AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

FEDERAL REGISTER

Vol. 76 Monday,
No. 224 November 21, 2011

Part II

Environmental Protection Agency

40 CFR Part 63
National Emission Standards for Hazardous Air Pollutant Emissions for Shipbuilding and Ship Repair (Surface Coating); National Emission Standards for Wood Furniture Manufacturing Operations; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2010–0786; FRL–9491–4]

RIN 2060–AQ42

National Emission Standards for Hazardous Air Pollutant Emissions for Shipbuilding and Ship Repair (Surface Coating); National Emission Standards for Wood Furniture Manufacturing Operations

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action finalizes the residual risk and technology review conducted for two industrial source categories regulated by separate national emission standards for hazardous air pollutants. The two national emission standards for hazardous air pollutants are: National Emissions Standards for Shipbuilding and Ship Repair (Surface Coating) and National Emissions Standards for Wood Furniture Manufacturing Operations. This action also finalizes revisions to the regulatory provisions related to emissions during periods of startup, shutdown and malfunction.

DATES: This final action is effective on November 21, 2011.

ADDRESSES: The EPA has established a docket for this action under Docket ID Number EPA–HQ–OAR–2010–0786. All documents in the docket are listed on the *http://www.regulations.gov* Web site. Although listed in the index, some information is not publicly available, *e.g.,* confidential business information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet, and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through *http://www.regulations.gov* or in hard copy at the EPA Docket Center, EPA West Building, Room Number 3334, 1301 Constitution Ave. NW., Washington, DC. The Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m. Eastern Standard Time, Monday through Friday. The telephone number for the Public Reading Room is (202) 566–1744 and the telephone number for the Air and Radiation Docket and Information Center is (202) 566–1742.

FOR FURTHER INFORMATION CONTACT: For questions about this final action regarding the Wood Furniture Manufacturing Operations National Emission Standards for Hazardous Air Pollutants (NESHAP), contact Mr. Nicholas Swanson, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, Natural Resources Group (E143–03), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541–4080; fax number: (919) 685–3219; and email address: *swanson.nicholas@epa.gov.* For questions about this final action regarding the Shipbuilding and Ship Repair (Surface Coating) NESHAP, contact Ms. Tina Ndoh, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, Minerals and Manufacturing Group (E243–04), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541–2750; fax number: (919) 685–5450; and email address: *ndoh.tina@epa.gov.*

SUPPLEMENTARY INFORMATION: For specific information regarding the modeling methodology, contact Mr. James Hirtz, Office of Air Quality Planning and Standards, Health and Environmental Impacts Division, Air Toxics Assessment Group (C539–02), U.S. Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541–0881; fax number: (919) 541–0840; and email address: *hirtz.james@epa.gov.* For information about the applicability of these two NESHAP to a particular entity, contact Dr. Rafael Sanchez, Office of Enforcement and Compliance Assurance, U.S. Environmental Protection Agency, Washington, DC 20460; telephone number: (202) 564–7028; fax number: (202) 564–0050; and email address: *sanchez.rafael@epa.gov.*

Background Information Document. On December 21, 2010 (75 FR 80220), the EPA proposed revisions to the Shipbuilding and Ship Repair (Surface Coating) NESHAP and the Wood Furniture Manufacturing Operations NESHAP, which were evaluated in our residual risk and technology review (RTR). A summary of the public comments on the proposal and the EPA's responses to the comments is available in Docket ID Number EPA–HQ–OAR–2010–0786.

Organization of this Document. The following outline is provided to aid in locating information in the preamble.

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I. General Information

A. Does this action apply to me?

Regulated Entities. Categories and entities potentially regulated by this action include:

NESHAP and source category	NAICS [1] Code
Shipbuilding and Ship Repair (Surface Coating)	336611.
Wood Furniture Manufacturing Operations	3371, 3372, 3379.

[1] North American Industry Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by the final action for the source categories listed. To determine whether your facility would be affected, you should examine the applicability criteria in the appropriate NESHAP. If you have any questions regarding the applicability of either of these NESHAP, please contact the appropriate person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

B. Where can I get a copy of this document?

In addition to being available in the docket, an electronic copy of this final action will also be available on the World Wide Web (WWW) through the Technology Transfer Network (TTN). Following signature, a copy of the final action will be posted on the TTN's policy and guidance page for newly proposed and promulgated rules at the following address: *http://www.epa.gov/ttn/atw/rrisk/rtrpg.html.* The TTN provides information and technology exchange in various areas of air pollution control.

Additionally, information on the source category descriptions, detailed emissions and other data that were used as inputs to the risk assessments can be found at this site.

C. Judicial Review

Under section 307(b)(1) of the Clean Air Act (CAA), judicial review of this final action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit (the Court) by January 20, 2012. Under section 307(b)(2) of the CAA, the requirements established by these final rules may not be challenged separately in any civil or criminal proceedings brought by the EPA to enforce the requirements.

Section 307(d)(7)(B) of the CAA further provides that ''[o]nly an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review.'' This section also provides a mechanism for us to convene a proceeding for reconsideration, ''[i]f the person raising an objection can demonstrate to EPA that it was impracticable to raise such objection within [the period for public comment] or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule.'' Any person seeking to make such a demonstration to us should submit a Petition for Reconsideration to the Office of the Administrator, U.S. EPA, Room 3000, Ariel Rios Building, 1200 Pennsylvania Ave. NW., Washington, DC 20460, with a copy to both the person(s) listed in the preceding **FOR FURTHER INFORMATION CONTACT** section and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), U.S. EPA, 1200 Pennsylvania Ave. NW., Washington, DC 20460.

II. Background

Section 112 of the CAA establishes a two-stage regulatory process to address emissions of hazardous air pollutants (HAP) from stationary sources. In the first stage, after the EPA has identified categories of sources emitting one or more of the HAP listed in section 112(b) of the CAA, section 112(d) calls for us to promulgate NESHAP for those sources. ''Major sources'' are those that emit, or have the potential to emit, any single HAP at a rate of 10 tons per year (tpy) or more, or 25 tpy or more of any combination of HAP. For major sources, these technology-based standards must reflect the maximum degree of emission reductions of HAP achievable (after considering cost, energy requirements and nonair quality health and environmental impacts) and are commonly referred to as maximum achievable control technology (MACT) standards.

For MACT standards, the statute specifies certain minimum stringency requirements, which are referred to as floor requirements, and may not be based on cost considerations. See CAA section 112(d)(3). For new sources, the MACT floor cannot be less stringent than the emission control that is achieved in practice by the best controlled similar source. The MACT standards for existing sources can be less stringent than floors for new sources, but they cannot be less stringent than the average emission limitation achieved by the best-performing 12 percent of existing sources in the category or subcategory (or the best-performing five sources for categories or subcategories with fewer than 30 sources). In developing MACT, we must also consider control options that are more stringent than the floor under CAA section 112(d)(2). We may establish standards more stringent than the floor, based on the consideration of the cost of achieving the emissions reductions, any nonair quality health and environmental impacts and energy requirements. In promulgating MACT standards, CAA section 112(d)(2) directs us to consider the application of measures, processes, methods, systems or techniques that reduce the volume of or eliminate HAP emissions through process changes, substitution of materials or other modifications; enclose systems or processes to eliminate emissions; collect, capture or treat HAP when released from a process, stack, storage or fugitive emissions point; and/or are design, equipment, work practice or operational standards.

In the second stage of the regulatory process, we undertake two different analyses, as required by the CAA. Section 112(d)(6) of the CAA calls for us to review the technology-based standards and to revise them ''as necessary (taking into account developments in practices, processes, and control technologies)'' no less frequently than every 8 years. Within 8 years after promulgation of the technology standards, CAA section 112(f) calls for us to evaluate the risk to public health remaining after application of the technology-based standards and to revise the standards, if necessary, to provide an ample margin of safety to protect public health or to prevent, taking into consideration costs, energy, safety and other relevant factors, an adverse environmental effect. In doing so, the EPA may adopt standards equal to existing MACT standards if the EPA determines that the existing standards are sufficiently protective. National Resources Defense Council (*NRDC*) v. *EPA,* 529 F.3d 1077, 1083 (DC Cir. 2008).

On December 21, 2010, the EPA published a proposed rule in the **Federal Register** for these two NESHAP that took into consideration the residual risk and technology review (RTR) analyses. For these NESHAP—Shipbuilding and Ship Repair (Surface Coating) and Wood Furniture

Manufacturing Operations—this action provides the EPA's final determinations and regulatory amendments pursuant to the RTR provisions of CAA section 112. For both NESHAP, we also are finalizing revisions to requirements in each NESHAP related to emissions during periods of startup, shutdown and malfunction (SSM). This action also addresses formaldehyde limits and the use of conventional spray technology for the Wood Furniture Manufacturing Operations NESHAP.

III. Summary of the Final Rules

A. What are the final rule amendments for the Shipbuilding and Ship Repair (Surface Coating) source category?

The NESHAP for Shipbuilding and Ship Repair (Surface Coating) were promulgated on December 15, 1995 (60 FR 64330), and codified at 40 CFR part 63, subpart II. The shipbuilding and ship repair industry consists of establishments that build, repair, repaint, convert and alter ships which are marine or fresh-water vessels used for military or commercial operations. The source category covered by this MACT standard includes only the shipbuilding and ship repair surface coating operations that occur at facilities that are major sources of HAP.

We are finalizing the Shipbuilding and Ship Repair (Surface Coating) rule as it was proposed, with no changes. For the reasons provided in the proposed rule and in the support documents in the docket, we have determined that the current MACT standards for shipbuilding and ship repair (surface coating) facilities reduce risk to an acceptable level, provide an ample margin of safety to protect public health and prevent an adverse environmental effect. We are, therefore, re-adopting the existing MACT standards to satisfy section 112(f) of the CAA. We have determined that the developments in technology would give minimal health benefits and are not cost effective. The costs of implementing developments in practices, processes or control technologies since promulgation of the MACT standards are disproportionate to the emission reduction that would be achieved and, therefore, we are not adopting additional technology standards pursuant to CAA section 112(d)(6).

We are finalizing changes to the Shipbuilding and Ship Repair (Surface Coating) MACT standards to eliminate the SSM malfunction exemption. These changes revise Table 1 in 40 CFR part 63, subpart II, to indicate that several requirements of the 40 CFR part 63 General Provisions related to periods of SSM do not apply. We are adding provisions to the Shipbuilding and Ship Repair (Surface Coating) MACT standards requiring sources to operate in a manner that minimizes emissions, removing the SSM plan requirement, clarifying the required conditions for performance tests and revising the SSM-associated recordkeeping and reporting requirements to require reporting and recordkeeping for periods of malfunction. It is required that all facilities comply with the NESHAP during startup and shutdown. We are also finalizing provisions, generally as proposed, to provide an affirmative defense against civil penalties for potential violations of emission standards caused by malfunctions, as well as criteria for establishing the affirmative defense.

These revisions to the Shipbuilding and Ship Repair (Surface Coating) MACT standards are not expected to result in any emissions reduction or economic impacts. We have determined that facilities in this source category can meet the applicable emissions standards at all times. No changes in costs to industry are predicted.

B. What are the final rule amendments for the Wood Furniture Manufacturing Operations source category?

The NESHAP for Wood Furniture Manufacturing Operations were promulgated on December 7, 1995 (60 FR 62930), and codified at 40 CFR part 63, subpart JJ. The Wood Furniture Manufacturing Operations source category consists of establishments that produce a range of wood products, including wood kitchen cabinets, wood residential furniture, upholstered residential and office furniture, wood office furniture and fixtures, partitions, shelving, lockers and other wood furniture not included in one of the categories listed above. The source category covered by this MACT standard includes only the wood furniture manufacturing operations that occur at facilities that are major sources of HAP.

In the proposal for this rule making, the EPA proposed a formaldehyde emissions limit of 400 pounds per 12-month period. As discussed in section IV.B.1 below, the EPA received comments concerning potential impacts on facilities with high production volume and determined that the proposed limit would not be cost effective for all facilities in the source category. For this reason, the EPA is finalizing two alternative compliance options. Under the authority of section 112(d)(6) of the CAA, we are finalizing a limit on formaldehyde emissions by limiting formaldehyde content in coatings and contact coatings and contact adhesives to 1 percent by weight. As an alternative compliance option, we are allowing facilities to comply with a formaldehyde usage limit of 400 pounds per rolling 12-month period, as we originally proposed. Less than 20 facilities are known to exceed 400 pounds per 12-month period based on 2005 National Emissions Inventory (NEI) data and communications with wood furniture manufacturing facilities.[1] The phone calls indicated that there were reductions in emissions since the 2005 NEI and all but one of the facilities contacted were below 400 pounds per 12-month period. This leads us to conclude that most of the facilities that exceeded 400 pounds of formaldehyde per 12 month period according to the 2005 NEI are now below that level. We are aware of at least one facility that has facilities with high production volume that still exceeds the 400 pound level. After receiving updated information, we concluded that the proposed 400 pounds formaldehyde per rolling 12-month period usage limit was not cost effective as a mandatory formaldehyde limit for all facilities within the source category. For this reason, the EPA is adopting the 400 pound formaldehyde limit as an alternative requirement to the requirement to limit formaldehyde content to 1 percent in coatings and contact adhesives. The 400 pound limit would not be cost effective for facilities with high production volume because, while they use low-formaldehyde coatings, these facilities would still exceed the 400 pounds per 12-month period because of the quantity of coatings and contact adhesives applied. To further reduce formaldehyde emissions, these facilities would require the addition of costly control devices and/or reconstruction of their spray line system. For more information, see *Estimated Cost Impact for Wood Furniture Manufacturing Industry To Comply With Proposed Formaldehyde Limit on Coating Operations Wood Furniture Manufacturing RTR,* dated August 4, 2011, in the docket for this action. Such facilities can, however, cost-effectively comply with a standard

[1] The memo to the docket, *Impacts of Implementing a Limit on Formaldehyde Usage in the Wood Furniture Manufacturing Operations Source Category,* dated October 19, 2010, shows that there are 27 facilities that exceed 400 pounds per year of formaldehyde emissions according to 2005 NEI data. Calls to industry showed that many of these facilities have lowered their emissions of formaldehyde significantly since 2005 as shown in the memo *Updated Formaldehyde Emissions from Select Wood Furniture Manufacturers,* dated August 3, 2011, in the docket for this action.

that limits the formaldehyde content of coatings and contact adhesives to 1 percent.[2] While the formaldehyde content of coating and contact adhesive formulations have been reduced since promulgation of the 1995 NESHAP, the EPA has received information that some facilities may still rely on formulations that contain greater than 1 percent formaldehyde.[3] The EPA has determined that some of these facilities could not readily meet the 1 percent formaldehyde limit and so is allowing, as an alternative compliance option, the originally proposed 400 pound formaldehyde limit.

We are also finalizing, with one modification, the proposed prohibition on the use of conventional spray[4] guns pursuant to CAA section 112(d)(6). As explained in the proposed rule and supporting documents in the docket, we have determined that use of non-conventional spray guns results in lower HAP emissions than use of conventional spray guns. When spraying a piece of wood furniture with a coating, there is a prescribed amount of coating to be applied to the wood surface. With the higher spray efficiency associated with non-conventional spray guns, less spray is generally required to apply the desired amount of coating so less coating is used. This means that less overspray will occur, creating fewer emissions. Conventional spray guns are now used infrequently in the wood furniture manufacturing industry, and the costs to use non-conventional spray guns are approximately equal to conventional spray guns. The EPA estimates that the switch to non-conventional spray guns does not incur a cost burden associated with decreased product consumption and cost.[5]

Considering information received during the comment period that some facilities route conventional spray gun overspray to control devices, we are modifying the proposed prohibition on the use of conventional spray guns to retain an exception in the NESHAP to allow the use of conventional spray guns if emissions from the finishing station are routed to a control device. See 40 CFR 63.803(h)(4). The efficiency of the control device, even when coupled with the conventional spray gun, reduces excess emissions better than a change to high efficiency spray technology. The EPA does not expect facilities will incur the significant cost of installing a control device for the sole purpose of using conventional spray guns. We expect the vast majority of facilities to use non-conventional applicators of wood furniture finishes, with only a small number of facilities choosing to use conventional spray guns with a control device.

We are also finalizing changes to the Wood Furniture Manufacturing Operations NESHAP to eliminate the SSM exemption. These changes revise Table 1 in 40 CFR part 63, subpart JJ, to indicate that several requirements of the 40 CFR part 63 General Provisions related to periods of SSM do not apply. We are adding provisions to the Wood Furniture Manufacturing Operations MACT standards requiring sources to operate in a manner that minimizes emissions, removing the SSM plan requirement, clarifying the required conditions for performance tests and revising the SSM-associated recordkeeping and reporting requirements to require reporting and recordkeeping for periods of malfunction. We are also adding provisions to provide an affirmative defense against civil penalties for exceedances of emission standards caused by malfunctions, as well as criteria for establishing the affirmative defense.

We are finalizing language to clarify the applicability for Wood Furniture Manufacturing Operations to be consistent with surface coating rules issued after the promulgation of the Wood Furniture MACT standards in 1995. These include the subparts for Surface of Miscellaneous Metal Parts and Products (MMMM), Surface Coating of Plastic Parts and Products (PPPP), Surface Coating of Wood Building Products (QQQQ), and Surface Coating of Metal Furniture (RRRR) of 40 CFR part 63. Subparts MMMM, PPPP, QQQQ and RRRR exempt surface coating operations that are subject to other subparts of 40 CFR part 63, such as the Wood Furniture Operations MACT standards. (See 40 CFR 63.3881(c)(6), 63.4481(c)(7), 63.4681(c)(2), 63.4881(c)(2)). Therefore, we are finalizing amendments to the Wood Furniture Operations MACT standards to acknowledge that surface coating operations that are subject to subparts MMMM, PPPP, QQQQ or RRRR of 40 CFR part 63 are not subject to the Wood Furniture Manufacturing Operations standards.

In this action, we are taking a step to improve data accessibility. Owners and operators demonstrating compliance using the test methods cited in § 63.805(c), as an alternative to § 63.9(h), are not required but may submit electronic copies of required performance test reports through the Electronic Reporting Tool (ERT). The ERT transmits the electronic report through EPA's Central Data Exchange network for storage in the WebFIRE database making submittal of data very straightforward and easy. The WebFIRE database was constructed to store performance test data for use in developing emission factors. A description of the ERT can be found at *http://www.epa.gov/ttn/chief/ert/ert_tool.html.* A description of the WebFIRE database is available at *http://cfpub.epa.gov/oarweb/index.cfm?action=fire.main.*

The ERT would allow for an electronic review process rather than a manual data assessment, making review and evaluation of the source-provided data and calculations easier and more efficient. Finally, having data submitted electronically, the EPA would be able to develop improved emission factors, make fewer information requests and promulgate better regulations. These revisions to the Wood Furniture Manufacturing Operations MACT standards are not expected to result in economic or quantifiable environmental impacts. We have determined that facilities in this source category can meet the applicable emissions standards at all times.

C. What are the requirements during periods of startup, shutdown and malfunction?

The Court vacated portions of two provisions in the EPA's CAA section 112 regulations governing the emissions of HAP during periods of SSM. *Sierra Club* v. *EPA,* 551 F.3d 1019 (D.C. Cir. 2008). Specifically, the Court vacated the SSM exemption contained in 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1), that is part of a regulation, commonly referred to as the ''General Provisions Rule,'' that the EPA promulgated under section 112 of the CAA. When incorporated into CAA section 112(d) regulations for specific source categories, these two provisions exempt sources from the requirement to comply with the otherwise applicable CAA section 112 emission standards during periods of SSM.

[2] The concentrations of formaldehyde received from the known facility with high production volume exceeds 400 pounds per 12-month period is in the *Estimated Cost Impact for Wood Furniture Manufacturing Industry To Comply With Proposed Formaldehyde Limit on Coating Operations Wood Furniture Manufacturing RTR,* dated August 4, 2011, in the docket for this action.

[3] For more details, see *Conversation with a Representative of Kitchen Cabinet Manufacturers Association (KCMA) Regarding Add-On Control Devices and High Formaldehyde Concentration in Coatings,* dated June 23, 2011, in the docket for this action.

[4] The definition of ''conventional spray'' can be found in the 1995 Wood Furniture Manufacturing Operations NESHAP.

[5] See *Developments in Practices, Processes, and Control Technologies,* dated August 24, 2010 in the docket for this action.

While the Court's ruling in *Sierra Club* v. *EPA,* 551 F.3d 1019 (DC Cir. 2008), did not directly affect the two NESHAP addressed here, the legality of source category-specific SSM provisions, such as those in both NESHAP, are called into question based on the reasoning in that decision.

Consistent with *Sierra Club* v. *EPA,* we have eliminated the SSM exemptions in these two NESHAP. We have also revised Table 1 (the General Provisions table) for subparts II and JJ in several respects. For example, we have eliminated the incorporation of the General Provisions' requirement that the source develop an SSM plan. We have also eliminated or revised certain recordkeeping and reporting requirements that related to the SSM exemption. The EPA has attempted to ensure that we have removed any provisions that are inappropriate, unnecessary or redundant in the absence of the SSM exemption in the regulatory language.

The EPA has not established different standards for periods of startup and shutdown for these NESHAP because we believe compliance with the standards is achievable during these periods. For facilities that comply with the NESHAP by using compliant coatings and contact adhesives, there are no startup or shutdown events that would cause emissions that are different than those that occur during normal operations. For facilities that use control devices, there is sufficient ability for the control device to be started prior to the spray lines being started and conversely shutdown after the spray lines have shutdown. In the example of a regenerative thermal oxidizer (RTO), supplemental fuel can be provided during startup and shutdown of the spray lines to prevent noncompliance. Thus, we are not aware of any technical limitations such that emissions from startup or shutdown cannot be controlled by control devices to the level achieved during normal operations.

Periods of startup, normal operations and shutdown are all predictable and routine aspects of a source's operations. However, by contrast, malfunction is defined as a ''sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. * * *'' (40 CFR 63.2). The EPA has determined that CAA section 112 does not require emissions that occur during periods of malfunction to be factored into development of CAA section 112 standards. Under section 112, emissions standards for new sources must be no less stringent than the level ''achieved'' by the best controlled similar source, and for existing sources, generally must be no less stringent than the average emission limitation ''achieved'' by the best performing 12 percent of sources in the category. There is nothing in section 112 that directs the agency to consider malfunctions in determining the level ''achieved'' by the best performing or best controlled sources when setting emission standards. Moreover, while the EPA accounts for variability in setting emissions standards consistent with section 112 case law, nothing in that case law requires the agency to consider malfunctions as part of that analysis. Section 112 uses the concept of ''best controlled'' and ''best performing'' unit in defining the level of stringency that section 112 performance standards must meet. Applying the concept of ''best controlled'' or ''best performing'' to a unit that is malfunctioning presents significant difficulties, as malfunctions are sudden and unexpected events.

Further, accounting for malfunctions would be difficult, if not impossible, given the myriad different types of malfunctions that can occur across all sources in the category, and given the difficulties associated with predicting or accounting for the frequency, degree and duration of various malfunctions that might occur. As such, the performance of units that are malfunctioning is not ''reasonably'' foreseeable. See, *e.g., Sierra Club* v. *EPA,* 167 F. 3d 658, 662 (D.C. Cir. 1999) (The EPA typically has wide latitude in determining the extent of data-gathering necessary to solve a problem. We generally defer to an agency's decision to proceed on the basis of imperfect scientific information, rather than to ''invest the resources to conduct the perfect study''). See also, *Weyerhaeuser* v. *Costle,* 590 F.2d 1011, 1058 (D.C. Cir. 1978) (''In the nature of things, no general limit, individual permit, or even any upset provision can anticipate all upset situations. After a certain point, the transgression of regulatory limits caused by 'uncontrollable acts of third parties,' such as strikes, sabotage, operator intoxication or insanity, and a variety of other eventualities, must be a matter for the administrative exercise of case-by-case enforcement discretion, not for specification in advance by regulation.''). In addition, the goal of a best controlled or best performing source is to operate in such a way as to avoid malfunctions of the source, and accounting for malfunctions could lead to standards that are significantly less stringent than levels that are achieved by a well-performing non-malfunctioning source. The EPA's approach to malfunctions is consistent with section 112 and is a reasonable interpretation of the statute.

In the event that a source fails to comply with the applicable CAA section 112 standards as a result of a malfunction event, the EPA would determine an appropriate response based on, among other things, the good faith efforts of the source to minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to ascertain and rectify excess emissions. The EPA would also consider whether the source's failure to comply with the CAA section 112 standard was, in fact, ''sudden, infrequent, not reasonably preventable'' and was not instead ''caused in part by poor maintenance or careless operation.'' 40 CFR 63.2 (definition of malfunction).

Finally, the EPA recognizes that even equipment that is properly designed and maintained can sometimes fail, and that such failure can sometimes cause an exceedance of the relevant emission standard. (See, *e.g., State Implementation Plans: Policy Regarding Excessive Emissions During Malfunctions, Startup, and Shutdown* (Sept. 20, 1999); *Policy on Excess Emissions During Startup, Shutdown, Maintenance, and Malfunctions* (Feb. 15, 1983)). The EPA is, therefore, adding to the final rule an affirmative defense to civil penalties for exceedances of emission limits that are caused by malfunctions. See 40 CFR 63.782 (Shipbuilding and Ship Repair (Surface Coating)) and 63.801 (Wood Furniture Manufacturing Operations) (defining ''affirmative defense'' to mean, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding). We also have added other regulatory provisions to specify the elements that are necessary to establish this affirmative defense. See 40 CFR 63.781 (Shipbuilding and Ship Repair (Surface Coating)) and 63.800 (Wood Furniture Manufacturing Operations). The source must prove by a preponderance of the evidence that it has met all of the elements set forth in the affirmative defense. See also 40 CFR 22.24. The criteria ensure that the affirmative defense is available only where the event that causes an exceedance of the emission limit meets the narrow definition of malfunction in 40 CFR 63.2 (sudden, infrequent, not reasonably

preventable and not caused by poor maintenance and/or careless operation). For example, to successfully assert the affirmative defense, the source must prove by a preponderance of the evidence that excess emissions ''[w]ere caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner. * * *'' The criteria also are designed to ensure that steps are taken to correct the malfunction, to minimize emissions in accordance with 40 CFR 63.783(b)(1) and 63.802(c) and to prevent future malfunctions. For example, the source must prove by a preponderance of the evidence that ''[r]epairs were made as expeditiously as possible when the applicable emission limitations were being exceeded * * *'' and that ''[a]ll possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health * * *'' In any judicial or administrative proceeding, the Administrator may challenge the assertion of the affirmative defense, and, if the respondent has not met its burden of proving compliance with all of the requirements in the affirmative defense, appropriate penalties may be assessed in accordance with section 113 of the CAA (see also 40 CFR 22.27).

The EPA included an affirmative defense in the final rule in an attempt to balance a tension, inherent in many types of air regulation, to ensure adequate compliance while simultaneously recognizing that despite the most diligent of efforts, emission limits may be exceeded under circumstances beyond the control of the source. The EPA must establish emission standards that ''limit the quantity, rate, or concentration of emissions of air pollutants on a continuous basis.'' 42 U.S.C. 7602(k)(defining ''emission limitation and emission standard''). *See generally Sierra Club* v. *EPA,* 551 F.3d 1019, 1021 (D.C. Cir. 2008). Thus, the EPA is required to ensure that section 112 emissions limitations are continuous. The affirmative defense for malfunction events meets this requirement by ensuring that even where there is a malfunction, the emission limitation is still enforceable through injunctive relief. While ''continuous'' limitations, on the one hand, are required, there is also case law indicating that in many situations, it is appropriate for the EPA to account for the practical realities of technology. For example, in *Essex Chemical* v. *Ruckelshaus,* 486 F.2d 427, 433 (D.C. Cir. 1973), the DC Circuit acknowledged that in setting standards under CAA section 111 ''variant provisions'' such as provisions allowing for upsets during startup, shutdown and equipment malfunction ''appear necessary to preserve the reasonableness of the standards as a whole and that the record does not support the 'never to be exceeded' standard currently in force.'' See also, *Portland Cement Association* v. *Ruckelshaus,* 486 F.2d 375 (D.C. Cir. 1973). Though intervening case law such as *Sierra Club* v. *EPA* and the CAA 1977 amendments undermine the relevance of these cases today, they support the EPA's view that a system that incorporates some level of flexibility is reasonable. The affirmative defense simply provides for a defense to civil penalties for excess emissions that are proven to be beyond the control of the source. By incorporating an affirmative defense, the EPA has formalized its approach to upset events. In a Clean Water Act setting, the Ninth Circuit required this type of formalized approach when regulating ''upsets beyond the control of the permit holder.'' *Marathon Oil Co.* v. *EPA,* 564 F.2d 1253, 1272–73 (9th Cir. 1977). *But see, Weyerhaeuser Co.* v. *Costle,* 590 F.2d 1011, 1057–58 (D.C. Cir. 1978) (holding that an informal approach is adequate). The affirmative defense provisions give the EPA the flexibility to both ensure that its emission limitations are ''continuous'' as required by 42 U.S.C. 7602(k), and account for unplanned upsets and thus support the reasonableness of the standard as a whole.

D. What are the effective and compliance dates of the standards?

The revisions to the MACT standards being promulgated in this action are effective on November 21, 2011. For the two MACT standards addressed in this action, the compliance date for the revised SSM-related requirements is November 21, 2011. For the Wood Furniture Manufacturing Operations NESHAP, the compliance date for the 1 percent formaldehyde coating and contact adhesive limit and the alternative 400 pound per 12-month formaldehyde use limit as well as the prohibition on the use of conventional spray guns is 3 years from the effective date of the standards, November 21, 2014. Beyond the revised SSM provisions, there are no changes to the Shipbuilding and Ship Repair (Surface Coating) NESHAP.

IV. Summary of Significant Changes Since Proposal

A. What changes did we make to the Shipbuilding and Ship Repair (Surface Coating) NESHAP since proposal?

Following the proposed notice of the RTR for Shipbuilding and Ship Repair (Surface Coating), the EPA did not receive any new data demonstrating any cost effective technology updates or data that would affect our analyses of risks. Accordingly, we have made no changes to the proposed rule language for the Shipbuilding and Ship Repair (Surface Coating) NESHAP. However, we corrected an inadvertent error made in the preamble to the proposed rule. In describing the Shipbuilding and Ship Repair (Surface Coating) source category, we incorrectly stated that there were approximately 85 facilities subject to the Shipbuilding and Ship Repair (Surface Coating) MACT, and that 71 of these 85 facilities, or approximately 84 percent of the source category, were modeled for the risk analysis. At proposal, we actually estimated that there were 90 facilities subject to the MACT, and of those 90 facilities, we modeled approximately 94 percent, or 85 facilities, in the risk analysis. This correction to the preamble text does not affect the estimated risks or any conclusions of the risk review. This correction only affects the inadvertent error made in the preamble text for the proposed rule.

B. What changes did we make to the Wood Furniture Manufacturing Operations NESHAP since proposal?

1. Formaldehyde Limit

The potential risk reductions associated with advancement in coating and adhesive formulations, described below, led us to propose a formaldehyde limit of 400 pounds per rolling 12-month period, in part because we believed that this limit could be achieved cost-effectively. We stated in the proposal that there are many coatings and adhesives available that contain no or low quantities of formaldehyde, and we expected any facilities above the 400 pounds per 12 month limit to be able to reduce their emissions below the 400 pound level by using coatings and adhesives with no or low formaldehyde. We proposed the formaldehyde usage limit under the authority of CAA section 112(f) and solicited comment on whether the proposed limit on formaldehyde use should be issued under CAA section 112(d)(6).

Comments received after proposal led the EPA to conduct further analyses of

the compliance costs associated with the proposed 400 pound usage limit. Data received from one facility, which already uses no- and low-formaldehyde content coatings and contact adhesives, indicated that reduction in formaldehyde use to 400 pounds per 12-month period would not be possible by simply using no- and low-formaldehyde content coatings and contact adhesives due to the size of its operations and the amount of coatings and contact adhesives used. To comply with the proposed 400 pound limit, a spray line reconfiguration (adding five drying/curing ovens) would be needed. The cost-effectiveness of formaldehyde reduction for the spray line reconfiguration was estimated to be $658,000/ton of formaldehyde reduced annually. We believe other large operation facilities would face similar circumstances. The EPA does not have specific information on compliance costs for facilities other than Kitchen Kompact, but even if we assume all other wood furniture facilities with formaldehyde emissions above 400 pounds per 12-month period in the 2005 NEI database would reduce their formaldehyde emissions to 400 pound per 12-month period and would incur zero costs in doing so, the cost-effectiveness would be $43,000/ton of formaldehyde reduced. We conclude this is not cost effective.[6]

Since the MACT was promulgated, manufacturers of coatings and contact adhesives have been able to replace formaldehyde with less toxic chemicals, resulting in products that are known in the industry as ''low-formaldehyde'' or ''no-formaldehyde.'' This development is particularly evident in the reformulation of conversion varnishes used in kitchen cabinet manufacturing (see *Conversation with Valspar Regarding Formaldehyde Replacement Chemicals in Coatings,* dated August 4, 2011, in the docket for this action).The EPA's proposed 400 pound limit was based on the availability of low-formaldehyde coatings and contact adhesives and their use as the current state of technology. Although there is no formal industry definition of the term ''low-formaldehyde,'' the EPA found that a formaldehyde content equal to or less than 1 percent by weight currently is consistent with the industry trend of continually reducing low formaldehyde formulations. We are aware of a range of values used in the industry to indicate ''low-formaldehyde'' (from 0.1 percent to 1.0 percent). Based on information available to the EPA, we determined that a formaldehyde content level of 1 percent is the lowest concentration that is clearly cost effective for the entire source category. We are, therefore, finalizing a limit of 1 percent formaldehyde by weight based on the availability of coatings and technical specifications necessary to maintain product quality and cost-effectiveness.[7] A content less than 1 percent would not allow facilities the flexibility to use coatings and adhesives that are suitable for a range of different products, from cabinets to home furnishings, without compromising their quality, cost or production.[8] Also, in many cases, the 1 percent formaldehyde content limit will allow flexibility in different types of line configurations.[9]

The proposed formaldehyde limit (400 pounds per rolling 12-month period) under CAA section 112(f) was based on these grounds—that wood furniture manufacturers can and are reducing their formaldehyde emissions through the use of newer low-formaldehyde coating and contact adhesive formulations (see 75 FR 80246). The limit of 1 percent formaldehyde in coatings and contact adhesives in this final rulemaking is an outgrowth of what the expected means of compliance was during the proposal for the proposed 400 pound limit. The EPA has confirmed that most facilities are using low- and no-formaldehyde coatings and contact adhesives (i.e., coatings and adhesives that have a formaldehyde concentration not exceeding 1 percent by weight).[10] Facilities can thus achieve formaldehyde emissions reductions that are greater than those required under the existing MACT standard. The original Wood Furniture Manufacturing Operations NESHAP achieved an 89 percent reduction in HAP. The industry, for the most part, has gone beyond the original NESHAP for formaldehyde emissions by continuing to use lower concentrations of formaldehyde in the coatings and contact adhesives. By codifying these practices, the EPA is setting a more stringent standard than was adopted in 1995 and will prevent backsliding into techniques and formulations used in the past.

CAA section 112(d)(6) requires us to revise emissions standards taking into account developments in practices, processes and control technologies. Thus, to codify current industry practice since the MACT was promulgated and to prevent potential increases in formaldehyde emissions in the future from coating and contact adhesive use in the wood furniture manufacturing industry, we are finalizing, under section 112(d)(6) of the CAA, formaldehyde emissions limits through two compliance options. One option is for new and existing sources to use only those coatings and contact adhesives with a formaldehyde content of 1 percent by weight or less. As these low-formaldehyde coatings are readily available in the marketplace and are comparable in cost to other coating and contact adhesive formulations, we expect no additional costs associated with the use of low-formaldehyde coatings and contact adhesives.

Moreover, we are retaining the proposed standard—a limit on the use of formaldehyde of 400 pounds per rolling 12-month period—as an alternative emission limit to the 1 percent formaldehyde formulation limit. While the EPA recognizes it is not cost effective for at least one facility to achieve a limit on the use of formaldehyde of 400 pounds per 12 month period, we acknowledge that most wood furniture manufacturing facilities' formaldehyde use is already below this limit.[11] It is likely that a small subset of low-emitting niche facilities use higher concentration formaldehyde coatings that may prefer

[6] For more information regarding cost estimates for compliance with the proposed 400 pound per year formaldehyde limit, refer to *Estimated Cost Impact for Wood Furniture Manufacturing Industry to Comply with Proposed Formaldehyde Limit on Coating Operations Wood Furniture Manufacturing RTR,* dated August 4, 2011.

[7] Discussion with a coatings manufacturer revealed that the label of ''Low-Formaldehyde'' is subjective and it trends towards lower and lower concentrations of formaldehyde. For more details, see *Telephone Call with Valspar Regulatory Affairs Manager—Wood Coatings Wood Furniture Manufacturing RTR* dated June 29, 2011 in the docket for this action. Also as noted previously, Valspar does not carry any products that exceed 1 percent in formaldehyde concentration.

[8] It is necessary for some facilities to minimize levels of formaldehyde in the coating formulation to promote cross-linking nucleation. This process directly affects the quality and durability of the wood furniture. See notes from the *Marsh Furniture Site Visit* in the docket for this action for reference.

[9] For additional information, please see memo to the docket, *EPA Meeting with Kitchen Cabinet Manufacturers Association (KCMA) and Select Representatives,* dated August 17, 2011.

[10] The confirmation of most facilities was obtained in the following memos in the docket for this action: *Telephone Call with Valspar Regulatory Affairs Manager—Wood Coatings on the Availability and Use of Low- and No-Formaldehyde Coatings,* dated June 24, 2011. Also, one of the major manufacturers of wood furniture coatings, Valspar, does not carry any products that have greater than 1 percent formaldehyde leading to the conclusion that coatings greater than 1 percent formaldehyde are mostly unnecessary in the industry. *http://www.valsparwood.com/valsparwood/msds/msds.jsp.*

[11] For more information, see *Updated Formaldehyde Emissions from Select Wood Furniture Manufacturers,* dated August 3, 2011 and *Impacts of Implementing a Limit on Formaldehyde Usage in the Wood Furniture Manufacturing Operations Source Category,* dated October 19, 2011 in the docket for this rule.

to comply with the alternate formaldehyde use limit.[12] These niche facilities use greater concentrations of formaldehyde to provide products to small specialized markets. The EPA is promulgating this 1 percent formulation formaldehyde limit to ensure that we are not limiting the production of facilities while still encouraging facilities to limit formaldehyde in their coatings and contact adhesives. In support of our proposed CAA section 112(f)(2) residual risk determination, we conducted a risk assessment for the Wood Furniture Manufacturing Operations source category that provided estimates of the Maximum Individual Risk (MIR) posed by the allowable and actual HAP emissions from each source in the category, the distribution of cancer risks within the exposed populations, cancer incidence, hazard index for chronic exposures to HAP with noncancer health effects, and hazard quotients (HQ) for acute exposures to HAP with noncancer health effects. We found that risks remaining after compliance with the MACT standard are acceptable.

In making our proposed ample margin of safety determination under CAA section 112(f)(2), we subsequently evaluated the risk reductions and costs associated with various emissions control options to determine whether we should impose additional standards to reduce risks further. We proposed a standard that would limit the use of formaldehyde to 400 pounds per rolling 12 month period because we projected that such a limit would lead to reductions in cancer risks and the potential for acute noncancer health effects. Specifically, we estimated that the limit would reduce formaldehyde emissions by an estimated 9.46 tpy from the baseline level of 20.125 tpy. We also estimated the maximum individual incremental lifetime cancer risk would be reduced to approximately 10-in-1 million from a baseline of 20-in-1 million, the estimated cancer incidence due to emissions from the source category would be reduced by about 15 percent nationwide, and the estimated maximum acute HQ would be reduced from 7 to 3, based on the Reference Exposure Levels (REL) for formaldehyde, and from 0.35 to 0.15, based on the acute exposure guideline level (AEGL–1) for formaldehyde. We believed that there would be either no or minimal additional costs associated with this option, as the cost of low-formaldehyde coatings and adhesives are approximately equal to other coating and adhesive products containing larger quantities of formaldehyde. Also, we believed there were minimal costs associated with the recordkeeping and reporting requirements for compliance with the rule.

Our estimates of the source category maximum cancer risks have changed since proposal due to information received during the comment period. One facility that was included in the risk analysis at proposal has been determined to not be part of the Wood Furniture Manufacturing source category. The facility is a manufacturer of wood and melamine bowls and food service supplies and is not a wood furniture manufacturer. At proposal, the MIR estimated for the bowl manufacturing facility was 20 in-1-million due to formaldehyde emissions, based on actual emissions. This facility MIR was the highest in the source category. With the elimination of the bowl manufacturing facility from the category, the source category MIR is 10 in-1-million due to emissions of ethylbenzene and formaldehyde, based on actual emissions. The bowl manufacturing facility also was one of two facilities for which we estimated an acute HQ of 7 for formaldehyde. The maximum acute formaldehyde HQ of 7 for the other facility in the source category is unchanged.

Since proposal we also have further evaluated acute exposures resulting from emissions from facilities in the source category. To better characterize the potential health risks associated with estimated worst-case acute exposures to HAP, and in response to a key recommendation from the Science Advisory Board's (SAB) peer review of the EPA's RTR risk assessment methodologies,[13] we routinely have examined a wider range of available acute health metrics than we do for our chronic risk assessments. This is in response to the acknowledgement that there are generally more data gaps and inconsistencies in acute reference values than there are in chronic reference values. By definition, acute California-Reference Exposure Levels (CA–REL) represent a health-protective level of exposure, with no risk anticipated at or below those levels, even for repeated exposures; however, the health risk from higher-level exposures is unknown. Therefore, when a CA–REL is exceeded and an AEGL–1 or emergency response planning guidelines (ERPG–1) level is available (*i.e.,* levels at which mild effects are anticipated in the general public for a single exposure), we have used them as a second comparative measure. Historically, comparisons of the estimated maximum off-site 1-hour exposure levels have not been typically made to occupational levels for the purpose of characterizing public health risks in RTR assessments. For most chemicals, the 15 minute occupational ceiling values are set at levels higher than a 1 hour AEGL–1, making comparisons to them irrelevant unless the AEGL–1 or ERPG–1 levels are exceeded. This is not the case when comparing the available acute inhalation health effect reference values for formaldehyde.[14]

The worst-case maximum estimated 1-hour exposure to formaldehyde outside the facility fence line for this source category is 0.47 mg/m^3. This estimated worst-case exposure exceeds the 1-hour REL by a factor of 8 (HQ_{REL} = 8) and is below the 1-hour AEGL–1 (HQ_{AEGL-1} = 0.4). Although this exposure estimate does not exceed the AEGL–1, it exceeds the workplace ceiling level guideline for the value developed by the NIOSH[15] ''for any 15 minute period in a work day'' (NIOSH REL-ceiling value of 0.12 mg/m^3; HQ_{NIOSH} = 4). Additionally, the estimated maximum acute exposure exceeds the Air Quality Guideline value that was developed by the World Health Organization[16] for 30-minute exposures (0.1 mg/m^3; HQ_{WHO} = 5). The estimated HQ equals 1 when the ACGIH TLV–Ceiling value (0.37 mg/m^3), a value defined as ''not to be exceeded at any time,'' is compared to the worst-case acute exposure screening level.[17] As we proposed, the EPA concludes that the

[12] A representative of KCMA stated that there are facilities that use coatings and contact adhesives with higher concentrations of formaldehyde. For more information see, *Conversation with a Representative of Kitchen Cabinet Manufacturers Association (KCMA) Regarding Add-On Control Devices and High Formaldehyde Concentration in Coatings,* dated June 23, 2011 in the docket for this action.

[13] The SAB peer review of RTR Risk Assessment Methodologies is available at: *http://yosemite.epa.gov/sab/sabproduct.nsf/4AB3966E263D943A8525771F00668381/$File/theEPA-SAB-10-007-unsigned.pdf.*

[14] U.S. the EPA. (2009) Chapter 2.9, *Chemical Specific Reference Values for Formaldehyde in Graphical Arrays of Chemical-Specific Health Effect Reference Values for Inhalation Exposures (Final Report).* U.S. Environmental Protection Agency, Washington, DC, the EPA/600/R–09/061, and available online at *http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=211003.*

[15] National Institutes for Occupational Safety and Health (NIOSH). Occupational Safety and Health Guideline for Formaldehyde; *http://www.cdc.gov/niosh/docs/81-123/pdfs/0293.pdf*

[16] WHO (2000). Chapter 5.8 Formaldehyde, in Air Quality Guidelines for Europe, second edition. World Health Organization Regional Publications, European Series, No. 91. Copenhagen, Denmark. Available on-line at *http://www.euro.who.int/_data/assets/pdf_file/0005/74732/E71922.pdf.*

[17] EPA considers this HQ of 1 not to represent an exceedance of the ACGIH value.

risk posed by the source category is acceptable. Our estimate of maximum individual cancer risk for this source category has decreased since proposal. This decrease is due to a miscategorization of a facility within the source category. While our screening for acute impacts has identified the potential for acute formaldehyde exposures to exceed some public health and occupational exposure guidelines at some wood furniture facilities, after considering the limited extent to potential exposures, the fact that the maximum estimate of acute risk has not changed, the fact that one of these facilities no longer uses formaldehyde, and the conservative nature of this screening process, these additional estimates do not change our overall judgment of risk acceptability. As explained in the proposal, in accordance with the approach established in the Benzene NESHAP, the EPA weighs all health risk measures and information considered in the risk acceptability determination, along with the costs and economic impacts of emissions controls, technological feasibility, uncertainties, and other relevant factors, in making our ample margin of safety determination and deciding whether standards are necessary to reduce risks further. Considering all of this information, in particular our revised estimates of the maximum cancer risks associated with the Wood Furniture Manufacturing source category and our revised estimate of the costs of additional controls that would reduce risk further, the EPA has determined that additional standards under CAA section 112(f)(2) are not necessary to provide an ample margin of safety to protect public health. We further note that we are finalizing standards under our CAA section 112(d)(6) authority that, while not expected to result in further reduction in current emissions or risk levels, are expected to reduce the emissions that would have been allowed under the 1995 MACT standard.

2. *Advances in Spray Technology*

The EPA proposed to prohibit the use of conventional spray guns, as defined by the 1995 Wood Furniture Manufacturing NESHAP, pursuant to CAA section 112(d)(6). This final rule promulgates this ban on conventional spray guns with one modification. Based on comments received, we are retaining an existing provision allowing the use of conventional spray guns when the overspray is routed to a control device. As reflected in the comments, some facilities are using overspray from conventional spray guns to partially fuel control devices such as RTOs. This exception from the ban allows facilities to avoid having to supplement fuel to a control device. The efficiency of the control device more than sufficiently reduces excess emissions associated with the decreased spray efficiency of conventional spray guns.[18] This exception for control devices is the sole exception for conventional spray gun use maintained from the 1995 NESHAP.

The EPA estimates that the switch to high efficiency spray guns from conventional spray guns does not incur a cost burden due to decreased product consumption and cost. Some of the high efficiency spray devices are more costly than conventional guns, but the savings in coating costs attributed to the increased spray efficiency more than compensates for increased cost of spray technology. Because the EPA lacks data regarding the number of conventional spray guns used in the industry and the change of spray efficiency in replacing conventional spray technology, we cannot quantify emissions reductions due to changing spray technology. For further information regarding cost and emission reductions, refer to the proposed preamble of this rulemaking.

V. Summary of Significant Comments and Responses

In the proposed action, we requested public comments on our residual risk reviews, our technology reviews, proposed amendments related to periods of SSM, the proposed prohibition of conventional spray guns in the wood furniture manufacturing industry, the proposed limit on formaldehyde use in coatings and contact adhesives for the wood furniture manufacturing industry and clarification of rule provisions. We received written comments from 18 commenters. Our responses to the public comments that changed the basis for our decisions, or are otherwise significant, are provided below.[19]

[18] A typical transfer efficiency of an HVLP gun is 65–80 percent compared to 25–45 percent for conventional guns under similar conditions. This is a difference of 40 percent spray efficiency. When compared to an estimate of 90 percent efficiency of an add-on control device, the control device more than compensates for the 40 percent reduction in efficiency of guns. For more information on transfer efficiencies of spray technologies, see the memo to the docket, *Impacts of Prohibiting the Use of Conventional Spray Guns in the Wood Furniture Manufacturing Operations Source Category,* dated October 29, 2010.

[19] See *Summary of Public Comments and Responses for Shipbuilding and Ship Repair (Surface Coating) and Wood Furniture Manufacturing Operations NESHAP, dated October 31, 2011,* for summaries of all comments and our responses to them.

A. Comments for Both Shipbuilding and Ship Repair (Surface Coating) and Wood Furniture Manufacturing Operations

Comment: A commenter pointed out that the EPA's own data show greater emissions reductions are being achieved and able to be achieved. According to the commenter, the EPA recognizes that certain sources have ''achieved'' a level of ''actual'' emissions that is below the level allowed under the existing MACT standards. The commenter further states that the EPA explains that ''the 'actual' emission levels are often lower than the emission levels that a facility might be allowed to emit and still comply with the MACT standards.'' The commenter says that the EPA's expectation that sources in these two categories are generally operating at half the level of emissions allowed under the existing MACT standard is at the core of its emission data analysis. Once the EPA has this information, it must factor this into the technology review under section 112(d)(6). Doing so should lead the EPA to revise the existing MACT for both source categories to require additional emission reductions.

The commenter further states that as part of the required section 112(d)(6) rulemaking, the EPA can have no possible justification for failing to recalculate the MACT floors based on new technology or emission reductions now achieved by these source categories.

The Court in the Hazardous Organic NESHAP (HON) decision stated that it did ''not think the words 'review, and revise as necessary' '' required the EPA to recalculate the floors ''from scratch'' in that case. *NRDC,* 529 F.3d at 1084. In short, the *NRDC* Court expressly declined to decide whether the EPA was required to recalculate floors where, as here, there have been developments in practices, processes, and control technologies.

As already noted above, for these source categories, there are such ''developments.'' Therefore, the EPA cannot rely on the HON case to evade its duty to satisfy section 112(d)(6). The HON case did not authorize the EPA to ignore data showing that significant emission reductions below the ''MACT-allowable'' emissions level have been ''achieved'' in practice. Even under *NRDC*—assuming *arguendo* that its section 112(d)(6) holding is in any way relevant here—section 112(d)(6) requires the EPA to recalculate the MACT floor when there have been advances in technology (after taking account of the factors listed in section 112(d)(6)), and when there is

information showing that greater emission reductions are ''achieved in practice.'' Commenters contend that, based on the information the EPA has, it is therefore ''necessary'' for the EPA to strengthen the existing MACT floor to ensure it now complies with section 112(d)(2)–(3).

The EPA must consider and address whether the existing MACT, including the floor, remains lawful in view of the greater levels of emission reductions that have been achieved.

Response: The commenter is mistaken on several grounds. First, the commenter asserts that ''the EPA recognizes that certain sources have 'achieved' a level of 'actual' emissions that is below the level allowed under the existing MACT standards'' and cites the Notice of Proposed Rulemaking preamble at 75 FR at 80227. This was a qualitative, introductory statement about how the NEI and other sources of data typically contain estimates of actual emissions that are ''often'' lower than allowable emissions. The statement was not specific to Wood Furniture or Shipbuilding facilities or data and in any event did not contain any quantitative determination about actual emissions levels.

Second, the commenter asserts that the EPA has an ''expectation'' that wood furniture and shipbuilding sources are ''generally operating'' at half of allowable emissions and once the EPA has this information, it must use it under CAA section 112(d)(6) to revise MACT standards, including recalculating MACT floors under section 112(d)(2)–(3). The comment apparently refers to the MACT allowable to actual emissions ratio developed for the source categories in this rulemaking. The commenter is incorrect in characterizing this ratio as a determination of the level of actual emissions achieved in practice in either source category. The actual to allowable ratio represents the lowest concentration of HAP in a coating available to the industry compared to the maximum allowed under the MACT. The allowable ratio is used for providing a worst-case scenario for estimating allowable emissions from the source. As clarification, for these coating rules, the concentrations of HAP in the coatings are considered the emissions from the source.

Third, the commenter is incorrect in asserting that the EPA must recalculate MACT floors under CAA section 112(d)(2)–(3). As explained in prior RTR rulemakings, the EPA does not read 112(d)(6) as requiring a reanalysis or recalculation of MACT floors. See proposed National Emission Standards for Coke Oven Batteries (69 FR 48388, 48351 (August 9, 2004)). Instead, we interpret section 112(d)(6) as essentially requiring us to consider developments in pollution control in the industry (''taking into account developments in practices, processes, and control technologies''), and assessing the costs of potentially stricter standards reflecting those developments. We read this provision as providing the EPA with substantial latitude in weighing these factors and arriving at an appropriate balance in considering revisions to our standards. This discretion also provides us with substantial flexibility in choosing how to apply modified standards, if necessary, to the affected industry.

The EPA reviewed other potential developments in practices, processes and control technologies for the Wood Furniture Manufacturing Operations and Shipbuilding and Ship Repair (Surface Coating) source categories and evaluated costs of potentially more stringent standards reflecting any such developments.[20] The EPA believes this review and the revisions finalized in this rulemaking satisfy the EPA's obligations under CAA 112(d)(6) for the Wood Furniture and Shipbuilding source categories.

B. Wood Furniture Manufacturing Operations

Comment: A commenter stated the EPA has provided no rational explanation for refusing to update the technology standards for both categories to meet the CAA section 112(d)(6) requirement, at minimum, by matching the limits of what sources have achieved and what other jurisdictions have required. The commenter stated:

> We urge the EPA to do so in the final rule. Where, as here, there are ''significant developments'' in technology, and where, as here, sources have achieved lower levels of emissions ''in practice'' than are ''MACT-allowable,'' it is abundantly clear that § 112(d)(6) requires the EPA to revise its standards in accordance with CAA § 112(d)(2)–(3), (6), 42 U.S.C. § 7412(d)(2)–(3), (6).

The commenter also inquires why the EPA did not adopt more stringent standards based on other regulating bodies within the country.

Response: The EPA has concluded the technology review for the wood furniture manufacturing operations NESHAP by setting a formaldehyde limit based on formulation (1 percent by weight) of finish coatings and contact adhesives with a compliance alternative using no more than 400 pounds of formaldehyde per 12 months. Also under the technology review, we are adopting a restriction of conventional spray guns limiting use to when emissions from finishing applications are routed to a control device. The commenter refers to volatile organic compounds (VOC) standards of the Bay Area and South Coast Air Quality Management Districts (BAAQMD and SCAQMD). These two standards are nearly identical in VOC formulation limits. Through the RTR process, the EPA evaluates risk and technology developments associated with HAP for the source categories under consideration. Hazardous air pollutants and VOC describe different sets of compounds, although a large subset of VOC are considered HAP. As discussed in the preamble of the proposed rule, we estimate that of all VOC in wood furniture coatings, 50 percent on average are HAP. This is an average value that in fact varies from facility to facility and coating to coating, depending on the facility's use of coatings specific to their operation. This is especially true for many niche companies. The EPA acknowledges BAAQMD and SCAQMD implementation of VOC limits, but these limits are not justified as nation-wide standards to reduce HAP from Wood Furniture Manufacturing. They are not technically feasible to be implemented nationally based on different operating and environmental conditions as well as the cost-effectiveness. By the commenter's own admission, there are facilities that are having a difficult time complying with the BAAQMD standard within its region. Moreover, based on available information, the EPA maintains that both area regulations are not cost effective as national standards to reduce HAP. As discussed in the preamble to the proposed rule, adoption of the BAAQMD VOC limits would result in 56 tpy of HAP reduction at a cost of $30,000 per ton. Although the commenter asserts based on a

[20] The EPA's review and analysis for the shipbuilding source category can be found in *Affordability of Add-on Controls for Surface Coating Operations at Shipbuilding and Ship Repair Facilities,* dated 10/28/2010, and for the wood furniture surface category in *Affordability of Lower VHAP Coating and Add-on Controls for Wood Furniture Manufacturing Operations,* dated October 28, 2010. Other significant memos describing the EPAs technology review are:

Developments in Practices, Processes, and Control Technologies for Wood Furniture Manufacturing Operations, dated August 24, 2010; *Impacts of Prohibiting the Use of Conventional Spray Guns in the Wood Furniture Manufacturing Operations Source Category,* dated October 19, 2010;

Cost Analyses for Control Options, dated September 27, 2010; *Cost Analyses for Add-on Controls for Surface Coating Operations at Shipbuilding and Ship Repair Facilities,* dated September 9, 2010.

conversation with BAAQMD staff that companies in the area are generally complying with BAAQMD limits, the EPA already assumed compliance when we estimated HAP reductions and cost-effectiveness of the BAAQMD limits. We have not changed our conclusion that the BAAQMD and SCAQMD regulation are not cost effective as a national standard.

Comment: Two commenters stated that the facility with the highest reported formaldehyde emissions (Kitchen Kompact located in Jeffersonville, Indiana) is not a representative wood coating manufacturing facility.

The commenters offered the following reasons:

a. The facility finishes products 4 days a week (as opposed to the EPA's 5-day assumption);

b. The facility uses uses higher VOC coating without a control device; and

c. The facility has all operations at one facility (other large facilities may spread operations over several facilities).

Another commenter believed that it is arbitrary for the EPA to set the formaldehyde limit based on data indicating that 3 percent (more likely 1 percent, see below) of facilities have formaldehyde emissions that could result in exceedances of the acute REL. The commenter offered the following reasons why the EPA's conclusion that 11 facilities (about 3 percent of the facilities) have formaldehyde emissions that could result in exceedances of the acute REL is problematic:

a. The EPA identified four facilities for emissions verification, two of which were reported to have formaldehyde emissions. One of these two, Chromcraft, no longer uses coatings that contain or emit formaldehyde. The other, Kitchen Kompact, emits less formaldehyde than reported and is not a representative facility. Both facilities are problematic and indicate that the facility data used in the risk assessment are suspect.

b. Three of the 11 facilities either no longer use formaldehyde-containing coatings or contact adhesives (Chromcraft) or have lower production than the EPA identified (Kitchen Kompact and Legacy Cabinets). Removing Chromcraft, only 10 facilities, or 2.5 percent of the total, have emissions that could result in exceedances of the acute REL.

c. The refined modeling approach that used aerial photographs of the facilities identified two major problems with the Human Exposure Model-3 (HEM–3) screening results:

- The REL, for several facilities, were overestimated due to global positioning system errors and;
- Moving the ''polar ring'' has a significant impact on the risk assessment. An evaluation of the aerial map indicated that the REL needed to be lowered in some cases by as much as 74 percent. While developing refined acute risks based on review of aerial maps is better than the screening approach, it is subjective at best.

d. Three of the 10 facilities had refined predicted acute risks greater than 3. The remaining 7 facilities had refined predicted acute risks of less than 3, and a majority of these had predicted acute risks just above 1 (1.5, 1.5, 1.6,[21] 1.8). The commenter suggested that the risks for these facilities should be discounted.

After removing these data points discussed above, the commenter noted that there are six facilities (approximately 1 percent of the facilities) with acute risks greater than 1. The commenter noted that setting a standard based on six facilities (or 1 percent of all wood furniture facilities) is unjustified and arbitrary.

Response: The EPA acknowledges that there have been changes to formaldehyde emissions since 2005. According to the comments received as well as phone conversations with several facilities, the EPA has received indications that facilities have changed and lowered formaldehyde emissions, subsequent to the 2005 NEI data. These updates, however, are not being used to replace the 2005 NEI data because data were not provided to support the assertions. Because the data are unverified, the EPA used source data from 2005 NEI to keep a verified source for purposes of risk assessment. As discussed elsewhere in this preamble, we are not adopting any new or additional requirements based on the risk assessment under section 112(f). We have found risk to be acceptable for this rule making.

Comment: Multiple commenters offered comments on the use of formaldehyde dose-response values.

Two commenters supported the use of the Integrated Risk Management System (IRIS) dose-response value for formaldehyde in the risk assessment.

One of the commenters stated that it is not only appropriate for the EPA to end its use of the Chemical Industry Institute of Toxicology (CIIT) Centers for Health Research risk value for formaldehyde emissions, doing the contrary would be arbitrary, capricious and unlawful. The commenter supported the IRIS value because it is more than 2,000 times greater than the CIIT value and thus more health-protective.

Alternatively, six commenters did not support the use of ''outdated'' and ''overly conservative'' models, such as that used to derive the IRIS dose-response value for formaldehyde.

One commenter stated that the EPA must use the best available science in its risk assessment, which is not the IRIS value. The commenter noted that the EPA has previously determined that the IRIS value ''no longer represents the best available science in the peer reviewed literature.'' 69 FR 18,327, 18,333 (Apr. 7, 2004). It was stated that the decision to discontinue use of CIIT model is inappropriate. The CIIT model should continue to be used to inform formaldehyde risk assessments. The criticisms of the model by Crump and colleagues lack foundation because the manipulations and alterations of the model on which they are based did not have an adequate basis in the underlying biology.

Response: In 2004, the EPA determined that the Chemical Industry Institute of Toxicology (CIIT) cancer dose-response value for formaldehyde (5.5×10^{-9} per μg/m^3) was based on better science than the IRIS dose-response value (1.3×10^{-5} per μg/m^3), and we switched from using the IRIS value to the CIIT value in risk assessments supporting regulatory actions. Based on subsequent published research, however, the EPA changed its determination regarding the CIIT model, and in 2010 the EPA returned to using 1991 IRIS value. The National Academy of Sciences (NAS) completed its review of the EPA's draft assessment in April of 2011 *(http://www.nap.edu/catalog.php?record_id=13142),* and the EPA has been working on revising the formaldehyde assessment. The EPA will follow the NAS Report recommendations and will present results obtained by implementing the biologically based dose response (BBDR) model for formaldehyde. The EPA will compare these estimates with those currently presented in the External Review draft of the assessment and will discuss their strengths and weaknesses. As recommended by the NAS committee, appropriate sensitivity and uncertainty analyses will be an integral component of implementing the BBDR model. In the interim, we will present findings using the 1991 IRIS value as a primary estimate, and may also consider other information as the science

[21] The value of 1.6 refers to Legacy Cabinets which, as the commenter asserts, no longer has any coatings or contact adhesives with formaldehyde in them.

evolves. The EPA notes that risk estimates based on both the IRIS and the CIIT unit risk estimates for formaldehyde were presented in the proposal for this final rule and that the risks were acceptable in both cases.

Comment: A commenter stated that the best available science indicates that formaldehyde in outdoor air does not present a risk to human health.

In support of their assertion, the commenter quoted WHO which stated that ''[i]n ambient air, formaldehyde is quickly photo-oxidized in carbon dioxide. It also reacts very quickly with the hydroxyl radicals to give formic acid. The half-life estimated for these reactions is about one hour depending on the environmental conditions.'' (WHO, 2010, at 103). Further, WHO concluded that because levels in ambient air are low, outdoor air does not contribute significantly to indoor pollution. *Id.* at 108. Therefore, the EPA's proposed cap on formaldehyde use is an unnecessary restriction that will not reduce residual risk, if any, to public health.

Response: Everyone is exposed to small amounts of formaldehyde in air and some foods and products. Nasal and eye irritation, neurological effects, and increased risk of asthma and/or allergy have been observed in humans breathing 0.1 to 0.5 ppm. Eczema and changes in lung function have been observed at 0.6 to 1.9 ppm. The Department of Health and Human Services (DHHS) has determined that formaldehyde is a known human carcinogen based on human and animal inhalation studies.[22] The EPA considers formaldehyde as a ''Probable Human Carcinogen'' in IRIS; *http://www.epa.gov/iris/subst/0419.htm.* The International Agency for Research on Cancer (IARC) classifies formaldehyde as a human carcinogen; *http://monographs.iarc.fr/ENG/Monographs/vol88/index.*

Ambient modeling of formaldehyde in the National Scale Air Toxics Assessment (NATA) at major urban centers indicate that formaldehyde exposures over the long term for excess cancer risks could be up to 100 in a million with a national average of 20 in a million based upon the current IRIS Unit Risk Estimate (URE). Monitoring at the National Air Toxics Trends Sites for formaldehyde are in good agreement with the NATA, refer to the following Web site; *http://www.epa.gov/ttn/atw/nata2005/compare.html.*

[22] This is according to the Agency for Toxic Substances and Disease Registry. *http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=219&tid=39.*

The dispersion modeling for wood furniture manufacturing and shipbuilding does not incorporate photochemical decay. The EPA conducted a sensitivity analysis and determined this feature in AERMOD[23] does not have a significant effect on near-field exposures and is most relevant for population exposures in the far field especially for pollutants with half-lives less than 30 minutes. The rate of decay is also very dependent temporally with less reactivity occurring during evening hours as well as during colder seasons. For more information on the sensitivity analysis, please refer to Section 4.6: Sensitivity Analysis—Atmospheric Chemistry in ''the EPA's Risk and Technology Review (RTR) Risk Assessment Methodologies,'' that was reviewed by the EPA's SAB; *http://www.epa.gov/ttn/atw/rrisk/rtrpg.html.* Based upon the rate of decay for formaldehyde varying from 1 hour to 16 hours and the fact that the MIR location for this source category is located within 300 meters of the emission source, we find that photochemical decay will not have an effect on the MIR.

Comment: A commenter stated the EPA's sole justification for setting the formaldehyde limit at 400 lbs per rolling 12-month period appears to be the fact that this level is already contained in the existing MACT as a work practice requirement. Specifically, the commenter contended:

> The EPA has stated that adopting this level as an emission standard would create ''either no or minimal additional costs.'' *Id.* at 80,247. This number was chosen in 1995, however. Where this number came from initially is unclear. While it may be convenient for industry to use a level with which it is already familiar and that would incur little or no extra cost, the EPA has not provided a reasoned explanation based on the required statutory health-based criteria for choosing this limit, rather than a more stringent limit. The record does not show why this is the appropriate limit to set as a residual risk standard in today's world.
>
> The EPA must complete this analysis and set an appropriately protective standard to satisfy CAA section 112(f)(2). Specifically, the EPA must consider and address how much emissions would be reduced if the EPA set a lower standard, and what level of emission standard is required to provide an ''ample margin of safety.'' 42 U.S.C. § 7412(f)(2). The EPA must address what emission standard would be needed to bring the MIR down to 1-in-1-million as the statute directs. Id. The EPA must address what standard is needed ''to provide maximum feasible protection against risks to health'' by ''protecting the greatest number of persons possible'' to a lifetime risk level no greater than 1-in-1 million. 75 Fed. Reg. at 80,223 (quoting Benzene NESHAP). The need for this analysis is amplified by the fact that the EPA has recognized numerous ''uncertainties related to the risk assessments, particularly for formaldehyde and glycol ether emissions.'' *Id.* at 80,242–43. For example, the EPA has stated that it is concerned that its risk analysis has failed to account for additional formaldehyde emissions that likely occur during curing and gluing. *Id.* at 80,243. The uncertain amount of additional risk unaccounted for provides another reason for the EPA to set a more protective formaldehyde emission standard than the level chosen as a work practice standard in 1995.

Response: The EPA is not finalizing the 400 pounds per rolling 12-month period formaldehyde use limit as proposed under 112(f) of the CAA. See section III of the preamble for a discussion of our final action.

The EPA is promulgating a formaldehyde standard under section 112(d)(6). Please refer to earlier descriptions in the preamble for further justification of section 112(d)(6) of the CAA. All wood furniture coatings and contact adhesives must be low- or no-formaldehyde (concentration not to exceed 1 percent by weight formaldehyde) or, as a compliance alternative, formaldehyde emissions from wood furniture facilities must not exceed 400 pounds per rolling 12-month period. The compliance options are designed to promote continuing reductions in formaldehyde emissions from wood furniture without requiring equipment changes that are not cost effective or limiting in production. The formaldehyde limits will avoid constraining the production of wood furniture products facilities while encouraging facilities to maintain or decrease levels of formaldehyde within coatings and contact adhesives.

The 400 pounds per 12 month period formaldehyde limit is based on the threshold level in Table 5 of the 1995 NESHAP, which itself was a result of negotiations with industry. In this RTR, we took the familiar numerical threshold for formaldehyde emissions and made it a level not to exceed as a compliance alternative. This was done, in the proposal, to reduce the HQ of formaldehyde from 7 to 3 in a cost effective manner. Between proposal and promulgation, it became clear through public comments that this limit was not cost effective for the source category. As discussed in greater detail of section IV of this preamble, this limit is now a compliance alternative under section 112(d)(6).

[23] AERMOD was developed by the American Meteorological Service (AMS)/EPA Regulatory Model Improvement Committee (AERMIC). This is the preferred model by EPA for modeling point, area and volume sources of continuous air emissions from facilities.

The science is unclear as to the degree of formaldehyde curing under different environmental conditions. We did not receive any public comments containing substantive or relevant emissions information on formaldehyde emissions from curing at wood furniture facilities. Until there is more data relevant to how cure formaldehyde is formed and/or in what quantities, we are unable to set limits for such emissions.

Comment: Five commenters disagreed with the 400 pound per 12 month period formaldehyde limit. Two of the commenters noted that limiting formaldehyde emissions from the wood furniture manufacturing operations source category is not supported by the EPA's risk analysis and is therefore arbitrary. One commenter noted that the total estimated cancer incidence due to actual emissions is 0.005 excess cancer cases per year or one case in every 200 years.

Another commenter further stated that the limit is not necessary because formaldehyde emissions are likely to decrease further during the 2-year compliance period, without any further regulations.

A commenter stated that the EPA is not justified in adopting this standard under CAA section 112(f)(2)(A) or CAA section 112(d)(6). On a related note, a different commenter questioned the authority of the EPA to establish a 400 pounds per year limit on formaldehyde emissions. The basis for the commenter's assertion is that a 400 pound limit will limit production at facilities and will inhibit companies from meeting industry performance standards. A commenter noted that the EPA chose the 400 pound per year formaldehyde limit based on Table 5 of the MACT standard (List of VHAP of Potential Concern Identified by Industry). Currently, facilities that exceed their baseline level would need no further explanation to permitting authorities if the exceedance is no more than 15 percent above the baseline, or if the use is below the level in Table 5. According to the commenter, the EPA did not note the number of facilities that use the formaldehyde limit versus the baseline exceedance option. Without more data, it is not known if facilities use the 400 pound per year limit. The commenter assumed that most facilities comply via the exceedance of baseline option and not the 400 pound per year limit.

A commenter also stated that the EPA improperly presumed a ''one-size fits all'' approach to coatings and adhesives is feasible in the manufacture of wood furniture/cabinet products. The EPA failed to take into account the performance, quality and customer requirements of these manufactured goods. The coatings and adhesives used for cabinet manufacture are specialized and may contain higher amounts of formaldehyde due to unique customer requirements.

A commenter noted that based on the data in an EPA memorandum,[24] the difference in price between coatings with formaldehyde and those that are formaldehyde-free is $3.02 per gallon. The commenter assumed a 1 percent formaldehyde content in the lower priced coating and a coating density of 8 pounds per gallon. The $3.02 per gallon additional cost for a formaldehyde-free coating would reduce formaldehyde emissions by 0.08 pounds for a cost of $37.75 per pound of formaldehyde eliminated or $75,500 per ton.

The commenter also evaluated the replacement cost for a topcoat containing 0.25-percent formaldehyde with a material containing only 0.005 percent formaldehyde. The price differential of $3.58 per gallon resulting in a cost of over $365,000 per ton of formaldehyde eliminated.

The commenter noted the high cost of replacement of contact adhesives. Based on the relatively low formaldehyde content in the current materials used, an incremental cost of only $1 to $2 per gallon could result in a cost exceeding $20,000 per ton.

Response: Based on information received in the comments and further inquiry of the effects of the proposed limit of 400 pounds formaldehyde per rolling 12-month period, the EPA has revised the standard to require the formaldehyde content of coatings and contact adhesives to be less than or equal to 1 percent by weight with an alternate compliance option of the 400 pounds per rolling 12-month period formaldehyde use limit, as explained elsewhere in the preamble.

This approach is promulgated under the technology review requirements under the CAA section 112(d)(6). Risk was determined to be acceptable under section 112(f)(2) of the CAA (residual risk). This technology rule will not limit production or result in significant costs for high production facilities and will encourage further reductions in the future without compromising the integrity of product.

The EPA has information that indicates that most facilities will be able to cost-effectively comply with the 1 percent by weight formaldehyde limit.[25] A commenter asserts that coatings and contact adhesives that are 1 percent formaldehyde are cost effective. This level of formaldehyde will be sufficient to create the cross-linking nucleation that provides durability to wood furniture products in many cases. By also having a formulation restriction as an alternative to the 400 pound per year limit, there will not be a restriction of production.

Comment: Multiple commenters offered comments related to the EPA's estimate of the cost for meeting the proposed formaldehyde standard.

One of the commenters noted that the EPA does not adequately support its cost estimate. The commenter stated that the EPA provided no data or analysis to support its assumption that all facilities operate in the same way or that the use of no- or low- formaldehyde coatings and contact adhesives would be suitable for use by all facilities.

The commenter further noted that the EPA's ''cost analysis'' consists of price information, from one supplier, of 13 no- or low-formaldehyde coatings that the agency considers to be suitable for use in wood furniture manufacturing operations.[26] The commenter noted that the EPA does not analyze whether the available coatings can be used in all applications or would meet industry performance standards.

A different commenter stated that the technical and cost analyses the EPA puts forth in support of the 400 pound per year limit are not backed up by any critical analysis or actual data. According to the commenter, this analysis amounts to the assertion that, ''because some facilities are doing it, all facilities should be able to do it. This is an empty 'analysis' that provides no support for the proposed 400 lb per year limit. On top of that, the EPA also asserts that the new standard can be met 'at little or no extra cost.' '' The commenter stated that a much more robust cost analysis would be needed to justify imposing an additional emissions limitation.

Moreover, two commenters noted that the EPA does not address the additional costs incurred due to the potential need

[24] See: *Impacts of Implementing a Limit on Formaldehyde Usage in the Wood Furniture Manufacturing Operations Source Category,* October 19, 2010. This document is available in the docket for this rulemaking.

[25] One of the major manufacturers of wood furniture coatings, Valspar, does not carry any products that have greater than 1 percent formaldehyde leading to the conclusion that coatings greater than 1 percent formaldehyde are mostly unnecessary in the industry. *http://www.valsparwood.com/valsparwood/msds/msds.jsp*

[26] See U.S. the EPA, Memorandum, *Impacts of Implementing a Limit on Formaldehyde Use in the Wood Furniture Manufacturing Operations Source Category* dated October 19, 2010 in the docket for this action.

for new equipment, the significant expenses to adapt to a new finish material.

Response: Based on information received in comments, we have adopted a 1 percent by weight formaldehyde limit with a 400 pounds formaldehyde per rolling 12-month period alternative compliance limit that allows wood furniture manufacturers to use their discretion to reformulate to lower formaldehyde coatings and contact adhesives while not necessitating the expense of production line reconfiguration. As discussed above, we have updated the cost-effectiveness analysis for the proposed formaldehyde limit and concluded that the 400 pound per 12 month limit as proposed would not be cost effective.[27]

Using low-formaldehyde coatings and contact adhesives reflects developments in technology and was described in the proposal as the method to achieve compliance with the proposed 400 pounds formaldehyde per rolling 12-month period. A limit of 1 percent formaldehyde in coatings and adhesives allows facilities the flexibility to use coatings and adhesives that are suitable for a range of different products, from cabinets to home furnishings, without compromising their quality, cost or production.[28] Also, in many cases, the 1 percent formaldehyde limit will allow flexibility in different types of line configurations.[29]

Comment: Multiple commenters noted that the EPA overestimated the health risk from glycol ethers by using ethylene glycol methyl ether as the representative glycol ether.[30] Given that the use of glycol ethers other than ethylene glycol methyl ether is the norm for the industry, the risk associated with this class of compounds is overstated in the EPA's analysis and no additional regulation of glycol ethers is warranted. The table contains a summary of speciated glycol ethers that are less toxic than ethylene glycol methyl ether. This shows, in the commenter's opinion, the EPA's overestimation of the health risk from these compounds.

One commenter offered another assessment approach for glycol ethers:

> A more reasonable assessment of glycol ethers would be the example based on data from all facilities of a large wood furniture manufacturing company. Glycol ether emissions in 2010 totaled 3.76 tons, of which over 95 percent of the emissions were ethylene glycol monobutyl ether, with the remainder comprising diethylene glycol phenyl ether, diethylene glycol butyl ether and phenoxyethanol. Based on the preponderance of ethylene glycol monobutyl ether in these emissions, a risk assessment using the significantly higher REL for ethylene glycol monobutyl ether (REL = 14 vs. REL for ethylene glycol methyl ether of 0.093 ref: *http://www.oehha.ca.gov/air/pdf/acuterel.pdf*) would conclude that the risk from glycol ethers is approximately 150 times lower than the EPA's analysis shows. Even if the REL for another glycol ether—Ethylene Glycol Monoethyl Ether, REL 0.37—were used, the risk associated with glycol ethers would be reduced by a factor of 4.

A second commenter offered a different option. The commenter recommended that the HQ derived by the EPA for Propyl Cellosolve® (ethylene glycol mono-n-propyl ether (EGME)) be recalculated using an REL they propose for ethylene glycol phenyl ether (EGPE). The commenter contends that information provided in their comments demonstrates that sufficient information exists to derive an REL for EGPE, which would be more appropriate for risk management than the REL for EGME.

Response: As we acknowledged in the proposal, the use of the EGME REL in our acute risk screening assessments provided us with a conservative (*i.e.,* health-protective) estimate of potential acute health risks from glycol ethers when the exact speciation profile of emitted glycol ethers was uncertain. For this source category, approximately 70 percent of facilities reporting glycol ether emissions reported them without any speciation information. Since there are no AEGL or ERPG values available for any glycol ethers, this further limits our ability to interpret the potential acute impacts of glycol ethers. Since this uncertainty remains, the EPA is not convinced that the use of less health-protective assumptions (such as those recommended by the commenters) represents any improvement in the assessment of potential acute impacts. Even so, because of the health-protective nature of our assessment, we do not believe that these estimated worst-case acute glycol ether impacts warrant the adoption of additional control measures.

Comment: A commenter suggested that the EPA either define the term ''conventional'' or mention the types of spray guns that are to be used to assist the regulated community in complying with this rule. The commenter suggested specific items, mentioned in the Paint Stripping and Miscellaneous Surface Coating Operations rule (Subpart HHHHHH): High-volume low-pressure (HVLP) spray guns, electrostatic applications, airless or air-assisted airless spray guns, or air-assisted airless equivalent technologies.

Another commenter suggested that the EPA exclude the following components from the definition: Handheld non-refillable aerosol containers, touch-up markers, marking pens, and the application of paper film or plastic film which may be pre-coated with an adhesive by the manufacturer. These items are allowed by the miscellaneous metal parts and products NESHAP (subpart MMMM).

Response: The existing Wood Furniture Manufacturing Operations MACT standards define ''conventional air spray'' as:

> a spray coating method in which the coating is atomized by mixing it with compressed air and applied at an air pressure greater than 10 pounds per square inch (gauge) at the point of atomization. Airless and air assisted airless spray technologies are not conventional air spray because the coating is not atomized by mixing it with compressed air. Electrostatic spray technology is also not considered conventional air spray because an electrostatic charge is employed to attract the coating to the workpiece. 40 CFR 63.801(a).

Many of the above suggestions for specific coating applications are clearly included or excluded by the definition of conventional spray provided in the 1995 NESHAP. The technologies listed above such as touch-up markers, marking pens and manufacturer pre-coated adhesive film are not affected by the ban on use of conventional spray guns because they do not have a spray, *i.e.,* they are not ''a spray coating method.'' Despite certain technologies being incorporated to other rule makings such as subpart HHHHHH, the commenter did not explain why these applications are necessary for this rule making. Examples of compliant spray technology include, but are not limited to HVLP spray guns, low-volume low-pressure guns (LVLP), electrostatic applications, airless and air-assisted airless spray guns. Low-capacity HVLP cup guns may be used for small batch operations.

Comment: A commenter suggested that the EPA clarify in the rule that facilities with controls can continue to use conventional spray guns. Any

[27] For further detail, see memo to the docket, *Estimated Cost Impact for Wood Furniture Manufacturing Industry to Comply with Proposed Formaldehyde Limit on Coating Operations Wood Furniture Manufacturing RTR,* dated July 15, 2011.

[28] It is necessary for some facilities to minimize levels of formaldehyde in the coating formulation to promote cross-linking nucleation. This process directly affects the quality and durability of the wood furniture. See notes from the *Marsh Furniture Site Visit* in the docket for this action for reference.

[29] For additional information, please see memo to the docket, *EPA Meeting with Kitchen Cabinet Manufacturers Association (KCMA) and Select Representatives,* dated August 17, 2011.

[30] The commenters referred to Table 4 in the EPA's October 22, 2010, memorandum, *Review of Glycol Ether Emissions Associated with Wood Furniture Manufacturing Source Category.*

emissions would be controlled via the control device.

Another commenter noted that several RTOs, which rely on rich VOC waste streams, are being operated in the industry. To impose air-assisted-airless guns reduces RTO efficiency and requires more fossil fuel to be consumed. Regenerative thermal oxidizers are fueled by overspray and fossil fuels; when the quantity of overspray is decreased, the more fossil fuel that is needed to keep the RTO functioning.

Response: The proposed rule has been revised to allow use of conventional spray guns when the overspray is routed to a functioning control device. The efficiency of the control device sufficiently reduces excess emissions associated with the decreased spray efficiency of conventional spray guns.[31]

Comment: Two commenters noted that the EPA offered an incorrect premise that all applicator improvements to increase transfer efficiency of the sprayed material will result in reduced emissions simply due to higher transfer efficiencies. The premise does not consider the low-use application considerations required for trials, touchups and product repairs.

One of the commenters noted:

> HVLP and equivalent high efficiency applicators require larger volumes of premixed materials for application and are best used where large quantities of materials are intended (usually volumes larger than one gallon to as much as 30 gallons) and in production quantity applications where large surface areas are coated. Under large volume spray applications, the high transfer efficiency equipment results in reduced material consumptions resulting in lower operating costs and lower emissions. Under high volume application conditions, there are both economic and environmental advantages for operations to use high transfer efficiency equipment.
>
> However, for low use applications such as low volume color stains, trial materials, small touchups and repairs, mixing large batches for use in high transfer efficiency equipment will result in increased material consumption and waste, increased cleanup solvent consumption and waste, and, for catalyzed top coat materials, material loss through restricted pot life. The proposed applicator changes would result in an inability to properly mix small batch work coatings (stains, sealers, topcoats, etc.), resulting in more wasted raw material, increased cleanup material use, waste and emissions and an unnecessary increase in generated waste volume.
>
> Arguably, the use of low volume conventional spray equipment such as cup guns, etc., affords the industry a small volume spray alternative that would otherwise require a part to be re-finished or scrapped entirely. Failed finish repairs with minimal rework and reapplication to the part and in some instances salvage of an otherwise scrapped production part makes production and environmental sense. Indeed small quantity applicators (generally those with a restricted volume of 1.0 U.S. quart or less) may actually result in lower VOC and VHAP emissions due to the restricted use and inherent limited production capability of the application equipment itself.
>
> Such an overreaching requirement for all spray equipment to be of the HVLP spray type or equivalent is not reasonable and does not consider the other adverse environmental impacts discussed above.

Response: First, we note the commenter agrees with the EPA that with large volume spray applications, which the commenter defines as larger than one gallon and in production quantities, high transfer efficiency equipment results in reduced material consumption, lower operating costs and lower emissions.[32] In addition, we find that the application technology is available for small batches of coating to be applied with non-conventional spray guns such as HVLP cup guns. The use of HVLP cup guns will allow for smaller batch mixes. This prevents unneeded coating material going to waste. With the higher spray efficiency associated with non-conventional spray guns, a greater portion of the spray is coating the piece of wood. This means that there is less overspray leading to fewer emissions. Other touch-up applications such as touch-up markers and handheld non-refillable aerosol containers may still be used under the standard. For more information see *Use of Non-Conventional Spray Technology in the Wood Furniture Manufacturing Industry,* dated August 3, 2011 and *Impacts of Prohibiting the Use of Conventional Spray Guns in the Wood Furniture Manufacturing Operations Source Category,* dated October 19, 2010, in the docket for this action.

C. Shipbuilding and Ship Repair (Surface Coating)

Comment: A commenter stated the EPA has provided no rational explanation for refusing to update the technology standards for both categories to meet the CAA section 112(d)(6) requirement, at minimum, by matching the limits of what sources have achieved and what other jurisdictions have required. The commenter stated:

> We urge the EPA to do so in the final rule. Where, as here, there are ''significant developments'' in technology, and where, as here, sources have achieved lower levels of emissions ''in practice'' than are ''MACT-allowable,'' it is abundantly clear that § 112(d)(6) requires the EPA to revise its standards in accordance with CAA § 112(d)(2)–(3), (6), 42 U.S.C. § 7412(d)(2)–(3), (6).

The commenter also inquires why the EPA did not adopt more stringent standards based on other regulating bodies within the country.

Response: As explained in the proposal, in accordance with the approach established in the Benzene NESHAP, our analysis of risks for this source category showed that the maximum source-category cancer risks for all facilities are within the range of acceptable risks and that the maximum chronic noncancer risks are unlikely to cause health impacts. The EPA has weighed all health risk measures and information considered in the risk acceptability determination, along with the costs and economic impacts of emissions controls, technological feasibility, uncertainties, and other relevant factors, in making our ample margin of safety determination. The EPA has found the overall level of risk to be acceptable for the source category and the ample margin of safety determination for this source category indicates that potential controls are not cost effective and technically feasible.

Comment: A commenter stated that the EPA has failed to fulfill its CAA section 112(f)(2) duty to fully assess and determine whether the risk from this source category is ''acceptable.'' The EPA concludes that this category creates an MIR of 20-in-1 million based on allowable emissions, and 10-in-1 million based on estimated ''actual'' emissions. The EPA does not justify its conclusion on the record that this level of risk is acceptable. It simply lists the numbers and different factors, without explaining how it is analyzing these factors or why they have led the EPA to reach its conclusion. The EPA recognizes that disparities in risk exist, with individuals in certain demographic groups, including African Americans and people with income below the poverty level, more likely to experience a higher level of risk. As discussed above, the EPA cannot simply rely on the old Benzene presumption that any

[31] A typical transfer efficiency of an HVLP gun is 65–85 percent compared to 25–45 percent for conventional guns under similar conditions. This is a difference of 40 percent spray efficiency. When compared to an estimate of 90 percent efficiency of an add-on control device, the control device more than compensates for the 40 percent reduction in efficiency of guns. For more information on transfer efficiencies of spray technologies see the memo to the docket, *Impacts of Prohibiting the Use of Conventional Spray Guns in the Wood Furniture Manufacturing Operations Source Category,* dated October 29, 2010.

[32] For more information please see *Impacts of Prohibiting the Use of Conventional Spray Guns in the Wood Furniture Manufacturing Operations Source Category,* dated October 19, 2010, in the docket for this action.

level of risk under 100-in-1 million is acceptable. And, the fact that 4,000 people is a ''relatively low'' number (*i.e.,* the number estimated to be exposed to cancer risks of 1-in-1 million or greater) does not justify the EPA's proposal of inaction to protect these people. CAA section 112(f)(2) requires the EPA to set standards for the maximum exposed individual. The individuals in this group of 4,000 are the very people whom the law requires the EPA to be concerned about.

Response: We do not consider the 1-in-1 million MIR level as a 'bright line' mandated level of protection for establishing residual risk standards. In determining the ample margin of safety (*i.e.,* the level of the standard), health risk is one factor that we must consider, along with other factors such as cost and technological feasibility. Balancing these and other factors with the ability to achieve meaningful risk reduction is a critical component of the residual risk rulemaking process. We considered reducing risks further but concluded that the technology required, such as a portable or permanent enclosure big enough to accommodate an entire ship or even a section of a ship to capture and control air emissions, would be cost prohibitive for this industry. Although our additional analysis of the demographics of the exposed population shows some disparities in risks between demographic groups for both categories, the EPA has determined that no group is exposed to an unacceptable level of risk. In general, the contribution of the source category to elevated facilitywide cancer or noncancer risks is low throughout the facilities in this source category. The primary processes driving the facilitywide cancer and noncancer risks are welding and blasting which are not regulated under this source activity.

Comment: A commenter stated that the EPA has determined that maximum individual cancer risk at the facilitywide level is 200-in-1 million based on estimated ''actual'' emissions. This means that the risk is likely to be higher based on allowable emissions. Further, of the 41 facilities with facilitywide MIR of 1-in-1 million or more, 15 have shipbuilding and ship repair operations that contribute over 50 percent to the facilitywide risks. Yet, the EPA does not propose to take any action to address that risk. The EPA should investigate ways to reduce this residual risk. It does not consider or address whether this level of facilitywide risk is acceptable at facilities where this source category is contributing so significantly. The EPA must do so to complete its CAA section 112(f)(2) duty. Its failure to consider regulatory options to address this residual risk is also arbitrary and capricious. At minimum, the EPA should consider whether to set a residual risk standard in order to reduce this high level of facilitywide risk. It should consider requiring extra work practice, reporting, monitoring and other measures for facilities that have the level of emissions putting them into this highest risk category. In sum, the EPA must address what standard is needed ''to provide maximum feasible protection against risks to health'' by ''protecting the greatest number of persons possible'' to a lifetime risk level no greater than 1-in-1 million. (quoting Benzene NESHAP), and its facilitywide risk analysis has failed to complete this essential step.

Response: We examined facilitywide risk to provide additional context to the source category risks. Facilitywide risks are driven by estimated emissions from blasting and welding sources at shipbuilding and ship repair facilities. These sources are not part of the Shipbuilding and Ship Repair (surface coating) source category. As discussed in the preamble to the proposed actions for this source category [75 FR 80237], we intend to list welding and blasting operations as a major source category under section 112(c)(5) of the CAA.

Comment: A commenter stated that with respect to the Shipbuilding and Ship Repair standard, we are concerned that the EPA based its decision that no additional controls are needed and that the existing standard provides an ample margin of safety in part due to ''the uncertainty and lack of data associated with one potential risk reduction option identified, and the technological infeasibility of the other option identified.'' The commenter urged the EPA to obtain the necessary data regarding the two options to make a more informed decision, including contacting air quality agencies that currently regulate the source category. We compliment the EPA on its intention to list welding and blasting operations at shipbuilding and ship repair facilities as a major source category under section 112(c)(5), but encourage the EPA to determine the extent to which this action will address the risks remaining at these facilities before deciding that relying on this strategy is sufficient.

Another commenter stated that the EPA's proposal fails to satisfy the ''ample margin'' requirement. The EPA bases this conclusion in part on the fact that it has ''not identified any data regarding the availability, use, performance and emissions associated with the use of lower overall volatile organic hazardous air pollutants (VOHAP) content or lower toxicity VOHAP content.'' *Id.* The EPA's conclusion is incorrect based on the use of the California standards in place. It is unclear why the EPA did not simply contact the four identified California air quality districts that have more stringent emission limits to attempt to gather these data. See Part IV.A.1, *infra.* This is the 8-year residual risk rulemaking and now is the time to collect and consider those data. The EPA may not defer or ignore this responsibility, or the fact that stricter standards are in use that it must address. The EPA also cannot justify a failure to set a residual risk standard on a lack of data. The EPA has failed to explain how the existing section 112(d) standard could provide the required ''ample margin of safety.'' One commenter also stated that where other jurisdictions have implemented stronger standards, this provides evidence that for the purposes of CAA section 112(d)(6), that more stringent limitations are achievable and have been achieved.

However, the EPA states that there are differences between coating limits in the four air districts, and that the 1995 MACT standard includes cold weather limits which are not present in the California standards due to its moderate climate. Neither of these points is a valid reason for the EPA not to further analyze and adopt stronger standards based on these California examples. While it may not be appropriate to adopt the California standards in full on a national basis, the EPA gives no rational justification for not analyzing how to take these models and use them to create an appropriate national standard under CAA section 112(d)(6). The EPA concludes that ''we do not have data to determine whether these lower-VOC content coatings could be applied nationwide.'' Gathering and analyzing that data, starting with any information already compiled by the California districts, is precisely what the section 112(d)(6) rulemaking is designed for. A lack of data is not a lawful basis for the EPA to decline to adopt a stronger MACT standard.

Response: The EPA researched current technologies for the shipbuilding and ship repair surface coating industry, and did not find any cost effective options that would make the current standard more stringent. Related to the marine coating limits in the MACT rule, we reviewed the general use and 22 specialty coating VOHAP limits and the lower limits that some states and air districts have adopted over the past decade for some of the specialty categories. Furthermore, we requested comment on the availability

and feasibility of using lower VOHAP coatings but did not receive any data or information during the comment period. Following proposal, we did contact a shipyard in Maine, and found that the use of lower VOHAP coatings, such as those required to meet the limits set by some of the California air quality districts, is not feasible in climates that are not as moderate and, therefore, necessitate greater thinning of paint.

As noted by the commenter, some jurisdictions have implemented more stringent standards that have resulted in changes to formulations being used in those locations. However, temperature and humidity issues experienced by other locations would make painting operations having to comply with the more stringent limitations more difficult, more expensive, and in some cases unachievable.

There are many different coatings, and in some cases groups of specific coatings, comprising each of the marine coating categories. Over the past several years, there have been changes to some formulations with HAP solvent reductions and solvent replacements, but those are coating and manufacturer specific and not reflective of the entire marine coating category.[33]

Comment: A commenter stated the EPA recognizes that there are ''disparities in risks'' for certain minority and lower-income individuals. For shipbuilding and ship repair, African Americans and people below the poverty level face a cancer risk of at least 1-in-1 million at a higher rate than their representation in the population. The EPA must consider potential ways to address the disproportionate impact on minority individuals and communities in deciding whether the likelihood of cancer risk is ''acceptable'' and whether there is action that could provide an ''ample margin of safety'' for these individuals and communities. Indeed, the EPA has recognized this since the development of the Benzene NESHAP, although it has failed to take action to address this (citing Benzene NESHAP factors, including ''overall incidence of cancer or other serious health effects within the exposed population… other quantified or unquantified health effects''). These additional factors are supposed to be used in addition to the MIR. It is neither acceptable, nor just, to avoid the need to reduce the correlation between race or income level and a disproportionate risk of cancer from toxic air pollution. The EPA's proposals for inaction, in the face of the recognized disparities, contradict the Administrator's professed commitment to ''fair treatment'' (EJ Guidance, *infra* note 30, at 3). With the knowledge it has, the EPA must, at minimum, consider the amount of background pollution faced by, and baseline health of, racial minorities and communities affected by these two source categories, including for the types of health effects that these HAP emissions have potential to exacerbate. These types of health data are readily available for the EPA to factor into its analysis and to use in proposing a regulatory response to the disproportionate risk found. It would be arbitrary and capricious to propose to take no further action at all after finding these disparities for both source categories.

The commenter supports the EPA's effort to gather demographic data. Merely looking at these numbers in a simplistic manner, however, is no substitute for a true environmental justice (EJ) analysis. The EPA should develop and undertake an actual analysis of the location and community effects of these source categories. It has sufficient data on the locations of these facilities to undertake an analysis of the effect of their emissions on the maximum exposed individual, the history of pollution faced in the most affected community, and to consider how to set a just standard in view of these lasting harms.

Response: The demographic analysis found that African Americans and people below the poverty line may be somewhat disproportionately impacted by facilitywide air toxics emissions; however, emissions from the source category itself contribute minimally to these impacts. The EPA also found the overall level of risk from both source categories to be acceptable and to provide an ample margin of safety for all populations in close proximity to these sources. As noted previously, the EPA's ability to quantitatively assess impacts on EJ communities is evolving.

VI. Impacts of the Final Rules

We estimate the only compliance costs for these amendments to the Shipbuilding and Ship Repair (Surface Coating) MACT standard to be those costs associated with facilities that choose to take advantage of the affirmative defense although there is no expectation that a facility will have a need for affirmative defense in this source category. These estimated costs are $3,141 per year, and are discussed in section VII.B. For these amendments to the Wood Furniture Manufacturing Operations MACT standards, we estimate the compliance costs to be $188,000 per year for the formaldehyde limit reporting and recordkeeping provisions, and $3,141 for facilities that choose to take advantage of the affirmative defense although there is no expectation that a facility will have a need for affirmative defense in this source category. These costs are discussed in section VII.B.

VII. Statutory and Executive Order Reviews

A. Executive Orders 12866: Regulatory Planning and Review, and Executive Order 13563: Improving Regulation and Regulatory Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is a ''significant regulatory action.'' Accordingly, the EPA submitted this action to the Office of Management and Budget (OMB) for review under Executive Order 12866 and Executive Order 13563 (76 FR 3821, January 21, 2011), and any changes made in response to OMB recommendations have been documented in the docket for this action.

B. Paperwork Reduction Act (PRA)

The information collection requirements in the final rules have been submitted for approval to OMB under the PRA, 44 U.S.C. 3501, *et seq.* The information collection requirements are not enforceable until OMB approves them.

The information requirements are based on notification, recordkeeping and reporting requirements in the NESHAP General Provisions (40 CFR part 63, subpart A), which are mandatory for all operators subject to national emission standards. These recordkeeping and reporting requirements are specifically authorized by section 114 of the CAA (42 U.S.C. 7414). All information submitted to the EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to agency policies set forth in 40 CFR part 2, subpart B.

These final rules would require maintenance inspections of the control devices but would not require any notifications or reports beyond those required by the General Provisions. The recordkeeping requirements require only the specific information needed to determine compliance.

When a malfunction occurs, sources must report them according to the

[33] See following memos to the docket on cost-effectiveness of control technologies: *Cost Analyses for Add-on Controls for Surface Coating Operations at Shipbuilding and Ship Repair Facilities,* dated September 2, 2010 and *Affordability of Add-on Controls for Shipbuilding and Ship Repair Source Category,* dated October 18, 2010.

applicable reporting requirements of 40 CFR part 63, subparts II and JJ. An affirmative defense to civil penalties for exceedances of emission limits that are caused by malfunctions is available to a source if it can demonstrate that certain criteria and requirements are satisfied. The criteria ensure that the affirmative defense is available only where the event that causes an exceedance of the emission limit meets the narrow definition of malfunction in 40 CFR 63.2 (sudden, infrequent, not reasonable preventable, and not caused by poor maintenance and or careless operation) and where the source took necessary actions to minimize emissions. In addition, the source must meet certain notification and reporting requirements. For example, the source must prepare a written root cause analysis and submit a written report to the Administrator documenting that it has met the conditions and requirements for assertion of the affirmative defense.

To provide the public with an estimate of the relative magnitude of the burden associated with an assertion of the affirmative defense position adopted by a source, the EPA provides an administrative adjustment to these ICRs that estimates the costs of the notification, recordkeeping and reporting requirements associated with the assertion of the affirmative defense. The EPA's estimate for the required notification, reports and records, including the root cause analysis, associated with a single incident totals approximately $3,141, and is based on the time and effort required of a source to review relevant data, interview plant employees, and document the events surrounding a malfunction that has caused an exceedance of an emission limit. The estimate also includes time to produce and retain the records and reports for submission to the EPA. The EPA provides this illustrative estimate of this burden because these costs are only incurred if there has been a violation and a source chooses to take advantage of the affirmative defense.

In these source categories, compliance is primarily achieved through reformulation of the coating. Because of this a malfunction of equipment, other than control devices, will not result in an exceedance of the standard. As noted previously, there is a small percentage of wood furniture facilities that use control devices for compliance; malfunctions with these devices are unlikely due to limited number in the industry compounding the unlikelihood of a malfunction. Therefore, we assert that although a cost for affirmative defense is possible, we believe that malfunctions are unlikely. Thus for these source categories, the EPA is not assigning any burden associated with affirmative defense.

This burden estimate for Shipbuilding and Ship Repair (Surface Coating) has been assigned EPA ICR number 1712.07 and for Wood Furniture Manufacturing Operations has been assigned EPA ICR number 1716.08, and both have been updated to reflect the estimate cost of availing the affirmative defense should a facility choose this option.

For the Wood Furniture Manufacturing Operations MACT standards, the ICR document prepared by the EPA has also been amended to include burden changes associated with the amendments regarding the formaldehyde limit added to the rule. The change in respondents' annual reporting and recordkeeping burden associated with these amendments for this collection (averaged over the first 3 years after the effective date of the standards) is estimated to be 2,000 labor hours with a total cost of $188,000 per year for the formaldehyde limit reporting and recordkeeping provisions. There will be no capital costs associated with the information collection requirements of the final rule.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9. When these ICRs are approved by OMB, the agency will publish a technical amendment to 40 CFR part 9 in the **Federal Register** to display the OMB control numbers for the approved information collection requirements contained in the final rules.

C. Regulatory Flexibility Act (RFA)

The RFA generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the *Administrative Procedure Act,* or any other statute, unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations and small governmental jurisdictions.

For purposes of assessing the impact of these final rules on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration's regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of these final rules on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. The costs associated with the new requirements in these final rules (*i.e.,* the formaldehyde use limit and conventional spray gun prohibition in the Wood Furniture Manufacturing Operations standards) are negligible as discussed above.

D. Unfunded Mandates Reform Act (UMRA)

These rules do not contain a federal mandate that may result in expenditures of $100 million or more for state, local and tribal governments, in the aggregate, or the private sector in any 1 year. Thus, these rules are not subject to the requirements of sections 202 or 205 of UMRA.

These rules also do not contain regulatory requirements that might significantly or uniquely affect small governments. They contain no requirements that apply to such governments or impose obligations upon them.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. These final rules primarily affect private industry and do not impose significant economic costs on state or local governments. Thus, Executive Order 13132 does not apply to this action.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). It will not have a substantial direct effect on tribal governments, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this action.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

This action is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997), because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. This action will not relax the control measures on existing regulated sources, and the EPA's risk assessments (included in the docket for the proposed rules) demonstrate that the existing regulations are associated with an acceptable level of risk and an ample margin of safety to protect public health.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use

This action is not a ''significant energy action'' as defined in Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. This action will not create any new requirements for sources in the energy supply, distribution or use sectors. Further, we have concluded that these final rules are not likely to have any adverse energy effects.

I. National Technology Transfer and Advancement Act (NTTAA)

Section 12(d) of the NTTAA of 1995, Public Law Number 104–113, 12(d) (15 U.S.C. 272 note) directs the EPA to use voluntary consensus standards (VCS) in its regulatory activities, unless to do so would be inconsistent with applicable law or otherwise impractical. The VCS are technical standards (*e.g.,* materials specifications, test methods, sampling procedures and business practices) that are developed or adopted by VCS bodies. The NTTAA directs the EPA to provide Congress, through OMB, explanations when the agency decides not to use available and applicable VCS.

This action does not involve technical standards. Therefore, the EPA did not consider the use of any VCS.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994) establishes federal executive policy on EJ. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make EJ part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority populations and low-income populations in the United States.

The EPA has determined that these final rules will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations, because we have concluded that the existing rules adequately protect human health with an adequate margin of safety and the final rules do not decrease the level of protection provided to human health or the environment. To examine the potential for any EJ issues that might be associated with each source category, we evaluated the distributions of HAP-related cancer risks across different social, demographic and economic groups within the populations living near the facilities where these source categories are located. Our analyses show that, for the two source categories evaluated, there is no potential for an adverse environmental effect or human health multi-pathway effects, and that acute and chronic noncancer health impacts are unlikely. Our additional analysis of facilitywide risks showed that the maximum facilitywide cancer risks for all source categories are within the range of acceptable risks and that the maximum chronic noncancer risks are unlikely to cause health impacts. Although our additional analysis of the demographics of the exposed population shows some disparities in risks between demographic groups for both categories, the EPA has determined that no group is exposed to an unacceptable level of risk.

The rules will not relax the control measures on emissions sources regulated by the rules, and therefore, will not increase risks to any populations exposed to these emissions sources.

K. Congressional Review Act (CRA)

The CRA, 5 U.S.C. 801, *et seq.,* as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that, before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing this final rule and other required information to the United States Senate, the United States House of Representatives, and the Comptroller General of the United States prior to publication of the final rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2). The final rule will be effective on November 21, 2011.

List of Subjects for 40 CFR Part 63

Environmental protection, Administrative practice and procedures, Air pollution control, Hazardous substances, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated: November 4, 2011.

Lisa P. Jackson,

Administrator.

For the reasons stated in the preamble, Title 40, chapter I, of the Code of Federal Regulations (CFR) is amended as follows:

PART 63—[AMENDED]

■ 1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, *et seq.*

Subpart II—[Amended]

■ 2. Section 63.781 is amended by revising paragraph (d) to read as follows:

§ 63.781 Applicability.

* * * * *

(d) If you are authorized in accordance with 40 CFR 63.783(c) to use an add-on control system as an alternative means of limiting emissions from coating operations, in response to an action to enforce the standards set forth in this subpart, you may assert an affirmative defense to a claim for civil penalties for exceedances of such standards that are caused by a malfunction, as defined in 40 CFR 63.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all the requirements in the affirmative defense. The affirmative defense shall not be available in response to claims for injunctive relief.

(1) To establish the affirmative defense in any action to enforce such a limit, you must timely meet the notification requirements in paragraph (d)(2) of this section, and must prove by a preponderance of evidence that:

(i) The excess emissions:

(A) Were caused by a sudden, infrequent and unavoidable failure of air pollution control and monitoring equipment, process equipment or a process to operate in a normal or usual manner; and

(B) Could not have been prevented through careful planning, proper design

or better operation and maintenance practices; and

(C) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(D) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(ii) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(iii) The frequency, amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions; and

(iv) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury or severe property damage; and

(v) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health; and

(vi) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(vii) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs; and

(viii) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(ix) A written root cause analysis has been prepared, the purpose of which is to determine, correct and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

(2) *Notification.* The owner or operator of the facility experiencing an exceedance of its emission limit(s) during a malfunction shall notify the Administrator by telephone or facsimile (FAX) transmission as soon as possible, but no later than 2 business days after the initial occurrence of the malfunction, if it wishes to avail itself of an affirmative defense to civil penalties for that malfunction. The owner or operator seeking to assert an affirmative defense shall also submit a written report to the Administrator within 45 days of the initial occurrence of the exceedance of the standard in this subpart to demonstrate, with all necessary supporting documentation, that it has met the requirements set forth in paragraph (d)(1) of this section. The owner or operator may seek an extension of this deadline for up to 30 additional days by submitting a written request to the Administrator before the expiration of the 45 day period. Until a request for an extension has been approved by the Administrator, the owner or operator is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.

■ 3. Section 63.782 is amended by adding a definition for ''affirmative defense'' to read as follows:

§ 63.782 Definitions.

* * * * *

Affirmative defense means, in the context of an enforcement proceeding, a response or a defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

* * * * *

■ 4. Section 63.783 is amended by redesignating paragraphs (b)(1) and (b)(2) as (b)(2) and (b)(3) and adding a new paragraph (b)(1) to read as follows:

§ 63.783 Standards.

* * * * *

(b) * * *

(1) At all times the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

* * * * *

■ 5. Section 63.785 is amended by adding paragraph (e) before Figure 1 to § 63.785 to read as follows:

§ 63.785 Compliance procedures.

* * * * *

(e) Continuous compliance requirements. You must demonstrate continuous compliance with the emissions standards and operating limits by using the performance test methods and procedures in § 63.786 for each affected source.

(1) General requirements.

(i) You must monitor and collect data, and provide a site specific monitoring plan, as required by §§ 63.783, 63.785, 63.786 and 63.787.

(ii) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), you must operate the monitoring system and collect data at all required intervals at all times the affected source is operating, and periods of malfunction. Any period for which data collection is required and the operation of the Continuous Emissions Monitoring System (CEMS) is not otherwise exempt and for which the monitoring system is out-of-control and data are not available for required calculations constitutes a deviation from the monitoring requirements.

(iii) You may not use data recorded during monitoring system malfunctions, repairs associated with monitoring system malfunctions or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. The owner or operator must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(2) [Reserved]

* * * * *

■ 6. Section 63.786 is amended by adding paragraph (e) to read as follows:

§ 63.786 Test methods and procedures.

* * * * *

(e) For add-on control systems approved for use in limiting emissions from coating operations pursuant to § 63.783(c), performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance of the affected source for the period being tested. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to demonstrate the conditions present during performance tests.

■ 7. Section 63.788 is amended by adding paragraph (b)(5) and revising paragraph (c) to read as follows:

§ 63.788 Recordkeeping and reporting requirements.

* * * * *

(b) * * *

(5) Each owner or operator that receives approval pursuant to § 63.783(c) to use an add-on control system to control coating emissions shall maintain records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the required air pollution control and monitoring equipment. Each owner or operator shall maintain records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.783(b)(1), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(c) *Reporting requirements.* Before the 60th day following completion of each 6 month period after the compliance date specified in § 63.784, each owner or operator of an affected source shall submit a report to the Administrator for each of the previous 6 months. The report shall include all of the information that must be retained pursuant to paragraphs (b)(2) through (3) of this section, except for that information specified in paragraphs (b)(2)(i) through (ii), (b)(2)(v), (b)(3)(i)(A), (b)(3)(ii)(A), and (b)(3)(iii)(A). If a violation at an affected source is detected, the owner or operator of the affected source shall also report the information specified in paragraph (b)(4) of this section for the reporting period during which the violation(s) occurred. To the extent possible, the report shall be organized according to the compliance procedure(s) followed each month by the affected source. If there was a malfunction during the reporting period, the report must also include the number, duration and a brief description of each malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.783(b)(1), including actions taken to correct a malfunction.

■ 8. Table 1 to subpart II of part 63 is amended by:

■ a. Removing entry 63.6(e)–(f);

■ b. Adding entries 63.6(e)(1)(i), 63.6(e)(1)(ii), 63.6(e)(1)(iii), 63.6(e)(2), 63.6(e)(3), 63.6(f)(1), and 63.6(f)(2)–(f)(3);

■ c. Removing entry 63.7;

■ d. Adding entries 63.7(a)–(d), 63.7(e)(1), and 63.7(e)(2)–(e)(4);

■ e. Revising entry 63.8;

■ f. Removing entry 63.10(a)–(b);

■ g. Adding entries 63.10(a), 63.10(b)(1), 63.10(b)(2)(i), 63.10(b)(2)(ii), 63.10(b)(2)(iii), 63.10(b)(2)(iv)–(b)(2)(v), 63.10(b)(2)(vi)–(b)(2)(xiv), and 63.10(b)(3);

■ h. Removing entry 63.10(c);

■ i. Adding entries 63.10(c)(1)–(9), 63.10(c)(10)–(11), 63.10(c)(12)–(14), and 63.10(c)(15);

■ j. Removing entry 63.10(d); and

■ k. Adding entries 63.10(d)(1)–(4) and 63.10(d)(5).

The revisions read as follows:

TABLE 1—TO SUBPART II OF PART 63—GENERAL PROVISIONS OF APPLICABILITY TO SUBPART II

Reference	Applies to subpart II	Comment
* * *	*	* * *
63.6(e)(1)(i)	No	See § 63.783(b)(1) for general duty requirement.
63.6(e)(1)(ii)	No.	
63.6(e)(1)(iii)	Yes.	
63.6(e)(2)	No	Section reserved.
63.6(e)(3)	No.	
63.6(f)(1)	No.	
63.6(f)(2)–(f)(3)	No	If an alternative means of limiting emissions (*e.g.*, an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this section does apply.
* * *	*	* * *
63.7(a)–(d)	No	If an alternative means of limiting emissions (*e.g.*, an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then these sections do apply.
63.7(e)(1)	No	If an alternative means of limiting emissions (*e.g.*, an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then see § 63.786(e).
63.7(e)(2)–(e)(4)	No	If an alternative means of limiting emissions (*e.g.*, an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then these sections do apply.
* * *	*	* * *
63.8	No	If an alternative means of limiting emissions (*e.g.*, an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then this section does apply, with the exception of § 63.8(c)(1)(i), § 63.8(c)(1)(iii), and the last sentence of § 63.8(d)(3).
* * *	*	* * *
63.10(a)	Yes.	
63.10(b)(1)	Yes.	
63.10(b)(2)(i)	No.	

TABLE 1—TO SUBPART II OF PART 63—GENERAL PROVISIONS OF APPLICABILITY TO SUBPART II—Continued

Reference	Applies to subpart II	Comment
63.10(b)(2)(ii)	No	See § 63.788(b)(5) for recordkeeping of occurrence, duration, and actions taken during malfunctions.
63.10(b)(2)(iii)	Yes.	
63.10(b)(2)(iv)–(b)(2)(v)	No.	
63.10(b)(2)(vi)–(b)(2)(xiv)	Yes.	
63.10(b)(3)	Yes.	
63.10(c)(1)–(9)	No	If an alternative means of limiting emissions (*e.g.*, an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then these sections do apply.
63.10(c)(10)–(11)	No	If an alternative means of limiting emissions (*e.g.*, an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then see § 63.788(b)(5) for records of malfunctions.
63.10(c)(12)–(14)	No	If an alternative means of limiting emissions (*e.g.*, an add-on control system) is used to comply with subpart II in accordance with § 63.783(c), then these sections do apply.
63.10(c)(15)	No.	
63.10(d)(1)–(4)	Yes.	
63.10(d)(5)	No	See § 63.788(c) for reporting malfunctions.
* * *	*	* * *

■ 9. Table 3 to subpart II of part 63 is amended by revising entry ''Determination of whether containers meet the standards described in § 63.783(b)(2)'' to read as follows:

TABLE 3 TO SUBPART II OF PART 63—SUMMARY OF RECORDKEEPING AND REPORTING REQUIREMENTS [a] [b] [c]

Requirement	All Opts.		Option 1		Option 2		Option 3	
	Rec	Rep	Rec	Rep	Rec	Rep	Rec	Rep
* * * *	*			*			*	
Determination of whether containers meet the standards described in § 63.783(b)(3)	X	X	.....	.....	.....	.....	.....	.....
* * * *	*			*			*	

[a] Affected sources that comply with the cold-weather limits must record and report additional information, as specified in § 63.788(b)(3)(ii)(C), (iii)(C), and (iv)(D).
[b] Affected sources that detect a violation must record and report additional information, as specified in § 63.788(b)(4).
[c] OPTION 4: The recordkeeping and reporting requirements of Option 4 are identical to those of Options 1, 2, or 3, depending on whether and how thinners are used. However, when using Option 4, the term volatile organic hazardous air pollutants ''VOHAP'' shall be used in lieu of the term Volatile Organic Compounds ''VOC,'' and the owner or operator shall record and report the Administrator-approved VOHAP test method or certification procedure.

* * * * *

Subpart JJ—[AMENDED]

■ 10. Section 63.800 is amended by:
■ a. Redesignating paragraphs (f) and (g) as paragraphs (h) and (i);
■ b. Redesignating paragraphs (d) and (e) as paragraphs (e) and (f);
■ c. Adding new paragraphs (d) and (g); and
■ d. Adding paragraph (j) to read as follows:

§ 63.800 Applicability.

* * * * *

(d) This subpart does not apply to any surface coating or coating operation that meets any of the criteria of paragraphs (d)(1) through (4) of this section.

(1) Surface coating of metal parts and products other than metal components of wood furniture that meets the applicability criteria for miscellaneous metal parts and products surface coating (subpart MMMM of this part).

(2) Surface coating of plastic parts and products other than plastic components of wood furniture that meets the applicability criteria for plastic parts and products surface coating (subpart PPPP of this part).

(3) Surface coating of wood building products that meets the applicability criteria for wood building products surface coating (subpart QQQQ of this part). The surface coating of millwork and trim associated with cabinet manufacturing are subject to subpart JJ.

(4) Surface coating of metal furniture that meets the applicability criteria for metal furniture surface coating (subpart RRRR of this part). Surface coating of metal components of wood furniture performed at a wood furniture or wood furniture component manufacturing facility are subject to subpart JJ.

* * * * *

(g) Existing affected sources shall be in compliance with § 63.802(a)(4) and § 63.803(h) no later than November 21, 2014. The owner or operator of an existing area source that increases its emissions of (or its potential to emit) hazardous air pollutants (HAP) such that the source becomes a major source that is subject to this subpart shall

comply with this subpart 1 year after becoming a major source.

* * * * *

(j) If the owner or operator, in accordance with 40 CFR 63.804, uses a control system as a means of limiting emissions, in response to an action to enforce the standards set forth in this subpart, you may assert an affirmative defense to a claim for civil penalties for exceedances of such standards that are caused by malfunction, as defined in 40 CFR 63.2. Appropriate penalties may be assessed, however, if the respondent fails to meet its burden of proving all the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(1) To establish the affirmative defense in any action to enforce such a limit, the owner or operator must timely meet the notification requirements in paragraph (j)(2) of this section, and must prove by a preponderance of evidence that:

(i) The excess emissions:

(A) Were caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner; and

(B) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(C) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(D) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(ii) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(iii) The frequency, amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions; and

(iv) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(v) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment, and human health; and

(vi) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(vii) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs; and

(viii) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions; and

(ix) A written root cause analysis has been prepared, the purpose of which is to determine, correct and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

(2) *Notification.* The owner or operator of the facility experiencing an exceedance of its emission limit(s) during a malfunction shall notify the Administrator by telephone or facsimile (FAX) transmission as soon as possible, but no later than 2 business days after the initial occurrence of the malfunction, if it wishes to avail itself of an affirmative defense to civil penalties for that malfunction. The owner or operator seeking to assert an affirmative defense shall also submit a written report to the Administrator within 45 days of the initial occurrence of the exceedance of the standard in this subpart to demonstrate, with all necessary supporting documentation, that it has met the requirements set forth in paragraph (h)(1) of this section. The owner or operator may seek an extension of this deadline for up to 30 additional days by submitting a written request to the Administrator before the expiration of the 45 day period. Until a request for an extension has been approved by the Administrator, the owner or operator is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.

■ 11. Section 63.801 is amended by:

■ a. Adding a definition for ''affirmative defense'' and ''low-formaldehyde'' and revising the definition for ''wood furniture'' in paragraph (a); and

■ b. Adding paragraphs (b)(24) through (b)(28).

The additions and revisions read as follows:

§ 63.801 Definitions.

(a) * * *

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

* * * * *

Low-formaldehyde means, in the context of a coating or contact adhesive, a product concentration of less than or equal to 1.0 percent formaldehyde by weight, as described in a certified product data sheet for the material.

* * * * *

Wood furniture means any product made of wood, a wood product such as rattan or wicker, or an engineered wood product such as particleboard that is manufactured at any facility that is engaged, either in part or in whole, in the manufacture of wood furniture or wood furniture components, including, but not limited to, facilities under any of the following standard industrial classification codes: 2434, 2511, 2512, 2517, 2519, 2521, 2531, 2541, 2599, or 5712.

* * * * *

(b) * * *

(24) C_f = the formaldehyde content of a finishing material (c), in pounds of formaldehyde per gallon of coating (lb/gal).

(25) F_{total} = total formaldehyde emissions in each rolling 12 month period.

(26) G_f = the formaldehyde content of a contact adhesive (g), in pounds of formaldehyde per gallon of contact adhesive (lb/gal).

(27) V_c = the volume of formaldehyde-containing finishing material (c), in gal.

(28) V_g = the volume of formaldehyde-containing contact adhesive (g), in gal.

■ 12. Section 63.802 is amended by adding paragraphs (a)(4), (b)(4), and (c) to read as follows:

§ 63.802 Emission limits.

(a) * * *

(4) Limit formaldehyde emissions by complying with the provisions specified in either paragraph (a)(4)(i) or (a)(4)(ii) of this section.

(i) Limit total formaldehyde (F_{total}) use in coatings and contact adhesives to no more than 400 pounds per rolling 12 month period.

(ii) Use coatings and contact adhesives only if they are low-formaldehyde coatings and adhesives, in any wood furniture manufacturing operations.

(b) * * *

(4) Limit formaldehyde emissions by complying with the provisions specified in either paragraph (b)(4)(i) or (b)(4)(ii) of this section.

(i) Limit total formaldehyde (F_{total}) use in coatings and contact adhesives to no more than 400 pounds per rolling 12 month period.

(ii) Use coatings and contact adhesives only if they are low-formaldehyde coatings and adhesives, in any wood furniture manufacturing operations.

(c) At all times, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

■ 13. Section 63.803 is amended by revising paragraph (h) to read as follows:

§ 63.803 Work practice standards.

* * * * *

(h) *Application equipment requirements.* Each owner or operator of an affected source shall not use conventional air spray guns except when all emissions from the finishing application station are routed to a functioning control device.

* * * * *

■ 14. Section 63.804 is amended by adding paragraphs (g)(9) and (h) to read as follows:

§ 63.804 Compliance procedures and monitoring requirements.

* * * * *

(g) * * *

(9) *Continuous compliance requirements.* You must demonstrate continuous compliance with the emissions standards and operating limits by using the performance test methods and procedures in § 63.805 for each affected source.

(i) *General requirements.* (A) You must monitor and collect data, and provide a site specific monitoring plan as required by §§ 63.804, 63.806 and 63.807.

(B) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), you must operate the monitoring system and collect data at all required intervals at all times the affected source is operating and periods of malfunction. Any period for which data collection is required and the operation of the CEMS is not otherwise exempt and for which the monitoring system is out-of-control and data are not available for required calculations constitutes a deviation from the monitoring requirements.

(C) You may not use data recorded during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. The owner or operator must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(ii) [Reserved]

(h) The owner or operator of an existing or new affected source subject to § 63.802(a)(4) or (b)(4) shall comply with those provisions by using either of the methods presented in § 63.804(h)(1) and (2) if complying with § 63.802(a)(4)(i) or (b)(4)(i) or by using the method presented in § 63.804(h)(3) if complying with § 63.802(a)(4)(ii) or (b)(4)(ii).

(1) Calculate total formaldehyde emissions from all finishing materials and contact adhesives used at the facility using Equation 5 and maintain a value of F_{total} no more than 400 pounds per rolling 12 month period.

$$F_{total} = (C_{f1}V_{c1} + C_{f2}V_{c2} + * * * + C_{fn}V_{cn} + G_{f1}V_{g1} + G_{f2}V_{g2} + * * * + G_{fn}V_{gn}) \quad \text{Equation 5}$$

(2) Use a control system with an overall control efficiency (R) such that the calculated value of F_{total} in Equation 6 is no more than 400 pounds per rolling 12 month period.

$$F_{total} = (C_{f1}V_{c1} + C_{f2}V_{c2} + * * * + C_{fn}V_{cn} + G_{f1}V_{g1} + G_{f2}V_{g2} + * * * + G_{fn}V_{gn}) * (1-R) \quad \text{Equation 6}$$

(3) Demonstrate compliance by use of coatings and contact adhesives only if they are low-formaldehyde coatings and contact adhesives maintaining a certified product data sheet for each coating and contact adhesive used, as required by § 63.806(b)(1), and submitting a compliance certification with the semiannual report required by § 63.807(c).

(i) The compliance certification shall state that low-formaldehyde coatings and contact adhesives, as applicable, have been used each day in the semiannual reporting period or should otherwise identify the periods of noncompliance and the reasons for noncompliance. An affected source is in violation of the standard whenever a coating or contact adhesive that is not low-formaldehyde, as demonstrated by records or by a sample of the coating or contact adhesive, is used. Use of a noncompliant coating or contact adhesive is a separate violation for each day the noncompliant coating or contact adhesive is used.

(ii) The compliance certification shall be signed by a responsible official of the company that owns or operates the affected source.

■ 15. Section 63.805 is amended by redesignating paragraph (a) as paragraph (a)(1) and adding paragraph (a)(2) to read as follows:

§ 63.805 Performance test methods.

(a)(1) * * *

(2) Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance of the affected source for the period being tested. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

* * * * *

■ 16. Section 63.806 is amended by removing and reserving paragraph (e)(4) and adding paragraphs (b)(4) and (k) to read as follows:

§ 63.806 Recordkeeping requirements.

* * * * *

(b) * * *

(4) The formaldehyde content, in lb/gal, as applied, of each finishing material and contact adhesive subject to the emission limits in § 63.802(a)(4) or (b)(4) and chooses to comply with the 400 lb/yr limits on formaldehyde in § 63.802(a)(4) (i) or (b)(4)(i).

* * * * *

(k) The owner or operator of an affected source subject to this subpart shall maintain records of the occurrence and duration of each malfunction of operation (*i.e.,* process equipment) or the air pollution control equipment and monitoring equipment. The owner or operator shall maintain records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.802(c), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

■ 17. Section 63.807 is amended by revising paragraphs (c) introductory text and (c)(3) and the first sentence in paragraph (d) to read as follows:

§ 63.807 Reporting requirements.

* * * * *

(c) The owner or operator of an affected source demonstrating compliance in accordance with § 63.804(g)(1), (2), (3), (5), (7), (8), (h)(1), and (h)(3) shall submit a report covering the previous 6 months of wood furniture manufacturing operations.

* * * * *

(3) The semiannual reports shall include the information required by § 63.804(g) (1), (2), (3), (5), (7), (8), (h)(1), and (h)(3), a statement of whether the affected source was in compliance or noncompliance, and, if the affected source was in noncompliance, the measures taken to bring the affected source into compliance. If there was a malfunction during the reporting period, the report shall also include the number, duration and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.802(c), including actions taken to correct a malfunction.

* * * * *

(d) The owner or operator of an affected source demonstrating compliance in accordance with § 63.804(g)(4), (6), and (h)(2) of this subpart shall submit the excess emissions and continuous monitoring system performance report and summary report required by § 63.10(e) of subpart A. * * *

* * * * *

■ 18. Table 1 to Subpart JJ of part 63 is amended by:

■ a. Removing entry 63.6(e)(1);

■ b. Adding entries 63.6(e)(1)(i), 63.6(e)(1)(ii), 63.6(e)(1)(iii);

■ c. Revising entries 63.6(e)(2) and (e)(3);

■ d. Removing entries 63.7 and 63.8;

■ e. Adding entries 63.7(a)–(d), 63.7(e)(1), 63.7(e)(2)–(e)(4), 63.8(a)–(b), 63.8(c)(1)(i), 63.8(c)(1)(ii), 63.8(c)(1)(iii), 63.8(c)(2)–(d)(2), 63.8(d)(3), and 63.8(e)–(g);

■ f. Removing entry 63.10(b)(2);

■ g. Adding entries 63.10(b)(2)(i), 63.10(b)(2)(ii), 63.10(b)(2)(iii), 63.10(b)(2)(iv)–(b)(2)(v), 63.10(b)(2)(vi)–(b)(2)(xiv);

■ h. Removing entry 63.10(c);

■ i. Adding entries 63.10(c)(1)–(9), 63.10(c)(10)–(11), 63.10(c)(12)–(c)(14), and 63.10(c)(15); and

■ j. Revising entry 63.10(d)(5) to read as follows:

TABLE 1 TO SUBPART JJ OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART JJ

Reference	Applies to subpart JJ	Comment
* * *	*	* * *
63.6(e)(1)(i)	No	See § 63.802(c) for general duty requirement.
63.6(e)(1)(ii)	No.	
63.6(e)(1)(iii)	Yes.	
63.6(e)(2)	No	Section reserved.
63.6(e)(3)	No.	
63.6(f)(1)	No.	
63.7(a)–(d)	Yes	Applies only to affected sources using a control device to comply with the rule.
63.7(e)(1)	No	See § 63.805(a)(1).
63.7(e)(2)–(e)(4)	Yes	Applies only to affected sources using a control device to comply with the rule.
63.8(a)–(b)	Yes	Applies only to affected sources using a control device to comply with the rule.
63.8(c)(1)(i)	No.	
63.8(c)(1)(ii)	Yes	Applies only to affected sources using a control device to comply with the rule.
63.8(c)(1)(iii)	No.	
63.8(c)(2)–(d)(2)	Yes	Applies only to affected sources using a control device to comply with the rule.
63.8(d)(3)	Yes, except for last sentence	Applies only to affected sources using a control device to comply with the rule.
63.8(e)–(g)	Yes	Applies only to affected sources using a control device to comply with the rule.

TABLE 1 TO SUBPART JJ OF PART 63—GENERAL PROVISIONS APPLICABILITY TO SUBPART JJ—Continued

Reference	Applies to subpart JJ	Comment
* * *	*	* * *
63.10(b)(2)(i)	No.	
63.10(b)(2)(ii)	No	See § 63.806(k) for recordkeeping of occurrence and duration of malfunctions and recordkeeping of actions taken during malfunctions.
63.10(b)(2)(iii)	Yes	Applies only to affected sources using a control device to comply with the rule.
63.10(b)(2)(iv)–(b)(2)(v)	No.	
63.10(b)(2)(vi)–(b)(2)(xiv)	Yes	Applies only to affected sources using a control device to comply with the rule.
* * *	*	* * *
63.10(c)(1)–(9)	Yes.	
63.10(c)(10)–(11)	No	See § 63.806(k) for recordkeeping of malfunctions.
63.10(c)(12)–(14)	Yes.	
63.10(c)(15)	No.	
* * *	*	* * *
63.10(d)(5)	No	See § 63.807(c)(3) for reporting of malfunctions.
* * *	*	* * *

■ 19. Table 3 to Subpart JJ of part 63 is amended by adding an entry for ''All Finishing Operations and Contact Adhesives'' following the entry for ''Contact Adhesives'' to read as follows:

TABLE 3 TO SUBPART JJ OF PART 63—SUMMARY OF EMISSION LIMITS

Emission point	Existing source	New source
* * * * *	*	*
All Finishing Operations and Contact Adhesives:		
(a) Achieve total free formaldehyde emissions across all finishing operations and contact adhesives, lb per rolling 12 month period, as applied	400	400
(b) Use coatings and contact adhesives only if they are low-formaldehyde coatings and contact adhesives	[f] 1.0	[f] 1.0
* * * * *	*	*
* * * * *	*	*

[f] The limits refer to the formaldehyde content by weight of the coating or contact adhesive, as specified on certified product data sheets.

[FR Doc. 2011–29457 Filed 11–18–11; 8:45 am]

BILLING CODE 6560–50–P