2.24a Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983

2.24.1a Applicability and Designation of Affected Facility

(a) The provisions of this source category are applicable to the following affected facilities in steel plants that produce carbon, alloy, or specialty steels: electric arc furnaces, argon-oxygen decarburization vessels, and dust-handling systems.

(b) The provisions of this subpart apply to each affected facility identified in paragraph (a) of this section that commences construction, modification, or reconstruction after August 17, 1983.

2.24.2a Emission Monitoring

(a) Except as provided under paragraphs (b) and (c) of this section, a continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) shall be installed, calibrated, maintained, and operated by the owner or operator subject to the provisions of this source category.

(b) Unless otherwise stipulated by the Director, no continuous monitoring system shall be required on any control device serving the dust-handling system.

(c) Unless otherwise stipulated by the Director, a continuous monitoring system for the measurement of opacity is not required on modular, multiple-stack, negative-pressure or positive-pressure fabric filters if observations of the opacity of the visible emissions from the control device are performed by a certified visible emission observer as follows: Visible emission observations are conducted at least once per day when the furnace is operating in the melting and refining period. These observations shall be taken in accordance with Method 9, and, for at least three 6-minute periods, the opacity shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emissions, only one set of three 6-minute observations will be required. In this case, Method 9 observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. Records shall be maintained of any 6-minute average that is in excess of the emission limit.

2.24.3a Monitoring of Operations

(a) The owner or operator subject to the provisions of this source category shall maintain records of the following information:

(1) All data obtained under paragraph (b) of this section; and

(2) All monthly operational status inspections performed under paragraph (c) of this section.

(b) Except as provided under paragraph (d) of this section, the owner or operator subject to the provisions of this subpart shall check and record on a once-per-shift basis the furnace static pressure (if DEC system is in use) and either (1) check and record the control system fan motor amperes and damper position on a once-per-shift basis; or 92) install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of $\pm$10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The Director may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of Appendix A.

(c) When the owner or operator of an affected facility is required to demonstrate compliance with the applicable control device emissions standards, or at any other time required by the Director, either the control system fan motor amperes and all damper positions or the volumetric flow rate through each separately ducted hood shall be determined during all periods in which a hood is operated for the purpose of capturing emissions from the affected facility subject to paragraph (b)(1) or (b)(2) of this section. The owner or operator may petition the Director for

reestablishment of these parameters whenever the owner or operator can demonstrate to the Director's satisfaction that the affected facility operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters as determined during the most recent demonstration of compliance shall be maintained at the appropriate level for each applicable period. Operation at other than baseline values may be subject to the requirements of paragraph 2.24.5a(c).

(d) The owner or operator shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture system (i.e., pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be noted and proper maintenance performed.

(e) The owner or operator may petition the Director to approve any alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system.

(f) If emissions during any phase of the heat time are controlled by the use of a DEC system, the owner or operator shall install, calibrate, and maintain a monitoring device that allows the pressure in the free space inside the EAF to be monitored. The monitoring device may be installed in any appropriate location in the EAF or DEC duct prior to the introduction of ambient air such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of ± 5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

(g) When the owner or operator of an EAF controlled by a DEC is required to demonstrate compliance with the applicable shop standard, and at any other time the Director may require, the pressure in the free space inside the furnace shall be determined during the melting and refining period(s) using the monitoring device required under paragraph (f) of this section. The owner or operator may petition the Director for reestablishment of the 15-minute integrated average of the pressure whenever the owner or operator can demonstrate to the Director's satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable. The pressure determined during the most recent demonstration of compliance shall be maintained at all times when the EAF is operating in a meltdown and refining period. Operation at higher pressures may be considered by the Director to be unacceptable operation and maintenance of the affected facility.

(h) During any performance test, and for any report required by the Director, the owner or operator shall monitor the following information for all heats covered by the test:

(1) Charge weights and materials, and tap weights and materials;

(2) Heat times, including start and stop times, and a log of process operation, including periods of no operation during testing and the pressure inside an EAF when direct-shell evacuation control systems are used;

(3) Control device operation log; and

(4) Continuous monitor or Reference Method 9 data.

2.24.4a Test Methods and Procedures

(a) During performance tests required in Section 1.2, the owner or operator shall not add gaseous diluents to the effluent gas stream after the fabric in any pressurized fabric filter collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

(b) When emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this source category but controlled by a common capture system and control device, the owner or operator shall use either or both of the following procedures during a performance test [see also §60.276a(e)*]:

(1) Determine compliance using the combined emissions.

(2) Use a method that is acceptable to the Director and that compensates for the emissions from the facilities not subject to the provisions of this source category.

(c) When emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this source category, the owner or operator shall demonstrate compliance with §60.272(a)(3)* based on emissions from only the affected facility(ies).

(d) In conducting the performance tests required in Section 1.2, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in Section 1.2(b).

(e) The owner or operator shall determine compliance with the particulate matter standards as follows:

(1) Method 5 shall be used for negative-pressure fabric filters and other types of control devices and Method 5D shall be used for positive-pressure fabric filters to determine the particulate matter concentration and volumetric flow rate of the effluent gas. The sampling time and sample volume for each run shall be at least 4 hours and 4.50 dscm (160 dscf) and, when a single EAF or AOD vessel is sampled, the sampling time shall include an integral number of heats.

(2) When more than one control device serves the EAF(s) being tested, the concentration of particulate matter shall be determined using the following equation:

$$C_{st} = \left[\sum_{i=1}^{n} (C_{si} Q_{sdi}) \right] / \sum_{i=1}^{n} Q_{sdi}$$

Where:

C_{st} = average concentration of particulate matter, mg/dscm (gr/dscf).

C_{si} = concentration of particulate matter from control device "i", mg/dscm (gr/dscf).

n = total number of control devices tested.

Q_{sdi} = volumetric flow rate of stack gas from control device "i", dscm/hr (dscf/hr).

(3) Method 9 and the procedures of Section 1.3 shall be used to determine opacity.

(4) To demonstrate compliance with §60.272a(a) (1), (3), and (3)*, the test runs shall be conducted concurrently, unless inclement weather interferes.

(f) To comply with §60.274a (c), (f), (g), and (h)*, the owner or operator shall obtain the information required in these paragraphs during the particulate matter runs.

2.24.5a Recordkeeping and Reporting Requirements

(a) Records of the measurements required by this section must be retained for at least 2 years following the date of the measurement.

(b) Each owner or operator shall submit a written report of exceedances of the control device opacity to the Director semi-annually. For the purposes of these reports, exceedances are defined as all 6-minute periods during which the average opacity is 3 percent or greater.

(c) Operation at a furnace static pressure that exceeds the value established under Section 2.24.3a(g) and either operation of control system fan motor amperes at values exceeding ±15 percent of the value established under Section 2.24.3a(c) or operation at flow rates lower than those established under Section 2.24.3a(c) may be considered by the Director to be unacceptable operation and maintenance of the affected facility. Operation at such values shall be reported to the Director semi-annually.

(d) [Reserved]

(e) When the owner or operator of an EAF or AOD is required to demonstrate compliance with the procedures under §2.24.4a(b)(2) or a combination of (b)(1) and (b)(2), the owner or operator shall obtain approval from the Director of the procedure(s) that will be used to determine compliance. Notification of the procedure(s) to be used must be postmarked 30 days prior to the performance test.

(f) The owner or operator shall conduct the demonstration of compliance and furnish the Director a written report of the results of the test. This report shall include the following information:

(1) Facility name and address;

(2) Plant representative;

(3) Make and model of process, control device, and continuous monitoring equipment;

(4) Flow diagram of process and emission capture equipment including other equipment or process(es) ducted to the same control device;

(5) Rated (design) capacity of process equipment;

(6) Those data required under §2.24.3a(h);

(i) List of charge and tap weights and materials;

(ii) Heat times and process log;

(iii) Control device operation log; and

(iv) Continuous monitor or Reference Method 9 data.

(7) Test dates and test times;

(8) Test company;

(9) Test company representative;

(10) Test observers from outside agency;

(11) Description of test methodology used, including any deviation from standard reference methods;

(12) Schematic of sampling location;

(13) Number of sampling points;

(14) Description of sampling equipment;

(15) Listing of sampling equipment calibrations and procedures;

(16) Field and laboratory data sheets;

(17) Description of sample recovery procedures;

(18) Sampling equipment leak check results;

(19) Description of quality assurance procedures;

(20) Description of analytical procedures;

(21) Notation of sample blank corrections; and

(22) Sample emission calculations.

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*Code of Federal Regulations, Title 40, Part 60.