:ESD. March 9, 1993. HON equipment leak regulation.
IV-D-4	T. R. McCully, ABATECH/Raven, to U.S. EPA (Docket No. A-90-19). March 10, 1993. Comments regarding HON proposal.
IV-D-5	J. E. Schmidt, FMC Corporation, to EPA's Air Docket (A-90-19 and A-90-20). March 30, 1993. Comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-D-6	C. Walsh, The Upjohn Company, to EPA's Air Docket (A-90-20). April 2, 1993. Comments regarding HON proposal.
IV-D-7	J. M. Wilson, Bristol-Myers Squibb Company, to EPA Air Docket A-90-20. March 31, 1993. Comments regarding HON proposal.
IV-D-8	B. Warren, Consumer Policy Institute, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 7, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-41.
IV-D-9	D. L. Chapman, The Goodyear Tire & Rubber Company, to EPA Air Docket A-90-20. April 14, 1993. Comments regarding HON proposal.
IV-D-10	M. L. Mullins, Chemical Manufacturers Association (CMA), to EPA Air Docket A-90-20. April 15, 1993. Comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-D-11	V. E. Messick, Vista Chemical Company, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-52.
IV-D-12	R. M. Baldisserotto, Hoffmann-La Roche, to EPA Air Docket A-90-20. April 15, 1993. Comments regarding HON proposal.
IV-D-13	D. A. Woodring, BP Chemicals, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-53.
IV-D-14	J. Schulze, Ciba-Geigy Corporation, to EPA Air Docket A-90-20. April 16, 1993. Comments regarding HON proposal.
IV-D-15	N. Dee, National Petroleum Refiners Association, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-92.
IV-D-16	M. Zaw-Mon, Maryland Department of the Environment, to EPA Air Docket, Attn: Docket Numbers A-90-19,

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<u>Item No.</u>	<u>Description</u>
	A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-93.
IV-D-17	J. A. Dege, DuPont, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-97.
IV-D-18	C. D. Malloch, Monsanto, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-33.
IV-D-19	D. W. Gustafson and J. A. Crites, The Dow Chemical Company, to EPA Air Docket A-90-20. April 16, 1993. Comments regarding HON (equipment leaks) proposal. Attachment 1 to this item is identical to Docket No. A-90-19, Item No. IV-D-35.
IV-D-20	T. A. Kovacic, Dow Corning, to EPA Air Docket A-90-20. April 16, 1993. Comments regarding HON proposal.

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IV-D-21	A. T. Roy, Allied Signal, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-60.
IV-D-22	B. D. Patterson, Exxon Company, U.S.A., to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-64.
IV-D-23	R. D. Truelove, Conoco, Inc., to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-67.
IV-D-24	D. G. Berkebile, The Goodyear Tire & Rubber Company, to EPA Air Docket A-90-20. April 16, 1993. Comments regarding HON proposal.
IV-D-25	E. A. Fisher, Rohm and Haas, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-68.
IV-D-26	B. L. Taranto, Exxon Chemical Americas, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding

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	HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-73.
IV-D-27	E. L. DuSold, Eli Lilly and Company, to EPA Air Docket A-90-20. April 16, 1993. Comments regarding HON proposal.
IV-D-28	R. C. Phelps and J. L. Woolbert, Eastman Kodak (Texas), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-77.
IV-D-29	W. P. Leonard, Borden Chemicals and Plastics, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal (equipment leaks).
IV-D-30	J. T. Sell, National Paint & Coatings Association, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 18, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-80.
IV-D-31	I. N. Vaughan (Association of Local Air Pollution Control Officials [ALAPCO], and T. M. Allen (State and Territorial Air Pollution Program Administrators

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	[STAPPA]), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-99.
IV-D-32	M. J. Bradley, Northeast States for Coordinated Air Use Management (NESCAUM), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-100.
IV-D-33	T. X. White, Pharmaceutical Manufacturers Association, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-108.
IV-D-34	D. P. Bowers, Merck & Co., Inc. to EPA Air Docket, Attn: Docket Numbers A-90-19 and A-90-20. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-104.
IV-D-35	M. L. Mullins, Chemical Manufacturers Association (CMA), to EPA Air Docket Office, Attn: Docket

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<u>Item No.</u>	<u>Description</u>
	Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-32.
IV-D-36	T. G. Dittman, TRC Environmental Corporation, to EPA Air Docket A-90-20. April 19, 1993. Comments regarding HON proposal.
IV-D-37	J. C. Hovious, Union Carbide Corporation, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-34.
IV-D-38	A. Claassen, Latham & Watkins (on behalf of BASF Corporation and Miles Inc.), to EPA Air Docket A-90-20. April 19, 1993. Comments regarding HON proposal.
IV-D-39	S. L. Edwards, Synthetic Organic Chemical Manufacturers Association, Inc. (SOCMA), to EPA Air Docket A-90-20. April 19, 1993. Comments regarding HON proposal. The enclosure to this item is identical to Docket No. A-90-19, Item No. IV-D-86.
IV-D-40	S. Lopez, Bay Area Air Quality Management District, to EPA Air Docket, Attn: Docket Nos. A-90-19,

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<u>Item No.</u>	<u>Description</u>
	A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-115.
IV-D-41	J. D. Spurgeon, Circo-Flex Corporation, to EPA Air Docket No. A-90-20. Comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-G-1	D. M. Driesen, Natural Resources Defense Council (NRDC), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 23, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-G-3.
IV-G-2	J. C. Hovious, Union Carbide Corporation, to EPA Air Docket, Attn: Docket Nos. A-90-18, A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. (Believe A-90-18 is a typographical error--no such docket number). April 29, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-G-4.
IV-G-3	L. L. Jackson, Dow U.S.A., to EPA Air Docket No. A-90-20. May 14, 1993. Comments regarding HON proposal.
IV-G-4	C. D. Malloch, Monsanto, to EPA Air Docket No. A-90-19. July 12, 1993. Additional comments regarding HON proposal.

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<u>Item No.</u>	<u>Description</u>
IV-D-1	D. E. Strayer, Borden Packaging and Industrial Products, to EPA Air Docket (A-90-21). March 29, 1993. Comments on proposed SOCFI HON storage vessel provisions.
IV-D-2	W. P. Leonard, Borden Chemicals and Plastics, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-79.
IV-D-3	R. C. Phelps and J. L. Woolbert, Eastman Kodak (Texas), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-77.
IV-D-4	S. L. Edwards, Synthetic Organic Chemical Manufacturers Association, Inc. (SOCMA), to EPA Air Docket A-90-21. April 19, 1993. Comments regarding HON proposal. The enclosure to this letter is identical to Docket No. A-90-19, Item No. IV-D-86.

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<u>Item No.</u>	<u>Description</u>
IV-D-5	B. L. Taranto, Exxon Chemical Americas, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal. The enclosure to this letter is identical to Docket No. A-90-19, Item No. IV-D-73.
IV-D-6	E. A. Fisher, Rohm and Haas, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-68.
IV-D-7	D. G. Berkebile, The Goodyear Tire & Rubber Company, to EPA Air Docket A-90-21. April 16, 1993. Comments regarding HON proposal.
IV-D-8	R. D. Truelove, Conoco, Inc., to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-67.

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<u>Item No.</u>	<u>Description</u>
IV-D-9	B. D. Patterson, Exxon Company, U.S.A., to EPA Air Docket A-90-21. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-64.
IV-D-10	P. T. Cavanaugh, The Chevron Companies, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-62.
IV-D-11	A. T. Roy, Allied Signal, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-60.
IV-D-12	J. T. Sell, National Paint & Coatings Association, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 18, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-68.
IV-D-13	P. C. Bailey, American Petroleum Institute (API), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments

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<u>Item No.</u>	<u>Description</u>
	regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-58.
IV-D-14	D. A. Woodring, BP Chemicals, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-54.
IV-D-15	V. E. Messick, Vista Chemical Company, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-53.

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<u>Item No.</u>	<u>Description</u>
IV-D-16	B. Warren, Consumer Policy Institute, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 7, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-41.
IV-D-17	D. W. Gustafson and J. A. Crites, The Dow Chemical Company, to EPA Air Docket A-90-21. April 16, 1993. Comments regarding HON (storage vessels) proposal. Attachment 1 to this item is identical to Docket No. A-90-19, Item No. 35.
IV-D-18	J. C. Hovious, Union Carbide Corporation, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-34.
IV-D-19	C. D. Malloch, Monsanto, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-33.
IV-D-20	M. L. Mullins, Chemical Manufacturers Association (CMA), to EPA Air Docket Office, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON

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Item No.

Description

proposal. **This item is identical to Docket No. A-90-19, Item No. IV-D-32.**

IV-D-21 I. N. Vaughan (Association of Local Air Pollution Control Officials [ALAPCO], and T. M. Allen (State and Territorial Air Pollution Program Administrators [STAPPA]), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. **This item is identical to Docket No. A-90-19, Item No. IV-D-99.**

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Subcategory IV-D
Additional Comments Received

<u>Item No.</u>	<u>Description</u>
IV-D-22	M. J. Bradley, Northeast States for Coordinated Air Use Management (NESCAUM), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-100.
IV-D-23	P. L. DeFur, E. K. Silbergeld, and L. Epstein, Environmental Defense Fund, to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-103.
IV-D-24	N. Dee, National Petroleum Refiners Association, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-92.
IV-D-25	M. Zaw-Mon, Maryland Department of the Environment, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-93.
IV-D-26	W. R. Quanstrom, Amoco Corporation, to EPA Air Docket A-90-19. April 19, 1993. Comments regarding

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<u>Item No.</u>	<u>Description</u>
	HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-113.
IV-D-27	J. A. Dege, DuPont, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-97.
IV-D-28	S. Lopez, Bay Area Air Quality Management District, to EPA Air Docket, Attn: Docket Nos. A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-115.

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Subcategory IV-G
Late Public Comments Received

<u>Item No.</u>	<u>Description</u>
IV-G-1	D. M. Driesen, Natural Resources Defense Council (NRDC), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 23, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-G-3.
IV-G-2	J. C. Hovious, Union Carbide Corporation, to EPA Air Docket, Attn: Docket Nos. A-90-18, A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. (Believe A-90-18 is a typographical error--no such docket number). April 29, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-G-4.
IV-G-3	B. Mannchen, private citizen, to C. Browner, EPA Administrator. April 14, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-120.

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<u>Item No.</u>	<u>Description</u>
IV-D-1	R. C. Phelps and J. L. Woolbert, Eastman Kodak (Texas), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-77.
IV-D-2	B. L. Taranto, Exxon Chemical Americas, to EPA Air Docket A-90-22. April 16, 1993. Comments regarding HON proposal. The attachments to this letter are identical to Docket No. A-90-19, Item No. IV-D-73.
IV-D-3	R. D. Truelove, Conoco, Inc., to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-67.
IV-D-4	B. D. Patterson, Exxon Company, U.S.A., to EPA Air Docket A-90-22. April 16, 1993. Comments regarding HON proposal. The attachments to this letter are identical to Docket No. A-90-19, Item No. IV-D-64.

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<u>Item No.</u>	<u>Description</u>
IV-D-5	P. T. Cavanaugh, The Chevron Companies, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-62.
IV-D-6	A. T. Roy, Allied Signal, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-60.
IV-D-7	D. G. Berkebile, The Goodyear Tire & Rubber Company, to EPA Air Docket A-90-22. April 16, 1993. Comments regarding HON proposal.
IV-D-8	J. T. Sell, National Paint & Coatings Association, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 18, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-80.
IV-D-9	P. C. Bailey, American Petroleum Institute (API), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-21, A-90-22, and A-90-23. April

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Additional Comments Received

<u>Item No.</u>	<u>Description</u>
	16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-58.
IV-D-10	D. A. Woodring, BP Chemicals, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-54.
IV-D-11	V. E. Messick, Vista Chemical Company, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-53.
IV-D-12	B. Warren, Consumer Policy Institute, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 7, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-41.
IV-D-13	D. W. Gustafson and J. A. Crites, The Dow Chemical Company, to EPA Air Docket A-90-22. April 16, 1993. Comments regarding HON (transfer operations) proposal. Attachment 1 of this item is identical to Docket No. A-90-19, Item No. IV-D-35.

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<u>Item No.</u>	<u>Description</u>
IV-D-14	J. C. Hovious, Union Carbide Corporation, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-34.
IV-D-15	C. D. Malloch, Monsanto, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-33.

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<u>Item No.</u>	<u>Description</u>
IV-D-16	M. L. Mullins, Chemical Manufacturers Association (CMA), to EPA Air Docket Office, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-32.
IV-D-17	I. N. Vaughan (Association of Local Air Pollution Control Officials [ALAPCO], and T. M. Allen (State and Territorial Air Pollution Program Administrators [STAPPA]), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-99.
IV-D-18	M. J. Bradley, Northeast States for Coordinated Air Use Management (NESCAUM), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-100.
IV-D-19	N. Dee, National Petroleum Refiners Association, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-92.

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<u>Item No.</u>	<u>Description</u>
IV-D-20	M. Zaw-Mon, Maryland Department of the Environment, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-93.
IV-D-21	J. A. Dege, DuPont, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-97.

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<u>Item No.</u>	<u>Description</u>
IV-D-22	S. Lopez, Bay Area Air Quality Management District, to EPA Air Docket, Attn: Docket Nos. A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-115.

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<u>Item No.</u>	<u>Description</u>
IV-G-1	D. M. Driesen, Natural Resources Defense Council (NRDC), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 23, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-G-3.
IV-G-2	J. C. Hovious, Union Carbide Corporation, to EPA Air Docket, Attn: Docket Nos. A-90-18, A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. (Believe A-90-18 is a typographical error--no such docket number). April 29, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-G-4.
IV-G-3	B. Mannchen, private citizen, to C. Browner, EPA Administrator. April 14, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-120.

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Docket No. A-90-23
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<u>Item No.</u>	<u>Description</u>
IV-D-1	G. A. Brier, The Upjohn Company, to EPA's Air Docket, Attn: A-90-23. March 18, 1993. Comments on proposed HON wastewater provisions.
IV-D-2	D. E. Strayer, Borden Packaging and Industrial Products, to EPA Air Docket A-90-19. April 7, 1993. Comments on HON wastewater provisions for group 1 wastewater.
IV-D-3	B. Warren, Consumer Policy Institute, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 7, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-41.
IV-D-4	R. Skinner, Air Products, to EPA Air Docket A-90-23. April 14, 1993. Comments regarding HON proposal.
IV-D-5	D. A. Woodring, BP Chemicals, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-54.

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<u>Item No.</u>	<u>Description</u>
IV-D-6	V. E. Messick, Vista Chemical Company, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-53.
IV-D-7	W. P. Leonard, Borden Chemicals and Plastics, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-79.
IV-D-8	R. C. Phelps and J. L. Woolbert, Eastman Kodak (Texas), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-77.
IV-D-9	E. L. DuSold, Eli Lilly and Company, to EPA Air Docket A-90-23. April 16, 1993. Comments regarding HON proposal.
IV-D-10	B. L. Taranto, Exxon Chemical Americas, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal. The attachments to this item are identical to Docket No. A-90-19, Item No. IV-D-73.

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<u>Item No.</u>	<u>Description</u>
IV-D-11	E. A. Fisher, Rohm and Haas, to EPA Air Docket A-90-19. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-68.
IV-D-12	R. D. Truelove, Conoco, Inc., to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-67.
IV-D-13	B. D. Patterson, Exxon Company, U.S.A., to EPA Air Docket A-90-23. April 16, 1993. Comments regarding HON proposal. The attachment to this item is identical to Docket No. A-90-19, Item No. IV-D-64.
IV-D-14	N. A. Kilbourn, Sun Company, Inc., to EPA Air Docket. April 16, 1993. Comments regarding HON proposal.
IV-D-15	P. T. Cavanaugh, The Chevron Companies, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-62.
IV-D-16	A. T. Roy, Allied Signal, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22,

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<u>Item No.</u>	<u>Description</u>
	and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-60.
IV-D-17	D. G. Berkebile, The Goodyear Tire & Rubber Company, to EPA Air Docket A-90-23. April 16, 1993. Comments regarding HON proposal.
IV-D-18	T. A. Kovacic, Dow Corning, to EPA Air Docket A-90-23. April 16, 1993. Comments regarding HON proposal.
IV-D-19	P. C. Bailey, American Petroleum Institute (API), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-58.
IV-D-20	D. W. Gustafson and J. A. Crites, The Dow Chemical Company, to EPA Air Docket A-90-23. April 16, 1993. Comments regarding HON (wastewater operations) proposal. Attachment 1 to this item is identical to Docket No. A-90-19, Item No. IV-D-35.
IV-D-21	J. Schulze, Ciba-Geigy, to EPA Air Docket A-90-23. April 16, 1993. Comments regarding HON proposal.

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Docket No. A-90-23
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Additional Comments Received

<u>Item No.</u>	<u>Description</u>
IV-D-22	C. D. Malloch, Monsanto, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-33.
IV-D-23	N. Dee, National Petroleum Refiners Association, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-92.
IV-D-24	M. Zaw-Mon, Maryland Department of the Environment, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-93.
IV-D-25	J. A. Dege, DuPont, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 16, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-97.

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<u>Item No.</u>	<u>Description</u>
IV-D-26	J. T. Sell, National Paint & Coatings Association, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 18, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-80.
IV-D-27	M. L. Mullins, Chemical Manufacturers Association (CMA), to EPA Air Docket Office, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-32.
IV-D-28	R. C. Fortuna, Hazardous Waste Treatment Council, to EPA Air Docket A-90-23. April 19, 1993. Comments regarding HON proposal.
IV-D-29	I. N. Vaughan (Association of Local Air Pollution Control Officials [ALAPCO]), and T. M. Allen (State and Territorial Air Pollution Program Administrators [STAPPA]), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-99.

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<u>Item No.</u>	<u>Description</u>
IV-D-30	M. J. Bradley, Northeast States for Coordinated Air Use Management (NESCAUM), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-100.
IV-D-31	G. D. Strickland, Chemical Manufacturers Association (Ethylene Oxide Industry Panel of CMA), to EPA Air Dockets A-90-19 and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-102.

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<u>Item No.</u>	<u>Description</u>
IV-D-32	T. X. White, Pharmaceutical Manufacturers Association, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, and A-90-23. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-108.
IV-D-33	W. Caffey Norman, Patton, Boggs & Blow (on behalf of the Halogenated Solvents Industry Alliance [HSIA]), to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-110.
IV-D-34	W. R. Quanstrom, Amoco Corporation, to EPA Air Docket A-90-19. April 19, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-113.
IV-D-35	S. L. Edwards, Synthetic Organic Chemical Manufacturers Association, Inc. (SOCMA), to EPA Air Docket A-90-23. April 19, 1993. Comments regarding HON proposal. The enclosure to this item is identical to Docket No. A-90-19, Item No. IV-D-86.
IV-D-36	J. C. Hovious, Union Carbide Corporation, to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 19, 1993.

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<u>Item No.</u>	<u>Description</u>
	Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-34.
IV-D-37	S. Lopez, Bay Area Air Quality Management District, to EPA Air Docket, Attn: Docket Nos. A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 15, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-115.

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Late Public Comments Received

<u>Item No.</u>	<u>Description</u>
IV-G-1	D. M. Driesen, Natural Resources Defense Council (NRDC), to EPA Air Docket, Attn: Docket Numbers A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. April 23, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-G-3.
IV-G-2	D. Driesen, Natural Resources Defense Council (NRDC), to EPA Air Docket A-90-23. April 23, 1993. Comments regarding HON proposal.
IV-G-3	J. C. Hovious, Union Carbide Corporation, to EPA Air Docket, Attn: Docket Nos. A-90-18, A-90-19, A-90-20, A-90-21, A-90-22, and A-90-23. (Believe A-90-18 is a typographical error--no such docket number). April 29, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-G-4.
IV-G-4	Final report entitled "Modeling of Tray-Type Steam Stripping Columns." Submitted by A. Stanley, Chemical Manufacturers Association. April 30, 1993 (revised May 10, 1993). This item should be considered an addendum to Docket No. A-90-90, Item No. IV-D-32.

Hazardous Organic NESHAP (HON): Wastewater
Docket No. A-90-23
Subcategory IV-G
Late Public Comments Received

<u>Item No.</u>	<u>Description</u>
IV-G-5	A. Shelton, NOVA Engineering, Inc., to EPA Air Docket No. A-90-23. July 9, 1993. Comments regarding HON proposal.
IV-G-6	B. Mannchen, private citizen, to C. Browner, EPA Administrator. April 14, 1993. Comments regarding HON proposal. This item is identical to Docket No. A-90-19, Item No. IV-D-120.
IV-G-7	A. Stanley, Chemical Manufacturers Association (CMA), to J. Meyer, EPA:SDB. April 9, 1993. Letters relating to CMA's proposed wastewater configurations and further language and revised schematics.
IV-G-8	B. C. Davis, Exxon Chemical Company, to J. Meyer, EPA:SDB. April 13, 1993. Henry's Law and ASPEN.

Hazardous Organic NESHAP (HON): Wastewater
Docket No. A-90-23
Subcategory IV-G
Late Public Comments Received

Item No.

Description

Two commenters (A-90-19: IV-D-34; IV-D-77) supported comments submitted by the Ethylene Oxide Industry Council of Chemstar Division of CMA (A-90-19: IV-D-102).

One commenter (A-90-19: IV-D-79) supported comments submitted by the Vinyl Institute (A-90-19: IV-D-105).

Several commenters (A-90-19: IV-D-51; IV-D-90; IV-D-93; IV-D-100) supported comments submitted by the State and Territorial Air Pollution Program Administrators/Association of Local Air Pollution Control Officers (STAPPA/ALAPCO) (A-90-19: IV-D-99).

Four commenters (A-90-19: IV-D-87; IV-D-115; IV-K-64; IV-K-74) supported comments submitted in a STAPPA/ALAPCO letter dated March 23, 1993.

One commenter (A-90-19: IV-D-94) supported comments submitted by the Wisconsin Department of Natural Resources (A-90-19: IV-D-51) re: considering toxicity for emissions averaging. One commenter (A-90-19: IV-K-4) supports the NPRA comment regarding emissions averaging.

One commenter (A-90-19: IV-D-94) supported the testimony at the March 18, 1993 public hearing regarding risk-based standards of STAPPA/ALAPCO (A-90-19: IV-F-7.6).

One commenter (A-90-19: IV-D-97) supported comments submitted by the Synthetic Organic Chemical Manufacturing Association (A-90-19: IV-D-86).

Numerous commenters (A-90-19: IV-D-82; IV-D-98; IV-K-6; IV-K-19; IV-K-45; IV-K-46; IV-K-73) (A-90-23: IV-D-14) supported comments submitted by the Coalition for Clean Air Implementation (A-90-19: IV-D-83).

Hazardous Organic NESHAP (HON): Wastewater
Docket No. A-90-23
Subcategory IV-G
Late Public Comments Received

Item No.

Description

One commenter (A-90-19: IV-D-46) supported comments submitted by the American Forest and Paper Association.

Two commenters (A-90-19: IV-D-43; IV-D-47) agreed with all comments submitted by the Consumer Policy Institute, Consumers Union.

One commenter (A-90-19: IV-D-105) supported comments submitted by Dow Chemical Company.

One commenter (A-90-19: IV-D-72) supported comments submitted by the Aluminum Association (A-90-19: IV-D-106).

One commenter (A-90-19: IV-D-115) supported comments submitted by the California Air Resources Board (A-90-19: IV-D-87).

Hazardous Organic NESHAP (HON): Wastewater
Docket No. A-90-23
Subcategory IV-G
Late Public Comments Received

<u>Item No.</u>	<u>Description</u>
	RCRA (40 CFR parts 260 through 272)
	see table 6-4

- 1 The requirements specified in this table are applicable only after the compliance dates specified in §63.100(k) of the final HON.
- 2 Also, the HON provisions (rather than the NSPS or vinyl chloride NESHAP provisions) apply if owners or operators of process vents subject to the HON elect to control process vents to the levels specified in §63.113(a)(1) or (a)(2) of subpart G without determining whether the vent is Group 1 or Group 2.

TABLE 6-3. OVERLAP FOR HON GROUP 2 EMISSION POINTS¹ (CONTINUED)

Emission Point	Overlapping Regulation	Compliance Requirement
Process Vents	Air oxidation NSPS (40 CFR part 60 subpart III)	<p>For TRE ≤ 1 as determined by the procedures in 40 CFR part 60 subpart III, comply with:</p> <p>(1) Provisions of the HON and the NSPS for applicability determination and associated recordkeeping and reporting, and</p> <p>(2) Provisions of the HON and the NSPS for process changes; TRE recalculation, and associated recordkeeping and reporting, and</p> <p>(3) Control requirements of §60.612 of the NSPS. Comply with either the control device testing, monitoring, and reporting requirements of the NSPS <u>or</u> those for HON group 1 process vents.</p> <p>For TRE > 1 as determined by the procedures in 40 CFR part 60 subpart III, comply with:</p> <p>(1) Provisions of the HON and the NSPS for applicability determination and the associated recordkeeping and reporting, and</p> <p>(2) Provisions of the HON and the NSPS for process changes, TRE recalculations, and associated recordkeeping and reporting, and</p> <p>(3) If only the NSPS requires continuous monitoring of recovery devices comply with NSPS monitoring and associated recordkeeping and reporting.</p> <p>(4) If both the HON and the NSPS require recovery device monitoring, comply with only the HON recovery device monitoring and associated recordkeeping and reporting.</p>

TABLE 6-3. OVERLAP FOR HON GROUP 2 EMISSION POINTS¹ (CONTINUED)

Emission Point	Overlapping Regulation	Compliance Requirement
Process Vents (continued)	Distillation NSPS (40 CFR part 60 subpart NNN)	<p>For $TRE \leq 1$ as determined by the procedures in 40 CFR part 60 subpart NNN, comply with:</p> <p>(1) Provisions of the HON and the NSPS for applicability determination and associated recordkeeping and reporting, and</p> <p>(2) Provisions of the HON and the NSPS for process changes; TRE recalculation, and associated recordkeeping and reporting, and</p> <p>(3) Control requirements of §60.662 of the NSPS. Comply with either the control device testing, monitoring, and reporting requirements of the NSPS <u>or</u> those for HON group 1 process vents.</p> <p>For $TRE > 1$ as determined by the procedures in 40 CFR part 60 subpart NNN comply with:</p> <p>(1) Provisions of the HON and the NSPS for applicability determination and the associated recordkeeping and reporting, and</p> <p>(2) Provisions of the HON and the NSPS for process changes, TRE recalculations, and associated recordkeeping and reporting, and</p> <p>(3) If only the NSPS requires continuous monitoring of recovery devices comply with NSPS monitoring and associated recordkeeping and reporting.</p> <p>(4) If both the HON and the NSPS require recovery device monitoring, comply with only the HON recovery device monitoring and associated recordkeeping and reporting.</p>

TABLE 6-3. OVERLAP FOR HON GROUP 2 EMISSION POINTS¹ (CONCLUDED)

Emission Point	Overlapping Regulation	Compliance Requirement
Process Vents (continued)	Reactor NSPS (40 CFR part 60 subpart RRR) Vinyl Chloride NESHAP (40 CFR part 61 subpart F)	For TRE ≤ 1 as determined by the procedures in 40 CFR part 60 subpart RRR, comply with: (1) Provisions of the HON and the NSPS for applicability determination and associated recordkeeping and reporting, and (2) Provisions of the HON and the NSPS for process changes; TRE recalculation, and associated recordkeeping and reporting, and (3) Control requirements of §60.702 of the NSPS. Comply with either the control device testing, monitoring, and reporting requirements of the NSPS <u>or</u> those for HON group 1 process vents. For TRE > 1 as determined by the procedures in 40 CFR part 60 subpart RRR, comply with: (1) Provisions of the HON and the NSPS for applicability determination and the associated recordkeeping and reporting, and (2) Provisions of the HON and the NSPS for process changes, TRE recalculations, and associated recordkeeping and reporting, and (3) If only the NSPS requires continuous monitoring of recovery devices comply with NSPS monitoring and associated recordkeeping and reporting. (4) If both the HON and the NSPS require recovery device monitoring, comply with only the HON recovery device monitoring and associated recordkeeping and reporting. If the vent is controlled by a combustion device to meet the vinyl chloride NESHAP, comply with either the control device testing, monitoring, recordkeeping, and reporting requirements of the vinyl chloride NESHAP or those for HON group 1 process vents. If the vent is not controlled by a combustion device, comply with both the vinyl chloride NESHAP and the HON provisions for group 2 process vents.
Wastewater Streams	Benzene Waste NESHAP (40 CFR part 61 subpart FF) Vinyl Chloride NESHAP (40 CFR part 61 subpart F)	Benzene Waste NESHAP and HON see table 6-4

Emission Point	Overlapping Regulation	Compliance Requirement
	RCRA (40 CFR parts 260 through 272)	see table 6-4

¹ The requirements specified in this table are applicable only after the compliance dates specified in §63.100(k) of the final HON.

TABLE 6-4. OVERLAP FOR HON GROUP 1 OR GROUP 2 EMISSION POINTS¹

Emission Point	Overlapping Regulation	Compliance Requirement
Wastewater Streams	RCRA (40 CFR parts 260 through 272)	(1) Comply with the more stringent requirements and keep a record of information used to make stringency determination, <u>or</u> (2) Submit as part of the Implementation Plan or operating permit application a request for a case-by-case determination of requirements.
Wastewater Streams	Vinyl Chloride NESHAP (40 CFR part 61 subpart FF)	(1) Comply with both the HON and the Vinyl Chloride NESHAP, <u>or</u> (2) Submit as part of the Implementation Plan or operating permit application information demonstrating that compliance with the Vinyl Chloride NESHAP will assure compliance with the HON.

¹ The requirements specified in this table are applicable only after the compliance dates specified in §63.100(k) of the final HON.

HAZARDOUS AIR POLLUTANT EMISSIONS
FROM PROCESS UNITS IN THE
SYNTHETIC ORGANIC CHEMICAL
MANUFACTURING INDUSTRY--
BACKGROUND INFORMATION FOR
PROMULGATED STANDARDS

Volume 2D: Comments on Applicability,
National Impacts, and Overlap
with Other Rules

Emission Standards Division

U.S. Environmental Protection Agency
Office of Air and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

January 1994

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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 2D: Comments on Applicability, National
Impacts, and Overlap with Other Rules

Prepared by:

Bruce Jordan

(Date)

Director, Emission Standards Division
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

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.
3. For additional information contact:

Dr. Janet Meyer
Standards Development Branch (MD-13)
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Research Triangle Park, NC 27711
Telephone: (919) 541-5254

4. Paper copies of this document may be obtained from:

National Technical Information Service (NTIS)
5285 Port Royal Road
Springfield, VA 22161
Telephone: (703) 487-4650

5. Electronic copies of this document may be obtained from the EPA Technology Transfer Network (TTN). The TTN is an electronic bulletin board system which is free, except for the normal long distance charges. To access the HON BID:

- Set software to data bits: 8, N; stop bits: 1
- Use access number (919) 541-5742 for 1200, 2400, or 9600 bps modems [access problems should be directed to the system operator at (919) 541-5384].
- Specify TTN Bulletin Board: Clean Air Act Amendments
- Select menu item: Recently Signed Rules

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), which will affect the Synthetic Organic Chemical Manufacturing Industry (SOCMI). The BID comprises six volumes including:

- Volume 2A: Comments on Process Vents, Storage Vessels, Transfer Racks, 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 racks, 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 ABBREVIATION LIST

<u>ACRONYM</u>	<u>TERM</u>
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

ACRONYM AND ABBREVIATION LIST, CONTINUED

<u>ACRONYM</u>	<u>TERM</u>
HAP	hazardous air pollutant
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

ACRONYM AND ABBREVIATION LIST, CONTINUED

<u>ACRONYM</u>	<u>TERM</u>
PSD	prevention of significant deterioration
QIP	quality improvement program
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

ACRONYM AND ABBREVIATION LIST, CONTINUED

<u>ACRONYM</u>	<u>TERM</u>
VOHAP	volatile organic hazardous air pollutant
 <u>ABBREVIATION</u>	
<u>UNIT OF MEASURE</u>	
bb1	barrel
BOE	barrels of oil equivalent
Btu	British thermal unit
Btu/kW-hr	British thermal unit per kilowatt-hour
°C	degrees Celsius
°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
ℓ/hour•m ²	liters per hour per square meter
ℓpm	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

ACRONYM AND ABBREVIATION LIST, CONTINUED

ABBREVIATION
UNIT OF MEASURE

scm/min	standard cubic meter per minute
TJ	terajoules
yr	year

LIST OF FREQUENTLY USED TERMS

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(1) of the Act,

LIST OF FREQUENTLY USED TERMS, CONTINUED

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(1) 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

LIST OF FREQUENTLY USED TERMS, CONTINUED

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).

HAZARDOUS AIR POLLUTANT EMISSIONS
FROM PROCESS UNITS IN THE
SYNTHETIC ORGANIC CHEMICAL
MANUFACTURING INDUSTRY--
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Volume 2E: Comments on Recordkeeping,
Reporting, Compliance, and Test Methods

Emission Standards Division

U.S. Environmental Protection Agency
Office of Air and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

January 1994

DISCLAIMER

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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

Prepared by:

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(Date)

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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.
3. For additional information contact:

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4. Paper copies of this document may be obtained from:

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5285 Port Royal Road
Springfield, VA 22161
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5. Electronic copies of this document may be obtained from the EPA Technology Transfer Network (TTN). The TTN is an electronic bulletin board system which is free, except for the normal long distance charges. To access the HON BID:

- Set software to data bits: 8, N; stop bits: 1
- Use access number (919) 541-5742 for 1200, 2400, or 9600 bps modems [access problems should be directed to the system operator at (919) 541-5384].
- Specify TTN Bulletin Board: Clean Air Act Amendments
- Select menu item: Recently Signed Rules

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), which will affect the Synthetic Organic Chemical Manufacturing Industry (SOCMI). The BID comprises six volumes including:

- Volume 2A: Comments on Process Vents, Storage Vessels, Transfer Racks, 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 racks, 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 ABBREVIATION LIST

<u>ACRONYM</u>	<u>TERM</u>
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

ACRONYM AND ABBREVIATION LIST, CONTINUED

<u>ACRONYM</u>	<u>TERM</u>
HAP	hazardous air pollutant
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

ACRONYM AND ABBREVIATION LIST, CONTINUED

<u>ACRONYM</u>	<u>TERM</u>
PSD	prevention of significant deterioration
QIP	quality improvement program
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

ACRONYM AND ABBREVIATION LIST, CONTINUED

<u>ACRONYM</u>	<u>TERM</u>
VOHAP	volatile organic hazardous air pollutant
 <u>ABBREVIATION</u>	
<u>UNIT OF MEASURE</u>	
bb1	barrel
BOE	barrels of oil equivalent
Btu	British thermal unit
Btu/kW-hr	British thermal unit per kilowatt-hour
°C	degrees Celsius
°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
ℓ/hour•m ²	liters per hour per square meter
ℓpm	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

ACRONYM AND ABBREVIATION LIST, CONTINUED

ABBREVIATION
UNIT OF MEASURE

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).

LIST OF FREQUENTLY USED TERMS, CONTINUED

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(1) 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(1) 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).

LIST OF FREQUENTLY USED TERMS, CONTINUED

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

LIST OF FREQUENTLY USED TERMS, CONTINUED

establish compliance certification procedures. The part 64 enhanced monitoring rule implements section 702(b).

HAZARDOUS AIR POLLUTANT EMISSIONS
FROM PROCESS UNITS IN THE
SYNTHETIC ORGANIC CHEMICAL
MANUFACTURING INDUSTRY--
BACKGROUND INFORMATION FOR
PROMULGATED STANDARDS

Volume 2F: Commenter Identification List

Emission Standards Division

U.S. Environmental Protection Agency
Office of Air and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

January 1994

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Volume 2F: Commenter Identification List

Prepared by:

Bruce Jordan

(Date)

Director, Emission Standards Division
U.S. Environmental Protection Agency
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- Volume 2A: Comments on Process Vents, Storage Vessels, Transfer Racks, 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 racks, 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 ABBREVIATION LIST

<u>ACRONYM</u>	<u>TERM</u>
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

ACRONYM AND ABBREVIATION LIST, CONTINUED

<u>ACRONYM</u>	<u>TERM</u>
HAP	hazardous air pollutant
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

ACRONYM AND ABBREVIATION LIST, CONTINUED

<u>ACRONYM</u>	<u>TERM</u>
PSD	prevention of significant deterioration
QIP	quality improvement program
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

ACRONYM AND ABBREVIATION LIST, CONTINUED

<u>ACRONYM</u>	<u>TERM</u>
VOHAP	volatile organic hazardous air pollutant
 <u>ABBREVIATION</u>	
<u>UNIT OF MEASURE</u>	
bb1	barrel
BOE	barrels of oil equivalent
Btu	British thermal unit
Btu/kW-hr	British thermal unit per kilowatt-hour
°C	degrees Celsius
°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
ℓ/hour•m ²	liters per hour per square meter
ℓpm	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

ACRONYM AND ABBREVIATION LIST, CONTINUED

ABBREVIATION
UNIT OF MEASURE

scm/min	standard cubic meter per minute
TJ	terajoules
yr	year

LIST OF FREQUENTLY USED TERMS

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(1) of the Act,

LIST OF FREQUENTLY USED TERMS, CONTINUED

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(1) 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

LIST OF FREQUENTLY USED TERMS, CONTINUED

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).