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

Final EIS

Volume 2D: Comments on Applicability, National Impacts, and Overlap with Other Rules

NESHAP

EPA-453/R-94-003d

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

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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:

2/8/94

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(Date)

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

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

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OVERVIEW

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

This BID comprises six volumes as follows:

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

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

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

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

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

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

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

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

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ACRONYM AND ABBRIEVIATION LIST

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

ACRONYM AND ABBRIEVIATION LIST, CONTINUED

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

ACRONYM AND ABBRIEVIATION LIST, CONTINUED

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

ABBREVIATION	UNIT OF MEASURE
bbl	barrel
BOE	barrels of oil equivalent

ACRONYM AND ABBRIEVIATION LIST, CONTINUED

ABBREVIATION	UNIT OF MEASURE
Btu	British thermal unit
Btu/kW-hr	British thermal unit per kilowatt-hour
^{o}C	degrees Celsius
^{o}F	degrees Fahrenheit
gal	gallon
gpm	gallons per minute
hr	hour
kg/hr	kilograms per hour
kPa	kilopascals
kW-hr/yr	kilowatt-hour per year
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
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(l) of the Act, States and localities may develop and submit to the Administrator for approval a program for the implementation and enforcement of emission standards. A program submitted by

the State under section 112(l) of the Act may provide for partial or complete delegation of the Administrator's authorities and responsibilities to implement and enforce emission standards.

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

Permitting authority means: (1) the State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under part 70; or (2) the Administrator, in the case of EPA-implemented permit programs under part 71.

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

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

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

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

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

1.0 INTRODUCTION

On December 31, 1992, the U.S. Environmental Protection Agency (EPA) proposed the Hazardous Organic National Emission Standard for Hazardous Air Pollutants (NESHAP) for process units in the synthetic organic chemical manufacturing industry (SOCMI) under section 112(d) of the Clean Air Act (57 FR 62608). Public comments were requested on the proposed standard and comment letters were received from industry representatives, governmental entities, environmental groups, and private citizens. Two public 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 SOCMI 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 SOCMI as a single source category is consistent with the EPA's statutory intent and the agency's past treatment of the SOCMI. 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI processes under the HON. Two commenters (A-90-19: IV-D-32; IV-D-57) stated that even if the SOCMI remains a single source category for purposes of the HON, the EPA will retain the authority to subdivide the SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI processes. The applicability of the HON to the SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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, C_4 products, pyrolysis gasoline, and pyrolysis fuel oil from ethylene is part of the CMPU for producing ethylene. Further treatment of the C_4 fraction and pyrolysis gasoline yields butadiene and aromatics that are on the list of SOCMI 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 C_4 product, pyrolysis gasoline, and pyrolysis fuel oil. The ethylene process does not include the manufacture of SOCMI chemicals such as the production of butadiene from the C_4 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 SOCMI and non-SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI List

Comment: One commenter (A-90-19: IV-D-33) suggested deleting non-SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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, cyanoformamide was deleted from the proposed list. Although this chemical is listed on the Spaite trees as being part of the SOCMI, is 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. Cyanoformamide 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI does not show ethane as a primary product of any of the SOCMI 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 SOCMI chemicals in the final rule.

Comment: One commenter (A-90-19: IV-D-95) asserted that the list of SOCMI 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 SOCMI Chemicals," "List of Certain SOCMI Chemicals," or "List of Regulated SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI source category, and to distinguish between SOCMI 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 SOCMI 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 SOCMI 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 SOCMI source category. Including too many emissions points not related to SOCMI 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 SOCMI chemicals. One commenter (A-90-19: IV-D-58) concurred that refinery units manufacturing a single SOCMI 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 SOCMI 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 SOCMI 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 SOCMI, 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 CMPU's in the refinery that produce individual SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI chemical and the Aromex unit is a SOCMI unit covered by the HON. The purposes of the cumene unit and the phenol unit are to manufacture SOCMI chemicals, i.e., cumene and phenol, and are SOCMI 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 SOCMI 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 SOCMI chemicals since no chemical reaction is involved producing SOCMI 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 SOCMI facility.

Response: In the HON, the term "production" is not necessarily dependent upon chemical reaction. A SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI (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.

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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI "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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI, and the EPA was not aware of the existence of area sources in the SOCMI prior to proposal of the HON. The commenter (A-90-19: IV-D-26) added that the EPA has not determined if the SOCMI 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 SOCMI. 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 SOCMI 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 SOCMI

chemical intended for use solely to produce a non-SOCMI chemical is not a SOCMI unit. One commenter (A-90-19: IV-D-71) suggested modifying the definition of "chemical manufacturing process" to exclude unit operations that produce SOCMI 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 SOCMI 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 SOCMI is complicated because the industry is large and complex. In fact, few SOCMI plants are alike. For these reasons, the standards and guidelines developed for the SOCMI 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 SOCMI.

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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI chemical. In the event that more than one product produced equally on a mass basis are listed as SOCMI 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 SOCMI 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 SOCMI chemical as a by- or co-product generate the SOCMI chemical differently than those that are intended to produce the SOCMI chemical. The commenter (A-90-19: IV-D-33) also stated that the HON proposal analysis did not include processes that only made SOCMI 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 SOCMI 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 SOCMI, 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI and non-SOCMI sources.

Response: The HON applies to major sources, irrespective of the capacities of the specific CMPU'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 C_4 mixture from the catalytic cracking unit in a petroleum refinery, 1,3-butadiene is produced. The 1,3-butadiene is a SOCMI 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 SOCMI 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 SOCMI 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.

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 SOCMI 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 SOCMI chemicals and narrowed the list to those organic HAP's that would be emitted from SOCMI 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 ^{o}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.

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 SOCMI, 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 SOCMI. 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 SOCMI sources. Consequently, the EPA elected to use information readily available to it to determine the floor for the SOCMI standard under section 112(d) of the Act. In light of the EPA's prior experience with the regulation of the SOCMI, 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 SOCMI. 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI. 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI as 5 source categories rather than as one, although the EPA defines SOCMI 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 SOCMI 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 SOCMI 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 SOCMI facilities. The commenter (A-90-19: IV-D-92) concluded that the EPA should promulgate a MACT standard applicable to the SOCMI as a whole.

One commenter (A-90-19: IV-D-57) added that aggregating SOCMI 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 SOCMI 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 SOCMI. The suggestion made by the commenters to develop standards for every subcategory in the SOCMI is not

practical, because it would have been impossible to set individual MACT standards for each subcategory in the SOCMI 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 SOCMI. 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI would have been the optimal means of gathering data on nationwide sources. However, given the size of the SOCMI, 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 SOCMI. 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 SOCMI.

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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 it data base, and focus its efforts on the places with the highest concentration of SOCMI 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 SOCMI. A review of the BACT/LAER data base indicates that it does not include a comprehensive list of SOCMI sources, or a comprehensive list of sources in States with the highest concentration of SOCMI

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 SOCMI 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 lead 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 SOCMI 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 SOCMI facilities. However, the survey results also indicated that most SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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

SOCMI. 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 SOCMI 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 SOCMI 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 manifolding 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

SOCMI 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 SOCMI, 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 SOCMI. 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 SOCMI 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 SOCMI. 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 SOCMI processes, it would not be practical to specify such site-specific controls to all SOCMI 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 SOCMI 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 SOCMI, 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI. 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 SOCMI 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 SOCMI 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 SOCMI. 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI source category. The reader is referred to chapter 2 of this BID volume for further discussion of the SOCMI 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 SOCMI is to be regulated effectively.

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	
63.6(c)(1)	No	Subpart F specifies the compliance date

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)(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	
63.6(i)(3)	No	§63.151(a)(6) of subpart G specifies procedures
63.6(i)(4)(i)(A)	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)(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
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	

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(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	
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	

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)(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
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	

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(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	
63.10(f)	Yes	
63.11 - 63.15	Yes	

[a]Wherever 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.

[b]The 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 SOCMI 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 SOCMI processes, the SOCMI 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 SOCMI. 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 SOCMI. The EPA also considers that elimination of pollution through material substitution will not be possible in all cases because SOCMI 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 SOCMI are used in the production of polymers, resins, pesticides, pharmaceuticals, etc., elimination of a SOCMI product would

affect not only the SOCMI producer, but also the downstream user of that SOCMI 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 <u>at</u> 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 SOCMI 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 SOCMI 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 in 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 6-2 and 6-3 present the requirements that apply to Group 1 and Group 2 emission 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

TABLE 6-2. OVERLAP FOR HON GROUP 1 EMISSION POINTS[1]

Emission Point	Overlapping Regulation	Compliance Requirement
Storage Tanks	VOL Storage NSPS (40 CFR part 60 subpart Kb)	HON
	Benzene Storage NESHAP (40 CFR part 61 subpart Y)	HON
Transfer Operations	Benzene Transfer NESHAP (40 CFR part 61 subpart BB)	HON
Process Vents	Air oxidation NSPS (40 CFR part 60 subpart III)	HON[2]
	Distillation NSPS (40 CFR part 60 subpart NNN)	HON[2]
	Reactor NSPS (40 CFR part 60 subpart RRR)	HON[2]
	Vinyl Chloride NESHAP (40 CFR part 61 subpart F)	HON[2]
Wastewater Streams	Benzene Waste NESHAP (40 CFR part 61 subpart FF)	HON and Benzene Waste NESHAP
	Vinyl Chloride NESHAP (40 CFR part 61 subpart F)	see table 6-4
	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 POINTS[1]

Emission Point	Overlapping Regulation	Compliance Requirement
Storage Operations	VOL Storage NSPS (40 CFR part 60 subpart Kb)	HON
	Benzene Storage NESHAP (40 CFR part 61 subpart Y)	Benzene Storage NESHAP
Transfer Operations	Benzene Transfer NESHAP (40 CFR part 61 subpart BB)	(1) For racks subject to control requirements of §61.302 of Benzene Transfer NESHAP, comply with control requirements of Benzene Transfer. Comply with either the testing, monitoring, recordkeeping, and reporting of the Benzene Transfer NESHAP <u>or</u> those for HON Group 1 transfer racks. (2) For racks not subject to control requirements of §61.302 of the Benzene Transfer NESHAP, comply only with HON requirements for Group 2 transfer racks.
	Vinyl Chloride NESHAP (40 CFR part 61 subpart F)	see table 6-4
Process Vents	Air oxidation NSPS (40 CFR part 60 subpart III)	For TRE ≤ 1 as determined by the procedures in 40 CFR part 60 subpart III, 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 §60.612 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. For TRE > 1 as determined by the procedures in 40 CFR part 60 subpart III, 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.

TABLE 6-3. OVERLAP FOR HON GROUP 2 EMISSION POINTS[1] (CONTINUED)

Emission Point	Overlapping Regulation	Compliance Requirement
Process Vents (continued)	Distillation NSPS (40 CFR part 60 subpart NNN)	For TRE ≤ 1 as determined by the procedures in 40 CFR part 60 subpart NNN, 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 §60.662 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. For TRE > 1 as determined by the procedures in 40 CFR part 60 subpart NNN 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.

TABLE 6-3. OVERLAP FOR HON GROUP 2 EMISSION POINTS[1] (CONCLUDED)

Emission Point	Overlapping Regulation	Compliance Requirement
Process Vents (continued)	Reactor NSPS (40 CFR part 60 subpart RRR)	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.
	Vinyl Chloride NESHAP (40 CFR part 61 subpart F)	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)	Benzene Waste NESHAP and HON
	Vinyl Chloride NESHAP (40 CFR part 61 subpart F)	see table 6-4
	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 POINTS[1]

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, or (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, or (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.

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.

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 SOCMI 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 SOCMI. Gathering such data could not be accomplished if the promulgation date of the HON was to be met. The similarity in operations at SOCMI 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 SOCMI 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 SOCMI 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 SOCMI, 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 SOCMI. 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 SOCMI 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 SO_2. 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 SOCMI 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 SOCMI chemical prices on the consumer inflation rate, since SOCMI 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 SOCMI 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.

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 SOCMI 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 SOCMI 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 SOCMI 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 SOCMI 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.

TECHNICAL REPORT DATA
(Please read Instructions on the reverse before completing)

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16. ABSTRACT

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

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air pollution Pollution control SOCMI Hazardous air pollutant National impacts	Air pollution control	

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