

Clock Is Ticking for Curbed Emissions



Photo by Shirley Hu, Dreamstime.com

The finalization of the Foundry Area Source Rule for iron and steel casting facilities means that metalcasters should have a plan in place to comply.

Mike Blankestyn and Craig Schmeisser, RMT Inc., Madison, Wisconsin

The National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources (Foundry Area Source Rule), which the U.S. Environmental Protec-

tion Agency (EPA) finalized on Jan. 2, requires iron and steel casters to make a concerted effort to reduce their emissions over the course of the next few years and will monitor the progress through a series of compli-

ance dates and reporting plans.

The rule affects facilities that emit less than 10 tons per year of any single hazardous air pollutant (HAP) and less than 25 tons per year of any combination of HAPs (HAP minor sources).

Several compliance due dates are approaching in January 2009. Along with meeting the upcoming deadlines, you should be forming plans to meet further compliance dates in later months and years because the required changes could affect production at your operation.

This article identifies compliance dates, best practices and reporting requirements for minor source iron and steel metalcasting facilities under the Foundry Area Source Rule.

Small or Large Area Sources

Foundry Area Source Rule requirements depend on whether a casting facility is designated as large or small. An existing area source metalcaster is designated as small if the actual metal melt production for a calendar year is equal to 20,000 tons or less. A new area source metalcaster is designated as small if annual metal melting capacity is equal to 10,000 tons or less.

An "existing" metalcasting facility is classified as constructed or reconstructed prior to Sept. 17, 2007. A "new" metalcaster is defined as constructed on or after Sept. 17, 2007,

or reconstructed with expenditures exceeding 50% of the fixed cost of a comparable new casting plant.

For metalcasting facilities designated as small, the term "annual metal melt production" is used for the existing area source category. This term can be used interchangeably with "actual metal melted" for all furnaces at the site. On the other hand, for new area sources, the term "annual metal melting capacity" means the hourly melt rate of all melting furnaces multiplied by 8,760, unless melting rates or hours of operations are limited within a federally enforceable permit.

Table 1 provides a brief description of some of the more important work practice requirements, emissions limitations and reporting obligations and their due dates. The dates for the large casting facility requirements assume the initial size notification was made on Jan. 2, 2009.

The date of compliance with the metal melting emissions limitation is keyed off of the small versus large notification designation. Per 63.10881(a)(3), you must comply with emissions limitations no later than two years after being designated a large metalcasting facility.

So, if you make your designation as a large metalcaster earlier than Jan. 2,

2009, your compliance date and other subsequent dates are moved up. It is in a large company's best interest to submit the large designation on Jan. 2, 2009.

While the number of requirements was reduced for small metalcasters, substantial work practice and reporting requirements remain. Large area source companies must also comply with the small company requirements identified in Table 2.

Reports should be submitted to EPA

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Table 1. Summary of Important Area Source Requirements for Existing Metalcasters

Requirement	Summary of Requirement	Compliance Date
Initial Notification of Applicability	An initial notification of rule applicability must be submitted by the metalcasting facility owner or operator.	May 1, 2008
Pollution Prevention Management Practices for Binder Formulation	Furfuryl alcohol warmbox mold or coremaking lines must have binders with a chemical formulation that does not use methanol as a specific ingredient of the catalyst.	Jan. 2, 2009
Pollution Prevention Management Practices for Metallic Scrap	A scrap specification must be developed and made available to personnel responsible for scrap acquisition duties and scrap providers. In addition, each facility must comply with the restricted metallic scrap and/or the general iron and steel scrap requirement, which allows the use of metal ingots, pig iron, slitter or other materials that do not include post-consumer automotive body scrap, post-consumer engine blocks, post-consumer oil filters, oily turnings, lead components, chlorinated plastics or free liquids. The requirement includes the preparation of written material specifications for purchase and use of only iron and steel scrap that has been depleted of certain substances required by the rule.	Jan. 2, 2009
Metalcaster Size Designation Notification	A written notification must be submitted to the administrator that identifies the area source as a large or small metalcasting facility (i.e. metal melt production for calendar year is greater than 20,000 tons for a large company or less than 20,000 tons for a small company).	Jan. 2, 2009
Pollution Prevention Management Practices for Mercury	For scrap containing motor vehicle parts, the metalcaster must either create a site-specific plan for mercury switch removal or purchase scrap from a vendor that participates in an approved mercury program. The rule provides special considerations for motorvehicle scrap that is recovered for their specialty alloy content and not reasonably expected to contain mercury switches.	Jan. 4, 2010
Emission Limitations, Standards and Management Practices for Large Metalcasters	Large metalcasters must comply with furnace capture and collection system operation standard, furnace emissions standard, control device parameter operating limits, and the fugitive emissions standard.	Jan. 2, 2011
Initial Inspection of Each Melting Furnace Particulate Control Device for Large Metalcasters	Large metalcasters must conduct inspections of system ductwork and melting air pollution control devices, such as baghouses, wet scrubbers and electrostatic precipitators.	March 3, 2011
Intent to Use Previous Compliance Testing Data Notification for Large Metalcasters	For large metalcasting facilities, in order to use the results of a prior performance test to meet the area source rule testing requirements, a notification of intent must be submitted. The notification must contain a full copy of the performance test and information to demonstrate that either no process changes have been made since the test or the results of the test reliably demonstrate compliance despite some process changes.	March 3, 2011
Performance Testing to Demonstrate Initial Compliance with Applicable Emissions and Opacity Limits for Large Metalcasters	For large metalcasters, testing to demonstrate compliance with the furnace emissions limits and the building of fugitive opacity limits must be conducted and be repeated every five years and whenever changes to operating limits or processing is likely to increase HAP emissions. Testing to demonstrate compliance with the building fugitive opacity limits must be repeated every six months and whenever processing changes are likely to increase fugitive emissions.	July 1, 2011

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Table 2. Small and Large Metalcaster Work Practice and Reporting Requirements

Compliance Date	Compliance or Reporting Requirement	Rule Reference
May 1, 2008	Initial notification of applicability (R)	40 CFR 63.10890(b)
Jan. 2, 2009	Small or large metalcaster designation (R)	40 CFR 63.10880(f)
Jan. 2, 2009	Metallic scrap management practice (WP)	40 CFR 63.10881(a)(1)
Jan. 2, 2009	Elimination of methanol in furfuryl alcohol warm box binder system catalyst (WP)	40 CFR 63.10881(a)(1)
Feb. 1, 2009	Notification of compliance with metallic scrap and furfuryl alcohol catalyst methanol exclusion (R)	40 CFR 63.10890(c)
July 30, 2009	1 st semi-annual compliance (R)	40 CFR 63.10890(f) 40 CFR 63.10890(e)(3)(ii) 40 CFR 63.10899(c)* 40 CFR 63.10899(b)(2)(ii)*
Jan. 4, 2010	Mercury scrap management (WP)	40 CFR 63.10881(a)(2)
Jan. 30, 2010	2 nd semi-annual compliance (R)	40 CFR 63.10890(f) 40 CFR 63.10890(e)(3)(ii) 40 CFR 63.10899(c)* 40 CFR 63.10899(b)(2)(ii)*
Feb. 3, 2010	Notification of compliance with mercury scrap management (R)	40 CFR 63.10890(c)
July 30 (Semi-Annual)	Compliance with above requirements during applicable 1st semi-annual period (R)	40 CFR 63.10890(f) 40 CFR 63.10890(e)(3)(ii) 40 CFR 63.10899(c)* 40 CFR 63.10899(b)(2)(ii)*
Jan. 30 (Semi-Annual)	Compliance with above requirements during applicable 1st semi-annual period (R)	40 CFR 63.10890(f) 40 CFR 63.10890(e)(3)(ii) 40 CFR 63.10899(c)* 40 CFR 63.10899(b)(2)(ii)*

(WP) denotes work practices, (R) denotes reporting requirement

* Rule reference regarding semi-annual reporting for large metalcasters.

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Table 3. Large Metalcaster Emission Standards and Reporting Requirements

Compliance Date	Compliance or Reporting Requirement	Rule Reference
Jan. 2, 2011*	Compliance with emissions limitations associated with melting operations	40 CFR 63.10881(a)(3)
March 3, 2011*	Complete initial inspection of melting furnace particulate control device	40 CFR 63.10897(a)
March 3, 2011*	Intent to use previous compliance testing data (R)	40 CFR 63.10898(a)(2)
July 1, 2011*	Complete performance testing to demonstrate initial compliance with emissions and opacity limits	40 CFR 63.10898(a)
60 days following performance test	Notification of compliance status with emissions and opacity limits (R)	40 CFR 63.9(h)

(R) denotes reporting requirement.

* Dates shown assume a large metalcaster designation notification submitted on Jan. 2, 2009.

unless your state has gained approval to administer the rule. Given the limited number of approved state programs, it is easier to submit the reports to both your state and regional EPA office.

Emissions standards and additional reporting requirements that apply only to large metalcasters are provided in Table 3.

Other Requirements

Besides work practice standards, emissions standards and corresponding reporting requirements, large companies will be required to develop a plan for operation and maintenance of air pollution control devices. This includes startup, shutdown and malfunction plans, as well as site-specific test plans prior to performance tests.

For the first couple of years, the contents of the semi-annual compliance reports will change. For example, the first and second semi-annual compliance reports will only include statements regarding the compliance of the methanol elimination and the metallic scrap management requirement. The third semi-annual report will include a compliance statement associated with the mercury management requirement. *MC*

About the Authors

Mike Blankestyn is project engineer and Craig Schmeisser is business manager for RMT Inc., Madison, Wis.

For More Information

"Paying Green to Go Green," AFS Technical Dept., MODERN CASTING, August '08, p. 24.

"Metalcasting's Carbon Footprint," J. Schifo, MODERN CASTING, May '08, p. 32.



The HAPs list can be found at the U.S. Environmental Protection Agency (USEPA) Air Toxics Web Site

(www.epa.gov/ttn/atw/orig189.html).

The Foundry Area Source Rule can be found at www.epa.gov/ttn/atw/area/fr02ja08.pdf or at the American Foundry Society website (www.afsinc.org).



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