

Chapter NR 254

**IRON AND STEEL MANUFACTURING**

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**NR 254.01 Purpose.** The purpose of this chapter is to establish effluent limitations, standards of performance, and pretreatment standards for discharges of process wastes from the iron and steel manufacturing category of point sources and subcategories thereof.

Note: The authority for promulgation of this chapter is set forth in ch. NR 205.

History: Cr. Register, August, 1976, No. 248, eff. 9-1-76.

**NR 254.02 Applicability.** The effluent limitations, standards of performance pretreatment standards, and other provisions in this chapter are applicable to pollutants or pollutant properties in discharge of process waste resulting from manufacture of the following process subcategories.

- (1) By product coke
- (2) Beehive coke
- (3) Sintering
- (4) Blast furnace, iron
- (5) Blast furnace, ferromanganese
- (6) Basic oxygen furnace, with semi-wet air pollution control
- (7) Basic oxygen furnace, with wet air pollution control
- (8) Open hearth furnace
- (9) Electric arc furnace, with semi-wet air pollution control
- (10) Electric arc furnace, with wet air pollution control
- (11) Vacuum degassing
- (12) Continuous casting

History: Cr. Register, August, 1976, No. 248, eff. 9-1-76.

**NR 254.03 Definitions.** The following definitions are applicable to terms used in this chapter. Definitions of other terms and meaning of abbreviations are set forth in ch. NR 205.

- (1) "By product coke" means the process of manufacturing coke by heating coal in slot type ovens in the absence of air.

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(2) "Beehive coke" means the process of manufacturing coke by heating coal in the presence of a controlled amount of air. There are no by product plants associated with such manufacture.

(3) "Sintering" means the process of heating iron bearing wastes (mill scale and dust from blast and steel-making furnaces) together with fine iron ore, limestone, and coke fines in an ignition furnace to produce an agglomerate for charging to a blast furnace.

(4) "Blast furnace, iron" means the process of manufacturing iron in which iron ore is reduced to molten iron in a blast furnace.

(5) "Blast furnace, ferromanganese" means the process of manufacturing iron in which iron/manganese ore is reduced to molten ferromanganese in a blast furnace.

(6) "Basic oxygen furnace, with semi-wet air pollution control" means the process of manufacturing carbon steel in basic oxygen furnaces equipped with a semi-wet dust collection system.

(7) "Basic oxygen furnace, with wet air pollution control" means the process of manufacturing carbon steel in basic oxygen furnaces equipped with a wet dust collection system.

(8) "Open hearth furnace" means the process of manufacturing carbon steel in an open hearth furnace equipped with a wet dust collection system.

(9) "Electric arc furnace, with semi-wet air pollution control" means the process of manufacturing carbon steel utilizing electric arc furnaces equipped with semi-wet dust collection systems.

(10) "Electric arc furnace, with wet air pollution control" means the process of manufacturing carbon steel utilizing electric arc furnaces equipped with wet furnace off-gas dust collection.

(11) "Vacuum degassing" means the degassing operations of applying a vacuum to molten steel to further refine the steel produced.

(12) "Continuous casting" means the operations in which steel is continuously cast.

(13) "Cyanide" means total cyanide.

(14) "CN-A" means those cyanides amenable to chlorination as described in Method B page 553, 1972 Annual Book of ASTM Standards. Copies of this publication are available for inspection at the office of the department of natural resources, the secretary of state's office, and the office of the revisor of the statutes, and may be obtained for personal use from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.

(15) "Indirect ammonia recovery system" means the production of concentrated ammonia liquor by scrubbing coke-oven gas using a countercurrent water wash rather than ammonia recovery utilizing a sulfuric acid ammonia absorber.

(16) "Product" means as appropriate coke, sinter, iron, ferromanganese, or steel.

(17) "Semi-wet" means, as associated with basic oxygen or electric furnaces, those systems which employ a spray chamber to spray water in excess of the amounts evaporated to condition furnace off-gases to a temperature where the fume and dusts can be removed by dry dust collection equipment.

(18) "Wet" means, as associated with basic oxygen or electric arc furnaces, those off-gas dust cleaning systems which use entirely wet gas cooling and dust removal operations to scrub contaminants from the off-gas and produce an aqueous discharge.

History: Cr. Register, August, 1976, No. 248, eff. 9-1-76.

**NR 254.04 Compliance with effluent limitations and standards.** Discharge of pollutants from facilities subject to the provisions of this chapter may not exceed, as appropriate:

(1) By July 1, 1977 effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available;

(2) By July 1, 1983 effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable;

(3) Pretreatment standards for discharges to publicly owned treatment works;

(4) Standards of performance for new sources.

History: Cr. Register, August, 1976, No. 248, eff. 9-1-76; r. and recr. Register, August, 1983, No. 332, eff. 9-1-83.

**NR 254.05 Modification of effluent limitations.** (1) Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available may be modified in accordance with this section.

(2) An individual discharger or other interested person may submit evidence to the department that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the effluent limitations. On the basis of such evidence or other available information the department will make a written determination that such factors are or are not fundamentally different for that facility compared to those specified in the Steel Making Development Document, EPA 440/1-74-024-a. If such fundamentally different factors are found to exist, the department shall establish for the discharge effluent limitations in the WPDES permit either more or less stringent than the limitations in this chapter, to the extent dictated by such fundamentally different factors. Such limitations must be approved by EPA which may approve, disapprove, or specify other limitations.

(3) Copies of this Development Document, "Steel Making," EPA 440/1-74-024-a. published June, 1974, are available for inspection at the office of the department of natural resources, the secretary of state's office, and the office of the revisor of the statutes, and may be obtained for personal use from the Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20460.

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History: Cr. Register, August, 1976, No. 248, eff. 9-1-76.

**NR 254.06 Application of effluent limitations and standards.** (1) The effluent limitations and standards set forth in this chapter shall be used in accordance with this section to establish the quantity or quality of pollutants or pollutant properties which may be discharged by a point source subject to the provisions of this chapter, except as;

(a) They may be modified in accordance with s. NR 254.05,

(b) They may be superseded by more stringent limitations and standards necessary to achieve water quality standards or meet other legal requirements, or

(c) They may be supplemented or superseded by standards or prohibitions for toxic pollutants or by additional limitations for other pollutants required to achieve water quality.

(2) The production basis for application of the limitations and standards set forth in this chapter shall be the daily average of a maximum month for the facility in each subcategory subject to the provisions of this chapter.

(3) For by product coke facilities utilizing desulfurization units or the indirect ammonia recovery process, consideration of such factors as the total cost of control technology in relation to effluent reduction benefits, the age of equipment, the process employed, the engineering aspects of control technology application, and process changes will require an increase of the effluent limitations set forth in this chapter.

(a) For by product coke plants utilizing desulfurization units the limitations specified in this chapter may be increased by reason of the increased effluent volume generated by such units up to 15% for the BPT limitations of table 1 and up to 25% for the BAT and standards of performance limitations of table 2.

(b) For by product coke plants utilizing the indirect ammonia recovery process the limitations specified in this chapter may be increased by reason of the increased effluent volume generated by this process up to 30% for the BPT limitations of table 1 and up to 70% for the BAT and standards of performance limitations of table 2.

History: Cr. Register, August, 1976, No. 248, eff. 9-1-76.

**NR 254.10 Effluent limitations, best practicable treatment.** The following effluent limitations for all or specific subcategories when applied in accordance with s. NR 254.06 establish, except as provided in s. NR 254.05, the quantity or quality of pollutants or pollutant properties which may be discharged by a facility subject to the provisions of this chapter after application to process wastes of the best practicable control technology currently available.

(1) For subcategories (2), (6), and (9) identified in s. NR 254.02 there shall be no discharge of process wastes.

(2) The pH of all discharges shall be within the range of 6.0 to 9.0.

(3) The 30-day average limitations for BOD<sub>5</sub>, suspended solids, and other parameters are set forth in table 1 in lbs/1000 lbs. or kg/1000kg. of

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product. Daily maximum limitations are 3 times the 30-day average limitations.

TABLE 1  
BPT EFFLUENT LIMITATIONS

Subcategory <sup>1</sup>	Susp. Solids	Oil & Grease	Ammonia	Cyanide	Phenol
(1)	.0365	.0109	.0912	.0219	.0015
(3)	.0104	.0021			
(4)	.0260		.0651	.0078	.0021
(5)	.1043		.5212	.1563	.0208
(7)	.0104				
(8)	.0104				
(10)	.0104				
(11)	.0052				
(12)	.026	.0078			

Note: (1) As identified in s. NR 254.02

History: Cr. Register, August, 1976, No. 248, eff. 9-1-76.

NR 254.11 Effluent limitations, best available treatment. The following effluent limitations for all or specific subcategories when applied in accordance with s. NR 254.06 establish the quantity or quality of pollutants or pollutant properties which may be discharged by a facility subject to the provisions of this chapter after application to process wastes of the best available technology economically achievable.

(1) For subcategories (2), (6), and (9) identified in s. NR 254.02 there shall be no discharge of process wastes.

(2) The pH of all discharges shall be within the range of 6.0 to 9.0.

(3) The 30-day average limitations for BOD<sub>5</sub>, suspended solids, and other parameters are set forth in tables 2 and 3 in lbs/1000 lbs. or kg/1000 kg. of product. Daily maximum limitations are 3 times the 30-day average limitations except as noted in table 2.

TABLE 2  
BAT AND STANDARDS OF PERFORMANCE EFFLUENT LIMITATIONS

Subcategory <sup>1</sup>	Susp. Solids	Oil & Grease	Ammonia	Cyanide	Phenol	Sulfide	Fluoride	Manganese
(1)	.0104	.0042	.0042	.0001	.0002	.0001		
(3)	.0052	.0021				.00006	.0042	
(4)	.0130		.0052	.00013*	.00026*	.00016	.0104	
(5)	.0260		.0104	.00026*	.00052*	.0003		.0052
(7)	.0052						.0042	
(12)	.0052	.0052						

Note: (1) As identified in s. NR 254.02

\*Round off to 4 places after multiplying by 3 for daily maximum.

TABLE 3  
BAT AND STANDARDS OF PERFORMANCE EFFLUENT LIMITATIONS

Subcategory <sup>1</sup>	Susp. Solids	Fluoride	Nitrate	Manganese	Lead	Zinc
(8)	.0052	.0042	.0094*			.001
(10)	.0026	.0042				.001
(11)	.0026		.0047*	.0005	.00005	.0005

Note: (1) As identified in s. NR 254.02

\*Nitrate limitations are for BAT limitations only

History: Cr. Register, August, 1976, No. 248, eff. 9-1-76.

**NR 254.12 Standards of performance.** The following effluent limitations for all or specific subcategories when applied in accordance with s. NR 254.06 establish the quantity or quality of pollutants or pollutant properties which may be discharged by a facility which is a new source subject to the provisions of this chapter.

(1) For subcategories (2), (6), and (9) identified in s. NR 254.02 there shall be no discharge of process wastes.

(2) The pH of all discharges shall be within the range of 6.0 to 9.0.

(3) The 30-day average limitations for BOD<sub>5</sub>, suspended solids and other parameters are set forth in tables 2 and 3 in lbs/1000 lbs. or kg/1000 kg. of product. The daily maximum limitations are 3 times the 30-day average limitations.

History: Cr. Register, August, 1976, No. 248, eff. 9-1-76.

**NR 254.13 Pretreatment standards.** The pretreatment standards for discharges to publicly owned treatment works from sources subject to the provisions of this chapter shall be as set forth in ch. NR 211.

History: Cr. Register, August, 1976, No. 248, eff. 9-1-76; r. and recr. Register, August, 1983, No. 332, eff. 9-1-83.