National Aeronautics and
Space Administration

**Principal Center for Regulatory Risk Analysis and Communication**

***REGULATORY ALERT***

**Proposed Rule**
**National Emission Standards for Hazardous Air Pollutants:**
**Area Source Standards for Metal Fabrication and Finishing**

*This information was prepared by NASA's Principal Center for Regulatory Risk Analysis and Communication (RRAC PC). If you have further questions or need assistance with this matter, please contact Sharon Scroggins/MSFC (256-544-7932, sharon.scroggins@nasa.gov).*

# Introduction

The U.S. Environmental Protection Agency (EPA) published the proposed rule for the National Emission Standards for Hazardous Air Pollutants (NESHAP): Area Source Standards for the Metal Fabrication and Finishing Industry ("metal fabrication NESHAP," or "area source rule") on 3 April 2008 (73 FR 18334). The rule, when finalized, will regulate metal fabrication and finishing operations at area sources of hazardous air pollutants (HAPs). Area sources are those sources of HAP that have the potential to emit fewer than 10 tons per year (tpy) of any single HAP and less than 25 tpy of any combination of HAPs.

EPA will accept public comment on the proposed rule through 5 May 2008, unless a public hearing is requested by 14 April 2008. If a hearing is requested, written comments must be submitted by 19 May 2008. EPA is under a court order to finalize the rule by 15 June 2008.

# Summary of the Proposed Rule

This proposed area source rule applies to each new and existing affected area source of HAPs engaged in metal fabrication or finishing operations in one or more of the following nine source categories that use or emit volatile organic HAP compounds (VOHAPs) or "metal fabrication and finishing HAPs," (MFHAPs), which includes compounds of cadmium, chromium, lead, manganese, and nickel:

- Electrical and electronic equipment finishing operations (that includes manufacturing of motors and generators, and electrical machinery, equipment, and supplies)
- Fabricated metal products manufacturing
- Fabricated plate work (boiler shops) manufacturing
- Fabricated structural metal manufacturing
- Heating equipment manufacturing, except electric
- Industrial machinery and equipment: finishing operations (that includes manufacturing of construction machinery, oil and gas field machinery, and pumps and pumping equipment)

- Iron and steel forging
- Primary metal products manufacturing
- Valves and pipe fittings manufacturing

If they use any compounds of the MFHAPs or any VOHAPs, the following types of operations at area sources would be affected by this proposed rule:

- Dry abrasive blasting
- Machining
- Dry grinding and dry polishing with machines
- Spray painting and coating
- Welding operations

Each affected source must develop and submit an initial notification and an annual certification of applicability and compliance, including reports of exceedances. Each source also must perform visible emissions monitoring in a graduated schedule from daily to weekly to monthly, and keep records to show compliance with the requirements of the rule. Most facilities will perform one monthly Method 22 emissions test (40 *Code of Federal Regulations* [CFR] Part 60 Appendix A) to show compliance with all proposed standards except the painting requirements. This proposed rule would require all workers who perform spray painting at affected new and existing facilities to be trained, with certification made available that this training has occurred. The painters would need to be certified as having completed classroom and hands-on training in the proper selection, mixing, and application of paints, or the equivalent. The proposed rule would require painters at a new source to be trained and certified no later than 180 days after hiring or no later than 180 days after the final rule is published, whichever is later. Painters at an existing source must be trained and certified no later than 60 days after hiring or no later than 6 months after the final rule is published, whichever is later. All painters must be recertified every 5 years.

## Management and Pollution Prevention Practices

Exhibit 1 provides the management and pollution prevention practices for minimizing emissions of MFHAPs, as outlined in the proposed rule.

EXHIBIT 1
Management and Pollution Prevention Requirements

| Type of Metal Fabrication and Finishing | Management and Pollution Prevention Practices |
|---|---|
| Dry Abrasive Blasting<br><br>Size: objects ≤8 ft in any dimension<br><br>Location: enclosed or unvented blast chambers | Minimize dust generation during emptying of abrasive blasting enclosures.<br><br>Operate all equipment associated with dry abrasive blasting operations according to the manufacturer's instructions.<br><br>Perform visual determinations of fugitive emissions near the enclosure and keep records of these determinations, along with any corrective actions taken. All instances of visible emissions require corrective action and must be reported, along with the annual compliance report. |

| Type of Metal Fabrication and Finishing | Management and Pollution Prevention Practices |
|---|---|
| Dry Abrasive Blasting<br><br>Size: objects ≤8 ft in any dimension<br><br>Location: vented enclosures | Capture emissions and vent them to a filtration control device or other device shown to achieve equivalent emission reductions per §63.6(g) of the NESHAP General Provisions.<br><br>Keep work areas free of excess MFHAP material by sweeping or vacuuming dust once per day, once per shift, or once per operation, as needed, depending on the severity of dust generation.<br><br>Enclose dusty material storage areas and holding bins, seal chutes, and conveyors.<br><br>Operate all equipment associated with dry abrasive blasting operations according to manufacturer's instructions.<br><br>Perform visual determinations of fugitive emissions at the exhaust vents and keep records of these determinations, along with any corrective actions taken. All instances of visible emissions require corrective action and must be reported, along with the annual compliance report. |
| Dry Abrasive Blasting<br><br>Size: objects >8 ft. in any dimension | Keep work areas free of excess MFHAP material by sweeping or vacuuming dust once per day, once per shift, or once per operation, as needed, depending on the severity of dust generation.<br><br>Enclose dusty material storage areas and holding bins, seal chutes, and conveyors.<br><br>Operate all equipment associated with dry abrasive blasting operations according to manufacturer's instructions.<br><br>Never perform dry abrasive blasting during a wind event.<br><br>Never perform dry abrasive blasting on substrates having paints that contain lead (greater than 0.1-percent lead) unless enclosures or barriers are employed, or similar precautions are taken to collect the lead-bearing emissions or prevent them from being dispersed.<br><br>Never re-use dry abrasive blasting media unless contaminants (i.e., any material other than the base metal, such as paint residue) have been removed by filtration or screening, and the abrasive material conforms to its original size.<br><br>Switch from high particulate matter (PM)-emitting blast media (e.g., sand) to low PM-emitting blast media (e.g., steel shot, aluminum oxide.) whenever practicable.<br><br>Perform visual determinations of fugitive emissions at the fenceline or property border nearest to the outdoor dry abrasive blasting operation and keep records of these determinations, along with any corrective actions taken. All instances of visible emissions require corrective action and must be reported, along with the annual compliance report. |

| Type of Metal Fabrication and Finishing | Management and Pollution Prevention Practices |
|---|---|
| Machining | Keep work areas free of excess MFHAP material by sweeping or vacuuming once per day, once per shift, or once per operation, as needed, depending on the severity of dust generation.<br><br>Operate all equipment associated with machining according to manufacturer's instructions.<br><br>Perform visual determinations of fugitive emissions at an exit or opening of the building containing the operation and keep records of these determinations, along with any corrective actions taken. All instances of visible emissions require corrective action and must be reported, along with the annual compliance report. |
| Dry Grinding and Dry Polishing with Machines | Capture emissions and vent them to a filtration control device or other device shown to achieve equivalent emission reductions per §63.6(g) of the NESHAP General Provisions.<br><br>Keep work areas free of excess MFHAP material by sweeping or vacuuming once per day, once per shift, or once per operation, as needed, depending on the severity of dust generation.<br><br>Operate all equipment associated with the operation of dry grinding and dry polishing with machines, including the emission control system, according to manufacturer's instructions.<br><br>Perform visual determinations of fugitive emissions at an exit or opening of the building containing the operation and keep records of these determinations, along with any corrective actions taken. All instances of visible emissions require corrective action and must be reported, along with the annual compliance report. |
| Spray Painting (MFHAP Control) of objects > 15 ft. in any dimension | Apply paint with a high-volume, low-pressure (HVLP) spray gun, electrostatic application, airless spray gun, air-assisted airless spray gun, or an equivalent technology that is demonstrated to achieve transfer efficiency comparable to one of these spray gun technologies for a comparable operation, and for which written approval has been obtained from the Administrator.<br><br>Clean spray guns in such a manner that an atomized mist of spray of gun cleaning solvent and paint residue is not created outside of a container that collects used gun cleaning solvent.<br><br>Train and certify all painters in the proper spray application of paints and the proper setup and maintenance of spray equipment. Training and certification are not required for students of an accredited painting training program who are under the direct supervision of trained instructor or to operators of robotic or automated painting operations. The rule lists the minimum content of the training program.<br><br>Maintain records of spray painter training.<br><br>Maintain documentation of the HVLP or other high-transfer efficiency spray paint delivery methods.<br><br>Implement the following management practices for MFHAP-containing materials:<br><br>Minimize MFHAP emissions during mixing, storage, and transfer of paints.<br><br>Keep paint and solvent lids tightly closed when not in use. |

| Type of Metal Fabrication and Finishing | Management and Pollution Prevention Practices |
|---|---|
| Spray Painting (MFHAP Control) of objects ≤ 15 ft. in any dimension | Apply paint with an HVLP spray gun, electrostatic application, airless spray gun, air-assisted airless spray gun, or an equivalent technology that is demonstrated to achieve transfer efficiency comparable to one of these spray gun technologies for a comparable operation, and for which written approval has been obtained from the Administrator.<br><br>Clean spray guns in such a manner that an atomized mist of spray of gun cleaning solvent and paint residue is not created outside of a container that collects used gun cleaning solvent.<br><br>Train and certify all painters in the proper spray application of paints and the proper setup and maintenance of spray equipment. Training and certification are not required for students of an accredited painting training program who are under the direct supervision of trained instructor or to operators of robotic or automated painting operations. The rule lists the minimum content of the training program.<br><br>Maintain records of spray painter training.<br><br>Maintain documentation of the HVLP or other high-transfer efficiency spray paint delivery methods.<br><br>Equip surface preparation stations or spray booths with fiberglass or polyester fiber filters or other comparable filter technology that can be demonstrated to achieve at least 98-percent control efficiency of paint overspray.<br><br>Implement the following management practices for MFHAP-containing materials:<br><br>Minimize MFHAP emissions during mixing, storage, and transfer of paints.<br><br>Keep paint and solvent lids tightly closed when not in use. |
| Spray Painting (VOHAP Control) | Either limit the VOHAP content of spray-applied paints to which no VOHAP-containing thinners or additives are added to no more than 3 pounds of volatile organic HAP per gallon (lb/gal.) (0.36 kg/L) paint solids or if VOHAP-containing thinners or additives are used, limit the VOHAP content of the total mass of paints applied via spray-applied coating operations to no more than 3 lb/gal. (0.36 kg/L) paint solids on a 12-month rolling weighted-average basis.<br><br>Follow compliance procedures outlined in the rule.<br><br>Implement the following management practices for VOHAP-containing materials:<br><br>Minimize VOHAP emissions during mixing, storage, and transfer of paints.<br><br>Keep paint and solvent lids tightly closed when not in use. |

| Type of Metal Fabrication and Finishing | Management and Pollution Prevention Practices |
|---|---|
| Welding | Operate all equipment, capture, and control devices associated with welding operations according to the manufacturer's instructions.<br><br>Either use a welding fume control system that achieves at least 85-percent overall control of MFHAPs, and operate this equipment according to the manufacturer's specifications, or implement the following management practices, as practicable, to minimize emissions of MFHAPs:<br><br>Use low-fume welding processes whenever possible.<br><br>Use shielding gases, as appropriate to the type of welding used.<br><br>Use an inert carrier gas, such as argon, as appropriate to the type of welding used.<br><br>Use low- or no-HAP welding materials and substrates.<br><br>Operate with a welding angle close to 90 degrees.<br><br>Optimize electrode diameter.<br><br>Operate with lower voltage and current.<br><br>Use low-fume wires, as appropriate to the type of welding used.<br><br>Optimize shield gas flow rate, as applicable to the type of welding used.<br><br>Use low or optimized torch speed.<br><br>Use pulsed-current power supplies, as appropriate to the type of welding used.<br><br>Perform visual determinations of welding fugitive emissions at the primary vent, stack, exit, or opening from the building containing the welding metal fabrication or finishing operations and keep records of these determinations, along with any corrective action taken. Corrective action must be taken for any opacity reading (6-minute average) greater than zero. Facilities that exceed 20-percent opacity (6-minute average) standards also must prepare and implement a Site-Specific Welding Emissions Management Plan. |
| Visual Determination of Fugitive Emissions | All of the previous standards require visual opacity readings. Section §63.11517 contains the details of these requirements.<br><br>**Welding Operations**<br><br>Initially, opacity readings must be performed daily. The frequency can be reduced to weekly and finally to monthly if a full week or month goes by and all opacity readings are less than 20-percent opacity. Visual determinations for welding operations initially must be performed using EPA Method 9. If, after 2 consecutive months of Method 9 testing, all opacity readings are less than 20 percent, the facility can switch to monthly Method 22 testing.<br><br>**Other Operations**<br><br>Initially, opacity readings must be performed daily. The frequency can be reduced to weekly and finally to monthly if a full week or month goes by with no visible fugitive emissions being detected. Visual determinations must be performed using EPA Method 22. |

# Applicability to NASA

This proposed metal fabrication and finishing area source NESHAP will apply to metal fabrication and finishing operations that occur onsite at NASA Centers that are area sources, as well as those conducted offsite at contractor and vendor area source facilities.

NASA Centers and Programs are advised to review this proposal to identify potential adverse impacts and should note that it ***does not*** include an exemption for space vehicle-related operations. Facilities affected by this proposed rule are not subject to the miscellaneous coating requirements in 40 CFR Part 63, Subpart HHHHHH, "National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources," for their affected source(s) that are subject to the requirements of this proposed rule. There potentially may be other sources at the facility not subject to the requirements of this proposed rule that are instead subject to Subpart HHHHHH of this part; however, facilities owned or operated by NASA are not subject to Subpart HHHHHH, according to §63.1169(d)(1).

This rule does not apply to research or laboratory facilities, as defined in Section 112(c)(7) of the Clean Air Act (CAA). This exemption is not likely to affect NASA operations unless those operations are conducted as research focused on metal fabrication and finishing processes. Research programs focused on other areas that use typical metal fabrication and finishing processes probably would not be considered exempt from the requirements of this rule. Tool or equipment repair operations or facility maintenance operations also are exempt from this rule. The rule states that affected facilities do not need to have a Title V permit unless they need one for another reason.

Thus, flight hardware-related and other metal fabrication and finishing operations that are conducted at area source facilities may be required to comply with the requirements of this rule. Any issues or adverse impacts should be identified and reported immediately to Sharon Scroggins/MSFC to facilitate the preparation and submittal of comments to EPA by 5 May 2008.