

# Summary of NESHAP for Nine Metal Fabrication and Finishing Sources 40 CFR 63 Subpart XXXXXX

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# New National Emission Standard for Hazardous Air Pollutants (NESHAP)

- ▶ Published in July 23, 2008 Federal Register (73 FR 42978)
- ▶ Codified in 40 CFR 63.11514 – .11523
- ▶ Why relevant today?
  - Compliance date for existing sources (i.e., in existence on April 3, 2008) is July 25, 2011
  - For new sources, (i.e., construction or reconstruction commenced on or after April 3, 2008) compliance date is July 23, 2008 or startup, whichever is later

# Applicability of New Standards

- ▶ Applies to “Area Sources” in Nine Metal Fabrication and Finishing (MF&F) source categories
- ▶ An Area Source is a stationary source that is not a “Major Source”
- ▶ A Major Source emits or has the potential to emit 10 tpy of any single HAP or 25 tpy of any combination of HAP – and is subject to Title V Operating Permit

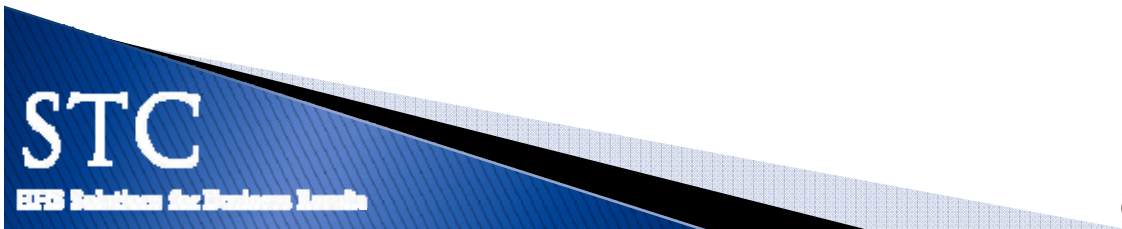
# MF&F Source Categories and NAICS Codes

1. Electrical and Electronic Equipment Finishing Operations – 335999, 335312
2. Fabricated Metal Products – 332117, 332999
3. Fabricated Plate Work (Boiler Shops) – 332313, 332410, 332420
4. Fabricated Structural Metal Manufacturing – 332312
5. Heating Equipment, except Electric – 333414

# MF&F Source Categories and NAICS Codes cont'd

6. Industrial Machinery and Equipment Finishing Operations – 333120, 333132, 333911
7. Iron and Steel Forging – 33211
8. Primary Metal Products Manufacturing – 332618
9. Valves and Pipe Fittings – 332919

See Table 1 in Subpart XXXXXX for further details



# MF&F Hazardous Air Pollutants (MFHAP)

- ▶ Rule only applies to area sources in the nine source categories that use or have the potential to emit MFHAP
- ▶ MFHAP means any compound of cadmium, chromium, lead, manganese, or nickel
- ▶ MFHAP also includes the elemental form of the metal (except lead)
- ▶ Determination of MFHAP made by using Material Safety Data Sheet (MSDS)

# Threshold Percentages for MFHAP

- ▶ Materials containing less than the following percent by weight of one or more metals is not considered to be MFHAP
  - Cadmium – 0.1
  - Chromium – 0.1
  - Lead – 0.1
  - Nickel – 0.1
  - Manganese – 1.0
- ▶ Cd, Cr, Pb, Ni are carcinogens
- ▶ Mn is a non-carcinogen

# Examples of Metal Alloys

- ▶ Stainless steel may contain 5 - 20% chromium
- ▶ Inconel is a high nickel content alloy (45%) that may also contain chromium (20%) and manganese (1%)
- ▶ Brass and bronze alloys may contain 0.2 - 8% lead



# Exempt Facilities

- ▶ Military installations
- ▶ NASA facilities
- ▶ National Nuclear Security facilities
- ▶ Military munitions facilities
- ▶ Research or laboratory facilities (as defined in CAA)
- ▶ Tool or equipment repair
- ▶ Quality control activities

# Operations Common to the Nine Source Categories

- ▶ EPA identified five general production operations common to the nine MF&F sources:
  - Dry abrasive blasting (3 categories)
  - Dry grinding and dry polishing with machines
  - Machining
  - Spray painting (2 categories)
  - Welding

# Emissions Control Requirements

- ▶ Control requirements only apply when an operation is being performed that uses materials that contain or have the potential to emit MFHAP
- ▶ Use MSDS to determine if materials contain MFHAP



# Standards for Dry Abrasive Blasting (DAB)

- ▶ DAB has 3 categories:
  - DAB Performed in Totally Enclosed, Unvented Blast Chambers
  - DAB Performed in Vented Enclosures
  - DAB of Objects Greater than 8 Feet in any Dimension

# DAB Performed in Totally Enclosed, Unvented Blast Chamber

- ▶ (Read... no air enters or leaves the chamber during operation)
- ▶ “Glove box” units
- ▶ Minimize dust generation during emptying of abrasive blasting enclosures; and
- ▶ Operate all equipment associated with the blasting operation according to the manufacturer’s instructions



# DAB Performed in Vented Enclosures

- ▶ Capture emissions and vent to a filtration control device
- ▶ Operate all DAB equipment and control devices according to manufacturer's instructions
- ▶ Maintain record of manufacturer's specifications for the control devices



# DAB Performed in Vented Enclosures, cont'd

- ▶ Minimize emissions of MFHAP by:
  - Minimizing excess dust in the surrounding area
  - Enclosing dusty abrasive material storage areas and holding bins
  - Seal chutes and conveyors that transport abrasive materials

# DAB of Objects Greater than 8 Feet in any Dimension

- ▶ Use Standards for DAB in Vented Enclosures or the following...
  - Minimize excess dust in the surrounding area
  - Enclose dusty abrasive material storage areas and holding bins
  - Seal chutes and conveyors that transport abrasive materials
- ▶ Operate all DAB equipment and control devices according to manufacturer's instructions



# DAB for Objects > 8 Feet, cont'd

- ▶ Do not re-use DAB media unless contaminants have been removed by filtration or screening
- ▶ When practical, switch from high PM-emitting media (e.g., sand) to low PM-emitting media (e.g., crushed glass, specular hematite, steel shot, aluminum oxide)
- ▶ Perform visual determinations of fugitive emissions

# DAB for Objects > 8 Feet, cont'd

- ▶ Visual determinations outdoors – fugitive emissions at the fenceline or property border nearest the outdoor DAB operation
- ▶ Visual determinations indoors – fugitive emissions at the primary vent, stack, or exit from the building containing DAB operation
- ▶ Keep a record of all visual determinations of fugitive emissions
- ▶ Daily, weekly, monthly, quarterly gradations

# DAB for Objects > 8 Feet, cont'd

- ▶ Take corrective action to eliminate visible fugitive emissions and keep records
- ▶ Do follow-up inspection for visible fugitive emissions
- ▶ Report all instances of visible emissions, corrective actions taken, and results of subsequent follow-up inspections, with your annual certification and compliance report

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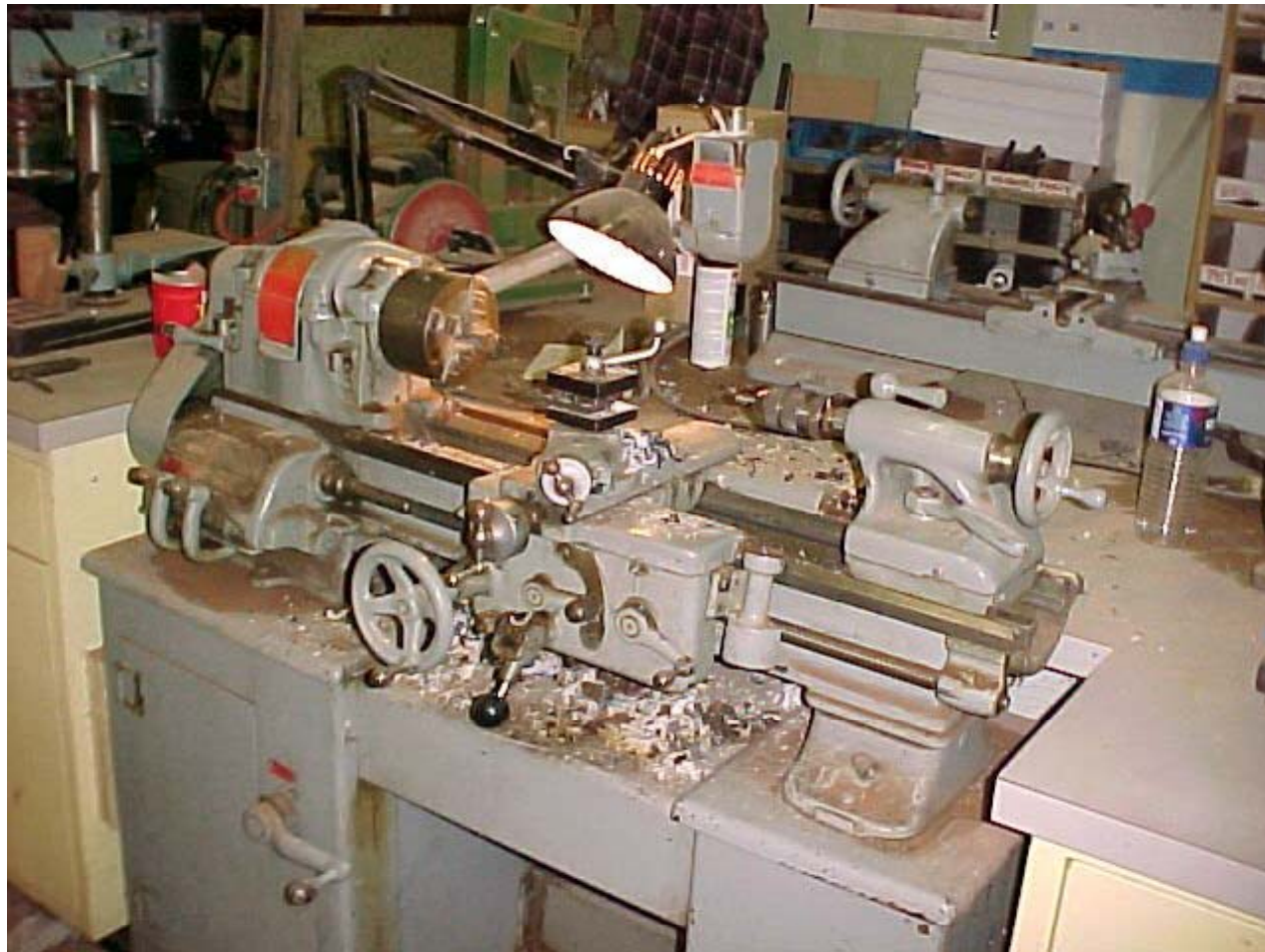
- ▶ Questions?



# Standards for Machining

- ▶ Machining means dry metal turning, milling, drilling, boring, tapping, planing, broaching, sawing, cutting, shaving, shearing, threading, reaming, shaping, slotting, hobbing, and chamfering with machines
- ▶ Minimize excess dust in the surrounding area to reduce MFHAP emissions
- ▶ Operate all equipment according to manufacturer's instructions

# Example Metal Lathe



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# Standards for Dry Grinding and Dry Polishing with Machines

- ▶ Capture emissions and vent them to a filtration control device
- ▶ Keep manufacturer's specifications for the filtration control devices
- ▶ Minimize excess dust in the surrounding area
- ▶ Operate all equipment in accordance with manufacturers' specifications

# Standards for Spray Painting

- ▶ All spray-applied painting of objects must meet the following requirements:
  - Spray booth/room has a full roof, at least two complete walls, and one or two complete side curtains or barrier material to cover all four sides
  - Spray booth/room is ventilated so that air is drawn into the booth and leaves only through filter
- ▶ Exceptions:
  - Affected sources located at Fabricated Structural Metal Manufacturing facilities (e.g., iron and steel used for bridges, buildings, ships, etc.)
  - Affected sources that spray paint objects greater than 15 feet that are not spray painted in spray booths or spray rooms



# Spray Painting, cont'd

- ▶ Spray booths/rooms must be fitted with filter technology to achieve at least 98 percent capture of MFHAP
  - Perform regular inspection and replacement of filters according to manufacturer's instructions
  - Maintain documentation of these activities
- ▶ Alternative – spray booths/rooms equipped with a water curtain
  - Operated and maintained according to manufacturer's specifications
  - Achieves at least 98 percent control of MFHAP

# Example Spray Booth with Filters



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# Spray Painting Application Equipment

- ▶ All paints must be applied with one of the following:
  - High-volume, low-pressure (HVLP) spray gun
  - Electrostatic application
  - Airless spray gun
  - Air-assisted airless spray gun
  - An equivalent technology (written approval required)



# Additional Requirements for Spray Painting

- ▶ Maintain documentation of the HVLP or other high transfer efficiency spray paint delivery methods
- ▶ Cleaning of paint spray guns:
  - Use non-HAP gun cleaning solvents, or
  - Assure that an atomized mist of cleaning solvent and paint residue is not created outside of a container that collects the used gun cleaning solvent

# Spray Painting Training

- ▶ All workers performing painting must be certified that they have completed training in the proper spray application of paints and the proper setup and maintenance of spray equipment
- ▶ Employers must assure and certify that workers and contractors who spray apply paints are trained in the proper application of paints
- ▶ Training requirements do not apply to operators of robotic or automated painting operations

# Training Program, cont'd

- ▶ Training program must include:
  - List of all current personnel by name and job description who are required to be trained
  - “Hands on” or classroom instruction that covers:
    - spray gun equipment selection, set up, and operation
    - spray technique to improve transfer efficiency and minimize paint usage and overspray
    - routine spray booth and filter maintenance
    - environmental compliance with this rule

# Training Program, cont'd

- ▶ Training program must include, cont'd:
  - Description of the methods used to demonstrate, document, and provide certification of successful completion of training
  - Note – an equivalency determination may be made for experienced painters to obviate initial training
- ▶ For existing sources, all personnel must be trained and certified no later than July 25, 2011, or 180 days after hiring, whichever is later

# Training Program, cont'd

- ▶ For new sources, training required:
  - No later than January 20, 2009, or
  - 180 days after startup, or
  - 180 days after hiring
- ▶ All spray painters must receive refresher training and be re-certified every 5 years
- ▶ Maintain records of employee training certification



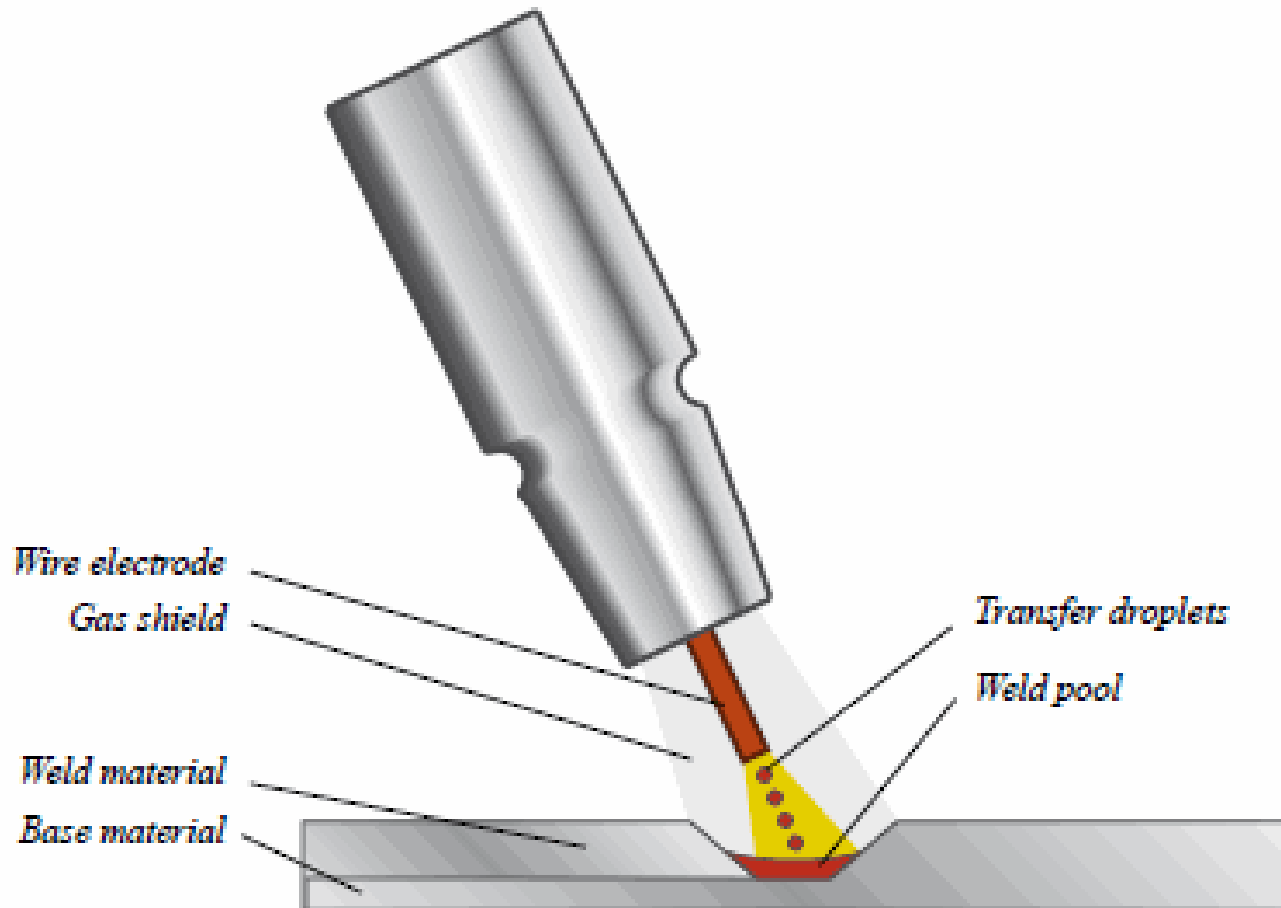
# Standards for Welding

- ▶ Operate all equipment and control devices associated with welding operations according to manufacturer's instructions
- ▶ Maintain a record of manufacturer's specifications for the control devices
- ▶ Implement one or more management practices to minimize emissions of MFHAP

# Management Practices

- ▶ Use welding processes with reduced fume generation capabilities (e.g., GMAW or MIG)
- ▶ Use welding filler metals, shielding gases, carrier gases, or other process materials
- ▶ Optimize welding process variables such as electrode diameter, voltage, amperage, welding angle, etc.
- ▶ Use a welding fume capture and control system (e.g., hoods or “elephant trunks”) to collect fumes and vent to filter

# Example of GMAW



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# Welding Rod Considerations

- ▶ Sources using >2,000 pounds per year of welding rod containing MFHAP (calculated on a rolling 12-month basis) must demonstrate that management practices or fume control measures are being implemented
- ▶ Requires visual emissions monitoring and recordkeeping
- ▶ Tiered approach (3 tiers) to requirements based on visual emissions monitoring results
- ▶ Site-Specific Welding Emissions Management Plan may be required to control welding emissions

# Monitoring Methods

- ▶ Emissions standards for certain dry abrasive blasting and welding operations reference EPA test methods 9 and 22
- ▶ Method 9 Visual Determination of Opacity requires a certified Qualified Observer
  - Re-certification required every 6 months
- ▶ Method 22 Visual Determination of Fugitive Emissions does not require certification

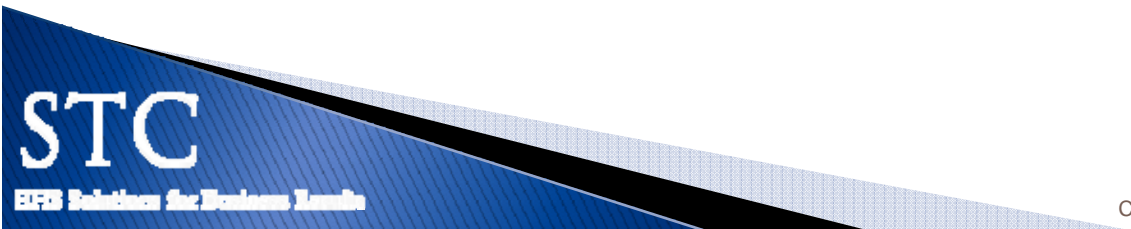
# Pause for...

- ▶ Questions?



# Initial Notification Requirements

- ▶ Existing sources must submit the Initial Notification (in 40 CFR 63.9) no later than July 25, 2011
- ▶ New sources were to submit the Initial Notification no later than 120 days after initial startup or November 20, 2008, whichever is later



# Notification of Compliance Status

- ▶ Existing sources must submit a Notification of Compliance Status on or before November 22, 2011
- ▶ New affected sources were to submit a Notification of Compliance Status within 120 days after initial startup, or by November 20, 2008, whichever is later



# Annual Certification and Compliance Reports

- ▶ The first Annual Certification and Compliance (AC&C) reporting period begins the day after the compliance date and ends on December 31
- ▶ Each subsequent AC&C report must cover the calendar year
- ▶ AC&C reports must be submitted no later than January 31 and kept in a readily-accessible location for inspector review
- ▶ If an exceedence has occurred during the year, the AC&C report must be accompanied by the exceedence report(s)

# Recordkeeping Requirements

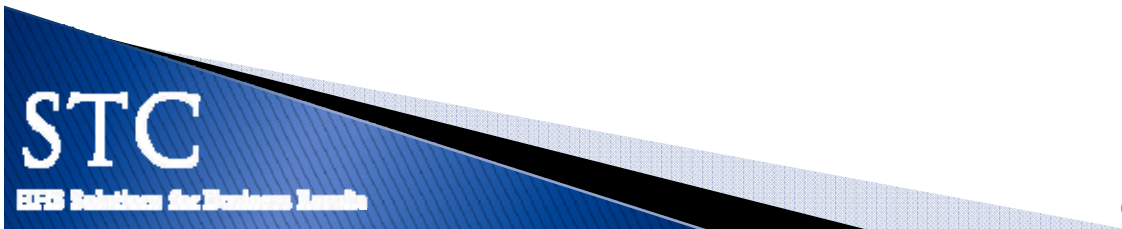
- ▶ 5-year retention period for records
- ▶ Each notification and report, and the documentation supporting each notification and report
- ▶ A listing of equipment subject to this rule, any changes to such equipment and the date they occurred
- ▶ Visual determination of fugitive emissions and/or opacity records
- ▶ Manufacturer's specifications for emissions control devices

# Recordkeeping Requirements, cont'd

- ▶ Spray painting operations:
  - Spray paint booth filters – maintain records of filter efficiency demonstrations and filter maintenance activities
  - Water curtains – maintain records of water curtain efficiency demonstrations
  - Maintain documentation of HVLP or other high transfer efficiency spray paint delivery systems, including the manufacturer's specifications and operation instructions
  - Worker training certifications (including contractors)

# Recordkeeping Requirements, cont'd

- ▶ Welding:
  - Emissions opacity records
  - Welding Management Plan
  - Manufacturer's instructions for fume control devices
  - Welding rod usage (rolling 12-month total)



# Enforcement Agency

- ▶ U.S. EPA or..
- ▶ Delegated state, local or tribal agency
- ▶ Contact the EPA Regional Office to find out which agency enforces this rule for a specific affected source – for Regional Office contacts go to:  
[http://www.epa.gov/ttn/atw/area/regional\\_contacts.pdf](http://www.epa.gov/ttn/atw/area/regional_contacts.pdf)

# Useful Information

- ▶ EPA has an Area Source Standards website with some useful information re this rule
- ▶ Go to: EPA Home/Air & Radiation/Technology Transfer Network/Air Toxics Web Site/Area Source Standards
- ▶ Example documents specific to Subpart XXXXXX:
  - Flow Chart of Requirements
  - SIC/NAICS Code Applicability Chart
  - Example Initial Notification
  - Example Notification of Compliance Status

# Pause for...

- ▶ Questions?



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# Thanks for Attending

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