Title 40—Protection of the Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER N—EFFLUENT GUIDELINES AND STANDARDS

[FRL 334-7]

PART 424—FERROALLOYS MANUFACTURING POINT SOURCE CATEGORY

Interim Regulations

Notice is hereby given that effluent limitations and guidelines for existing sources set forth in interim final form below are promulgated by the Environmental Protection Agency (EPA). On February 22, 1974, EPA promulgated a regulation adding Part 424 to Chapter 40 of the Code of Federal Regulations (39 FR 6806). That regulation with subsequent amendments established effluent limitations and guidelines for existing sources and standards of performance and pretreatment standards for new sources for the ferroalloy manufacturing point source category. The regulation set forth below will amend 40 CFR Part 424—ferroalloy manufacturing point source category by adding thereto effluent limitations and guidelines for existing sources for the covered calcium carbide furnaces with wet air pollution control devices subcategory (Subpart D), the other calcium carbide furnaces subcategory (Subpart E), the electrolytic manganese products subcategory (Subpart F) and the electrolytic chromium subcategory (Subpart G) pursuant to sections 301, 304 (b) and (c), of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251, 1311; 1314 (b) and (c), 86 Stat. 816 et seq.; Pub. L. 92-500) (the Act). Simultaneously, the Agency is publishing in proposed form standards of performance for new point sources and pretreatment standards for existing sources and for new sources.

Regulations for uncovered (open) calcium carbide furnaces have been promulgated under Part 415, inorganic chemicals manufacturing point source category (39 FR 9612), and the regulation herein is intended to be complementary to that for inorganic chemicals.

(a) *Legal Authority.* Section 301(b) of the Act requires the achievement by not later than July 1, 1977, of effluent limitations for point sources, other than publicly owned treatment works, which require the application of the best practicable control technology currently available as defined by the Administrator pursuant to section 304(b) of the Act. Section 301(b) also requires the achievement by not later than July 1, 1983, of effluent limitations for point sources, other than publicly owned treatment works, which require the application of best available technology economically achievable which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants, as determined in accordance with regulations issued by the Administrator pursuant to section 304(b) of the Act.

Section 304(b) of the Act requires the Administrator to publish regulations providing guidelines for effluent limitations setting forth the degree of effluent reduction attainable through the application of the best practicable control technology currently available and the degree of effluent reduction attainable through the application of the best control measures and practices achievable including treatment techniques, process and procedural innovations, operating methods and other alternatives. The regulation herein sets forth effluent limitations and guidelines, pursuant to sections 301 and 304(b) of the Act, for the covered calcium carbide furnaces with wet air pollution control devices subcategory (Subpart D), the other calcium carbide furnaces subcategory (Subpart E), the electrolytic manganese products subcategory (Subpart F) and the electrolytic chromium subcategory (Subpart G) of the ferroalloy manufacturing point source category.

Section 304(c) of the Act requires the Administrator to issue to the States and appropriate water pollution control agencies information on the processes, procedures or operating methods which result in the elimination or reduction of the discharge of pollutants to implement standards of performance under section 306 of the Act. The reports or "Development Documents" referred to below provide, pursuant to section 304(c) of the Act, information on such processes, procedures or operating methods.

Section 306 of the Act requires the achievement by new sources of a Federal standard of performance providing for the control of the discharge of pollutants which reflects the greatest degree of effluent reduction which the Administrator determines to be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants. Section 307(c) of the Act requires the Administrator to promulgate pretreatment standards for new sources at the same time that standards of performance for new sources are promulgated pursuant to section 306. Section 307(b) of the Act requires the establishmen of pretreatment standrards for pollutants introduced into publicly owned treatment works and 40 CFR 128 establishes that the Agency will propose specific pretreatment standards at the time effluent limitations are established for point source discharges. In another section of the FEDERAL REGISTER regulations are proposed in fulfillment of these requirements.

(b) *Summary and Basis of Proposed Effluent Limitations and Guidelines for Existing Sources and Standards of Performance and Pretreatment Standards for New Sources*—(1) *General methodology.* The effluent limitations and guidelines set forth herein were developed in the following manner. The point source category was first studied for the purpose of determining whether separate limitations are appropriate for different segments within the category. This analysis included a determination of whether differences in raw material used, product produced, manufacturing process employed, age, size, waste water constituents and other factors require development of separate limitations for different segments of the point source category. The raw waste characteristics for each such segment were then identified. This included an analysis of the source, flow and volume of water used in the process employed, the sources of waste and waste waters in the operation and the constituents of all waste water. The constituents of the waste waters which should be subject to effluent limitations were identified.

The control and treatment technologies existing within each segment were identified. This included an identification of each distinct control and treatment technology, including both in-plant and end-of-process technologies, which is existent or capable of being designed for each segment. It also included an identification of, in terms of the amount of constituents and the chemical, physical, and biological characteristics of pollutants, the effluent level resulting from the application of each of the technologies. The problems, limitations and reliability of each treatment and control technology were also identified. In addition, the nonwater quality environmental impact, such as the effects of the application of such technologies upon other pollution problems, including air and solid waste were identified. The energy requirements of each control and treatment technology were determined as well as the cost of the application of such technologies.

The information, as outlined above, was then evaluated in order to determine what levels of technology constitute the "best practicable control technology currently available." In identifying such technologies, various factors were considered. These included the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application, the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, nonwater quality environmental impact (including energy requirements) and other factors.

The data upon which the above analysis was performed included EPA permit applications, EPA sampling and inspections, consultant reports, and industry submissions.

(2) *Summary of conclusions with respect to the covered calcium carbide furnaces with wet air pollution control devices subcategory (Subpart D), the other calcium carbide furnaces subcategory (Subpart E), the electrolytic managanese products subcategory (Subpart F), and the electrolytic chromium subcategory (Subpart G), of the ferroalloy manufacturing point source category*—(i) *Categorization.* For purposes of establishing effluent limitations and standards of performance, the calcium carbide and electrolytic ferroalloys segments of the ferroalloys industry were divided into sub-

categories on the basis of water uses, waste control technologies, and wastewater constituents. The subcategories are: covered calcium carbide furnaces with wet air pollution control devices (Subpart D); other calcium carbide furnaces (Subpart E); electrolytic manganese products (Subpart F); and electrolytic chromium (Subpart G).

This method of subcategorization permits a discharge for those covered calcium carbide furnaces controlled for air pollution with wet systems and is not excessively permissive to those furnaces which are controlled with dry systems or which have no discharge of process waste water.

Subcategorization of the electrolytic ferroalloys segment is based largely upon the wastewater constituents present and the treatment necessary for the removal of those constituents.

(ii) *Waste characteristics.* The known significant pollutants contained in waste water from calcium carbide manufacture are suspended solids, with cyanide also present in the waste waters from covered furnaces. The pollutants present in waste waters resulting from the manufacture of electrolytic ferroalloys are suspended solids and ammonia. Manganese is found to some extent in the wastes from all electrolytic products, while chromium is found only in the wastes resulting from chromium production. Additionally, the wastewaters from calcium carbide or electrolytic ferroalloys production may be highly acidic or alkaline.

While other pollutants, such as dissolved solids, iron, aluminum, zinc, chloride, copper, etc., sometimes may be present in the process waste waters, effluent limitations were not developed for these constituents because (i) they are discharged intermittently and in small quantities, (ii) they are effectively removed from the effluent by the application of waste water control and treatment technology required for the removal of process waste water constituents which are the subject of effluent limitations, (iii) there is insufficient data available upon which to base effluent limitations, or (iv) the known methods for their removal from waste water are prohibitively expensive at this time.

(iii) *Origin of waste water pollutants.*—(1) *Covered calcium carbide furnaces with wet air pollution control devices subcategory:* Wet air cleaning devices collect particulates from furnace gases by gas scrubbing. In the covered type of furnace, the off-gases contain about 70% carbon monoxide and smaller quantities of cyanide. Waste water from these sources, therefore, contains large quantities of suspended solids and smaller quantities of cyanide. Since some of the particulate matter trapped in the gas is lime from the smelting process, the waste water is at a high pH.

(2) *Other calcium carbide furnaces subcategory.* Air pollution control in this category may be by baghouses in conjunction with evaporative cooling, or nonexistent, and little water pollution potential exists, except as runoff or leachate from the landfilled particulate if the furnace gases are cleaned.

(3) *Electrolytic manganese products subcategory.* All three electrolytic ferroalloys are produced by very similar processes. The process generally involves leaching the metal from ores, ferroalloys or slag from ferroalloy production, purification of the leach solution, platting of the product and final product preparation. Ammonia is used in the production of electrolytic manganese and chromium, but not for that of manganese dioxide. Although there are other differences between the processes, they are of limited importance insofar as the raw waste is concerned and the similarities are more striking than the differences.

Water is used extensively, both for preparation of the electrolyte and for washing the finished metal. Some small quantity of electrolyte may be present in the wastewaters, and some plants hydraulically transport leach and other filter residues to tailings ponds. Electrolytic manganese plants appear to have two waste streams—one is a highly concentrated stream and the other is (relatively) dilute. The first stream, hereinafter referred to as strong electrolytic manganese wastes, derives from the hydraulic transport of filter residues to tailings ponds and also contains the small quantity of electrolyte solution which is spilled or dumped. As a result, wastewaters may contain several thousand mg/l of suspended solids, manganese and ammonia, and may also be at a low pH. The second waste stream is fairly dilute and will be hereafter called the weak electrolytic manganese wastes. This derives from product washing and other miscellaneous water uses. This waste stream, although the flow may be considerable, only contains a few hundred mg/l of suspended solids, manganese and ammonia.

The manganese dioxide plant surveyed had one waste stream, which was generally comparable to the weak electrolytic manganese wastes, except that the suspended solids concentrations were higher and the ammonia concentration lower.

(4) *Electrolytic chromium subcategory.* As in the electrolytic manganese products subcategory, water is used extensively and the resulting wastewaters contain several thousand mg/l of chromium, suspended solids and ammonia and are at a low pH. Because of process economics, hexavalent chromium is reduced to trivalent chromium as an integral part of the process and only very small quantities appear in the wastewater. Manganese also appears in appreciable quantities.

(iv) *Treatment and control technology.* Waste water treatment and control technologies have been studied for each subcategory of the industry to determine what is the best practicable control technology currently available.

(1) *Treatment in the covered calcium carbide furnaces with wet air pollution control devices subcategory.* Control and treatment techniques consist of physical/chemical treatment to remove suspended solids, destroy cyanide and lower the pH. Cyanide destruction can be accomplished by alkaline chlorination, followed by neutralization and clarification in settling ponds (or lagoons), in clarifiers or in sand or multi-media filters. Settling ponds and clarifiers, when well designed and operated, are capable of producing effluent levels of 25 mg/l suspended solids, independent of influent concentrations. Sand filters (when well designed and operated) are capable of reducing the suspended solids effluent concentrations to 10 mg/l. In all types of clarification equipment, proper operation is important, since (for example) excessive solids buildup in a lagoon can reduce the detention time and thereby reduce the quantity of solids which are removed.

Cyanide destruction can be accomplished by alkaline chlorination, although other methods such as oxidation or ozonation may be used depending on the design of the water treatment system. Alkaline chlorination can reduce the effluent cyanide concentration to about 0.2 mg/l.

The best practicable control technology currently available has been determined to be use of a clarifier flocculator and chemical treatment, the latter by alkaline chlorination and neutralization. The best available control technology economically achievable consists of the use of best practicable control technology currently available, plus use of sand or multi-media filters. The best available demonstrated control technology, processes, operating methods, or other alternatives for new sources consists of recirculation of scrubber waste water, and treatment of blowdown by best available control technology economically achievable.

(2) *Treatment in the other calcium carbide furnaces subcategory.* Use of a fabric filter or baghouse for air cleaning reduces waste water discharge to zero. This subcategory is presently achieving no discharge of process waste water. The best practicable control technology currently available, the best available control technology economically achievable and the best available demonstrated control technology, processes, operating methods, or other alternatives for new sources consists of the use of dry dust collection devices.

(3) *Treatment in the electrolytic manganese products subcategory.* Treatment at the present time is largely by settling lagoons, although oxidation or evaporation ponds are also used. Control and treatment techniques available consist of physical/chemical treatment to remove suspended solids, manganese and ammonia, and neutralize the acidity. Manganese removal is facilitated by raising the pH of the wastewater to 9.5 or higher, at which point the manganese is precipitated. Clarification-flocculation will then remove both suspended solids and manganese. Ammonia removal may be accomplished by either stripping or breakpoint chlorination. Choice of the particular method depends largely upon concentrations and volume to be treated. Relatively dilute wastewaters may be more economically treated by chlorinating, while with small quantities of stronger wastes steam stripping (and the recovery of ammonia which may be used in the process) may be preferable. Although ammonia can be destroyed by bi-

ological treatment, the cost of this method (and also for steam stripping of the weak wastes) appears to make it unfeasible economically for this subcategory at this time. After treatment for manganese or ammonia, the wastewater should be neutralized to render it suitable for discharge.

The best practicable control technology currently available for the weak electrolytic manganese wastewater stream has been determined to be use of alkaline precipitation of manganese, clarification-flocculation and neutralization for discharge: and for the strong electrolytic manganese wastewater stream, complete recirculation after clarification. Best practicable control technology currently available for electrolytic manganese dioxide has been determined to be the same treatment as for the weak electrolytic manganese wastes. The best available control technology economically achievable for electrolytic manganese wastes consists of the use of best practicable control technology currently available, plus partial recirculation of treated wastewater, plus breakpoint chlorination of the portion to be discharged. Best available control technology economically achievable for electrolytic manganese dioxide wastes has been determined to be the same as for the weak electrolytic manganese wastes. Best available demonstrated control technology, processes, operating methods, or other alternatives for new sources producing electrolytic manganese consists of the limitation, through design, of the quantity of wastewater discharged, mechanical transport of filter residues and the use of best practicable control technology currently available and breakpoint chlorination. The best available demonstrated control technology, processes, operating methods, or other alternatives for new sources for electrolytic manganese dioxide wastes has been determined to be the same as for best available control technology economically achievable.

(4) *Treatment in the electrolytic chromium subcategory.* Techniques are identical to those for electrolytic manganese products, with the exception that chromium, in addition to manganese, must be removed. Removal of chromium is facilitated at about pH 8.0.

The best practicable control technology currently available has been determined to be alkaline precipitation of chromium and manganese, clarification-flocculation, breakpoint chlorination and neutralization. The best available control technology economically achievable consists of the use of best practicable control technology currently available, plus partial recirculation of treated wastewater. The best available demonstrated control technology, processes, operating methods, or other alternatives for new sources consists of the limitation, through design, of the quantity of wastewater discharged, mechanical transport of filter residues and the use of best practicable control technology currently available.

The proper management of solid wastes resulting from pollution control systems must be practiced. Pollution control technologies generate many different amounts and types of solid wastes and liquid concentrates through the removal of pollutants. These substances vary greatly in their chemical and physical composition and may be either hazardous or non-hazardous. A variety of techniques may be employed to dispose of these substances depending on the degree of hazard.

If thermal processing (incineration) is the choice for disposal, provisions must be made to ensure against entry of hazardous pollutants into the atmosphere. Consideration should also be given to recovery of materials of value in the wastes.

For those waste materials considered to be nonhazardous where land disposal is the choice for disposal, practices similar to proper sanitary landfill technology may be followed. The principles set forth in the EPA's Land Disposal of Solid Wastes Guidelines 40 CFR Part 241 may be used as guidance for acceptable land disposal techniques.

For those waste materials considered to be hazardous, disposal will require special precautions. In order to ensure long-term protection of public health and the environment, special preparation and pretreatment may be required prior to disposal. If land disposal is to be practiced, these sites must not allow movement of pollutants to either ground or surface waters. Sites should be selected that have natural soil and geological conditions to prevent such contamination or, if such conditions do not exist, artificial means (e.g. liners) must be provided to ensure long-term protection of the environment from hazardous materials. Where appropriate, the location of solid hazardous materials disposal sites should be premanently recorded in the appropriate office of the legal jurisdiction in which the site is located.

(v) *Cost estimates for control of waste water pollutants.* In the calcium carbide segment, only the plants within Subpart D will incur any costs in meeting the proposed limitations. All plants within Subpart E are presently achieving zero discharge and therefore will not be impacted by that limitation.

It is estimated that the cost of meeting the best practicable control technology currently available limitations will cost less than $10,000 for the covered calcium carbide subcategory. The unit price of pollution control is estimated at a maximum of $0.19 per metric ton. Additional annual costs are estimated to be $0.02 per metric ton for Subpart D. For 1983, it is estimated that additional pollution control costs will total about $168,000 in investment for Subpart D, or a maximum of $0.88 per metric ton. Additional annual costs will amount to a maximum of $0.26 per metric ton.

The use of best practicable control technology for the electrolytic manganese products subcategory will cost the industry about 1.8 percent of the sales price of this commodity. Investment costs per ton are estimated at $29.79 for electrolytic manganese and $23.40 for electrolytic manganese dioxide. Annual costs are estimated at $12.42 per ton for electrolytic manganese and $9.75 per ton for manganese dioxide. The investment cost for the electrolytic chromium subcategory is estimated to be $90.71 per ton and the total annual cost $37.81 per ton. Although the annual cost per ton for chromium is high, it represents less than 1 percent of the sales price of this metal.

The cost of the application of the best available technology economically achievable is estimated to be an additional $8.51 per ton for electrolytic manganese and $7.11 per ton for manganese dioxide for investment costs. The additional annual costs are estimated at $3.55 per ton for electrolytic manganese and $2.97 for manganese dioxide. The additional investment and annual costs per ton for electrolytic chromium are estimated to be $8.96 and $3.74 respectively. These costs will be borne to the greatest degree by older, isolated plants, i.e., those plants which do not have another electrolytic or similar process with which the wastes could be combined to achieve overall cost reductions.

(vi) *Energy requirements and non-water quality environmental impacts.* Energy requirements for operation of water pollution control systems are estimated to be less than 0.1 percent of the power required for the production of calcium carbide.

For the electrolytic ferroalloys segment, the energy requirements are estimated to be less than 1 percent of the production power requirements for the electrolytic manganese products subcategory and less than 2 percent for the electrolytic chromium subcategory.

(vii) *Economic impact analysis.* The general conclusion of the economic impact analysis is that the guidelines will have little economic impact on the industries in question. Estimated incremental capital costs for both BPCTCA and BATEA compliance amount to less than 1 percent of 1973 net earnings for each of these industries in question while combined incremental operating costs per ton of product will be less than three percent of current selling prices in each case. All of the firms operating in these industries are large, financially strong enterprises well able to respond to the guidelines without danger to their basic stability and growth. It should be noted in this connection that the demand for ferroalloys is derived from the demand for other products in which they constitute relatively minor inputs. Furthermore, there are no close substitutes in most cases, except for calcium carbide. Consequently, the elasticity of demand for these products is relatively low, indicating that the modest cost increases generated by compliance with the guidelines can be passed on without significant consequences in terms of reduced demand and employment. Since the ferroalloys in question are relatively minor inputs to their consumer industries, it also follows that insignificant internal and external impacts are to be anticipated for the consumer industries.

No plant closures or reductions in production and employment are anticipated.

The reports entitled "Development Document for Interim Final Effluent Limitations Guidelines and Proposed New Source Performance Standards for the Calcium Carbide Segment of the Ferroalloy Manufacturing Point Source Category" and "Development Document for Interim Final Effluent Limitations Guidelines and Proposed New Source Performance Standards for the Electrolytic Ferroalloys Segment of the Ferroalloy Manufacturing Point Source Category" detail the analysis undertaken in support of the interim final regulation set forth herein and are available for inspection in the EPA Freedom of Information Center, Room 204, West Tower, Waterside Mall, Washington, D.C., at all EPA regional offices, and at State water pollution control offices. A supplementary analysis prepared for EPA of the possible economic effects of the regulation is also available for inspection at these locations. Copies of these documents are being sent to persons or institutions affected by the proposed regulation or who have placed themselves on a mailing list for this purpose (see EPA's Advance Notice of Public Review Procedures, 38 FR 21202, August 6, 1973). An additional limited number of copies of these reports are available. Persons wishing to obtain a copy may write the EPA Office of Public Affairs, Environmental Protection Agency, Washington, D.C. 20460, Attention: Ms. Ruth Brown, A-107.

When this regulation is promulgated in final rather than interim form, revised copies of the Development Documents will be available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Copies of the economic analysis document will be available through the National Technical Information Service, Springfield, VA 22151.

(c) *Summary of public participation.* Prior to this publication, the agencies and groups listed below were consulted and given an opportunity to participate in the development of effluent limitations, guidelines and standards proposed for the ferroalloys manufacturing category. All participating agencies have been informed of project developments. Initial drafts of the Development Documents was sent to all participants and comments were solicited on that report. The following are the principal agencies and groups consulted: (1) Effluent Standards and Water Quality Information Advisory Committee (established under section 515 of the Act); (2) all State and U.S. Territory Pollution Control Agencies; (3) Ohio River Valley Water Sanitation Commission; (4) New England Interstate Water Pollution Control Commission; (5) Delaware River Basin Commission; (6) Conservation Foundation; (7) Businessmen for the Public Interest; (8) Environmental Defense Fund, Inc.; (9) Natural Resources Defense Council; (10) The American Society of Civil Engineers; (11) Water Pollution Control Federation; (12) National Wildlife Federation; (13) The American Society of Mechanical Engineers; (14) the Manufacturing Chemists Association; and (15) The Ferroalloys Association.

The following responded with comments: the Delaware River Basin Commission, the Manufacturing Chemists Association, the New York State Department of Environmental Conservation, the Illinois Environmental Protection Agency, the Michigan Department of Environmental Resources, Foote Mineral Company, Kerr-McGee Corporation, Union Carbide Corporation and the Ferroalloys Association.

The primary issues raised in the development of the proposed, effluent limitations guidelines and standards of performance and the treatment of these issues herein are as follows:

1. The industry requested that calcium carbide be placed within the ferroalloy industry (rather than the inorganic chemicals industry) for regulation. It was also requested that the standards be written on the basis of pollutant per megawatt hour of furnace power consumption, rather than pollutant per ton of product.

Since the manufacturing process characteristics are similar for ferroalloys and calcium carbide production, those calcium carbide furnaces not included in the inorganic chemicals effluent guidelines have been included in the ferroalloys manufacturing category for the issuance of effluent limitations. Open (uncovered) furnaces are regulated in the inorganic chemicals guidelines and duplication would be pointless. There is a limited justification for expressing the limitations on the basis of furnace power (i.e., megawatt-hours) rather than on production tonnage. Furnace power was used as the basis for the first group of ferroalloy regulations because this was simpler and more consistent within the categories than was tonnage. Power consumption can also be related to production of a specific alloy, so that by knowing power usage, tonnages of the various alloys can be calculated. Within the calcium carbide sector, however, power usage is a relatively uniform 2.9 mwhr/kkg (2.6 mwhr/ton), whereas in the alloy segment power usage may range from 2.6 mwhr/kkg (2.4 mwhr/ton) for ferromanganese to 15.4 mwhr/kkg (14.0 mwhr/ton) for silicon metal. Because of this relatively constant power usage and the lack of other than very generalized data regarding power usage for calcium carbide production, while specific data is available regarding tonnage, production tonnage is presently the better basis for the limitations.

2. It was remarked that the effluent limitations as presented in the contractor's report for covered carbide furnaces are more stringent than the effluent limitations promulgated for covered ferroalloy furnaces contained in Subpart B of this regulation. It was also noted that the covered carbide subcategory would require no discharge for new sources whereas Subpart B does permit some discharge.

That the limitations are more stringent for covered carbide furnaces than for covered ferroalloy furnaces is based upon the respective water uses for the two types. Water use per megawatt-hour for the only calcium carbide plant presently discharging was found to be approximately one-third that of ferroalloy furnaces with similar scrubbers. Although some consideration was given to including covered carbide furnaces within the scope of Subpart B, this would allow higher levels of pollutant discharge than would a separate standard. The proposed new source standard for covered carbide furnaces has been revised to allow for discharge of treated blowdown from scrubber recirculation systems, since some plants may not be able to utilize the carbon monoxide content of the furnace off-gas for the fuel value without using wet gas cleaning methods and may be unable to evaporate the wastewater.

3. It was noted that although ammonia and sulfate were included in a list of pollutant parameters for electrolytic ferroalloys, no limits had been set for these in the contractor's draft report. One person suggested that aluminum be deleted as a parameter.

Although ammonia was not limited in the contractor's suggested guidelines, the standards do limit this parameter. Waste data and information relating to treatment are included in the Development Document. No limitation will be placed on sulfate, since the cost of removal would be prohibitive for this industry at this time. Additionally, no limits are proposed for either aluminum or iron. Aluminum is present in large quantities only from electrolytic manganese dioxide production and survey data indicates that it precipitates with the suspended solids and reaches an acceptable level in the discharge. Iron is present in discharges from all three products. However, iron precipitates most readily at or above pH 8.0, indicating that treatment for manganese and/or chromium removal will also control iron.

4. Some commenters criticized the contractor's attempt to apply the effluent concentrations attainable for metals in steel mill pickling rinse waters as a basis for the guidelines for electrolytic wastes. It was pointed out that the two wastes are not comparable, since pickling rinse water is relatively dilute and electrolytic wastes are fairly concentrated.

It is agreed that the two wastes are not totally comparable, and the report and guidelines have been rewritten to reflect this.

5. Concern was expressed about the small difference between the contractor's suggested 1977 and 1983 electrolytic ferroalloy limitations when compared to the very large difference in costs. One person noted that his plant would be spending $6/lb of manganese removed for 1977, but fifty times that ($318/lb Mn removed) for 1983.

The costs presented in the contractor's report were based upon actual plant data and may have been either insufficiently or overly inclusive of items relevant to water pollution control and treatment. Costs for the treatment models have been estimated and it is thought that the cost data, as presented in the revised report, is more reflective of actual costs which would be incurred for treatment at isolated plants. Based on the revised cost data and guidelines, treatment for the 1983 standards will remove approximately half the dischargeable 1977 load at a total cost one-third higher than for the 1977 standards. The 1983 removal cost would be about 6¢ per pound of manganese removed.

6. It was thought that the discharge levels suggested in the contractor's report for electrolytic plants for dissolved chromium and dissolved manganese (3.0 and 1.5 mg/l, respectively) were too high to meet water quality standards.

Water quality standards are not a basis for effluent guidelines, which are based on economic and technological achievability. The Act contemplates that additional treatment may be necessary to meet water quality standards on some particular stream segments. For purposes of establishing a national standard, EPA has confined itself to essentially conventional treatment, which for chromium can reduce concentrations to below 0.5 mg/l as total chromium. Manganese can be removed to low levels by various methods, most of which are primarily applicable to the low inlet concentrations found at water treatment plants. Precipitation by lime addition and pH adjustment can reduce effluents to less than 5.0 mg/l as total manganese.

7. It was requested that the 1977 standards for electrolytic manganese be based upon the best plant.

The 1977 standards are to be based on the average of the best plants, also taking into account economic and other factors that impact on actual achievability. The standards for 1983 are to be based on the best available technology economically achievable. Although the best plant in each subcategory was discharging at lower rates than the flow on which the standards for 1983 were formulated, it is the opinion of the Agency that these low levels could not be achieved across-the-board by this industry without economic dislocations and therefore, are not economically achievable.

Moreover, Plant B, which had the lowest discharge from electrolytic mangantse production, is only 6 years old. This plant was designed to minimize waste discharge. During a visit by EPA, plant personnel noted that they could probably not meet or even come close to their present conditions if their plant were some years older (as are Plants A and C). Plant D, a new plant, is presently discharging from their chromium operation at about 2 percent of the rate of Plant A, again reflecting differences due to age (and to some extent, geographical location).

8. Electrolytic industry commenters stated that the data is inadequate, incomplete and does not support the standards recommended by the contractor.

Internal review revealed some deficiencies within the document and further testing was performed and additional data collected. It is now believed that the data base is as adequate and complete as possible and is supportive of the suggested standards.

9. One commenter mentioned that in his experience, lime neutralization does not precipitate manganese readily or in significant quantities from dilute solutions.

Although simple neutralization, i.e., to a pH around 7.0, does not appreciably remove manganese, a pH of 9.5 or greater will cause the dissolved manganese to form as manganese hydroxide and precipitate. Additionally the manganese level suggested is more easily attainable if the wastes are not diluted prior to treatment with wastes from other operations.

The Agency is subject to an order of the United States District Court for the District of Columbia entered in *Natural Resources Defense Council* v *Train et. al.* (Cv. No. 1609-73) which requires the promulgation of regulations for this industry category no later than December 30, 1974. This order also requires that such regulations become effective immediately upon publication. In addition, it is necessary to promulgate regulations establishing limitations on the discharge of pollutants from point sources in this category so that the process of issuing permits to individual dischargers under section 402 of the Act is not delayed.

It has not been practicable to develop and publish regulations for this category in proposed form, to provide a 30 day comment period, and to make any necessary revisions in light of the comments received within the time constraints imposed by the court order referred to above. Accordingly, the Agency has determined pursuant to 5 USC 553(b) that notice and comment on the interim final regulations would be impracticable and contrary to the public interest. Good cause is also found for these regulations to become effective immediately upon publication.

Interested persons are encouraged to submit written comments. Comments should be submitted in triplicate to the EPA Office of Public Affairs, Environmental Protection Agency, Washington, D.C. 20460, Attention: Ms. Ruth Brown, A-107. Comments on all aspects of the regulation are solicited. In the event comments are in the nature of criticisms as to the adequacy of data which are available, or which may be relied upon by the Agency, comments should identify and, if possible, provide any additional data which may be available and should indicate why such data are essential to the amendment or modification of the regulation. In the event comments address the approach taken by the Agency in establishing an effluent limitation or guideline EPA solicits suggestions as to what alternative approach should be taken and why and how this alternative better satisfies the detailed requirements of sections 301 and 304(b) of the Act.

A copy of all public comments will be available for inspection and copying at the EPA Freedom of Information Center, Room 204, West Tower Waterside Mall, 401 M Street, S.W., Washington D.C. A copy of preliminary draft contractor reports, the Development Documents and economic study referred to above, and certain supplementary materials supporting the study of the industry concerned will also be maintained at this location for public review and copying. The EPA information regulation, 40 CFR Part 2, provides that a reasonable fee may be charged for copying.

All comments received on or before March 26, 1975 will be considered. Steps previously taken by the Environmental Protection Agency to facilitate public response within this time period are outlined in the advance notice concerning public review procedures published on August 6, 1973 (38 FR 21202). In the event that the final regulation differs substantially from the interim final regulation set forth herein the Agency will consider petitions for reconsideration of any permits issued in accordance with this interim final regulation.

In consideration of the foregoing, 40 CFR Part 424 is hereby amended by adding Subparts D, E, F, and G as set forth below.

Dated: February 10, 1975.

RUSSELL E. TRAIN,
Administrator.

424.63 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

Subpart G—Electrolytic Chromium Subcategory

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AUTHORITY: Secs. 301, 304(b) and (c), Federal Water Pollution Control Act, as amended (33 U.S.C. 1251, 1311, 1314(b) and (c), 86 Stat. 816 et seq.; Pub. L. 92-500.

Subpart D—Covered Calcium Carbide Furnaces With Wet Air Pollution Control Devices Subcategory

§ 424.40 Applicability; description of the covered calcium carbide furnaces with wet air pollution control devices subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of calcium carbide in covered electric furnaces which use wet air pollution control devices. This subcategory includes those electric furnaces of such construction or configuration (known as covered, closed, sealed, semi-covered or semi-closed furnaces) that the furnace off-gases are not burned prior to collection and cleaning, and which off-gases are cleaned after collection in a wet air pollution control device such as a scrubber, 'wet' baghouse, etc. This subcategory does not include noncontact cooling water or those furnaces which utilize dry dust collection techniques, such as dry baghouses.

§ 424.41 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

§ 424.42 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) 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 guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations. The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available:

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
(Metric units) kg/kkg of product		
TSS	0.380	0.190
Total Cyanide	0.0056	0.0028
pH	Within the range 6.0 to 9.0.	
(English units) lb/1000 lb of product		
TSS	0.380	0.190
Total Cyanide	0.0056	0.0028
pH	Within the range 6.0 to 9.0.	

§ 424.43 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best available technology economically achievable:

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
(Metric units) kg/kkg of product		
TSS	0.22	0.11
Total Cyanide	0.0056	0.0028
pH	Within the range 6.0 to 9.0.	
(English units) lb/1000 lb of product		
TSS	0.22	0.11
Total Cyanide	0.0056	0.0028
pH	Within the range 6.0 to 9.0.	

Subpart E—Other Calcium Carbide Furnaces Subcategory

§ 424.50 Applicability; description of the other calcium carbide furnaces subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of calcium carbide in those covered furnaces which do not utilize wet air pollution control methods. Covered calcium carbide furnaces using wet air pollution control devices are regulated in Subpart D. Open (uncovered) calcium carbide furnaces are regulated in Part 415, inorganic chemicals manufacturing point source category (39 FR 9612).

§ 424.51 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

§ 424.52 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) 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 guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations. The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available: there shall be no discharge of process waste water pollutants to navigable waters.

§ 424.53 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of the best available technology economically achievable: there shall be no discharge of process waste water pollutants to naviagable waters.

Subpart F—Electrolytic Manganese Products Subcategory

§ 424.60 Applicability; description of the electrolytic manganese products subcategory.

The provisions of this subpart are applicable to discharges resulting from the manufacture of electrolytic manganese products such as electrolytic manganese metal or electrolytic manganese dioxide.

§ 424.61 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

§ 424.62 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) 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 guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart producing electrolytic manganese after application of the best practicable control technology currently available:

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
(Metric units) kg/kkg of product		
TSS	6.778	3.389
Manganese	2.771	1.356
Ammonia-N	40.667	20.334
pH	Within the range 6.0 to 9.0.	
(English units) lb/1000 lb of product		
TSS	6.778	3.389
Manganese	2.771	1.356
Ammonia-N	40.667	20.334
pH	Within the range 6.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart producing electrolytic manganese dioxide after application of the best practicable control technology currently available:

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
(Metric units) kg/kkg of product		
TSS	1.762	0.881
Manganese	0.705	0.352
Ammonia-N	10.574	5.287
pH	Within the range 6.0 to 9.0.	
(English units) lb/1000 lb of product		
TSS	1.762	0.881
Manganese	0.705	0.352
Ammonia-N	10.574	5.287
pH	Within the range 6.0 to 9.0.	

§ 424.63 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart producing electrolytic manganese after application of the best available technology economically achievable:

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
(Metric units) kg/kkg of product		
TSS	3.389	1.695
Manganese	0.678	0.339
Ammonia-N	6.778	3.389
pH	Within the range 6.0 to 9.0.	
(English units) lb/1000 lb of product		
TSS	3.389	1.695
Manganese	0.678	0.339
Ammonia-N	6.778	3.389
pH	Within the range 6.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart producing electrolytic manganese dioxide after application of the best available technology economically achievable:

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed
(Metric units) kg/kkg of product		
TSS	0.881	0.441
Manganese	0.176	0.088
Ammonia-N	1.762	0.881
pH	Within the range 6.0 to 9.0.	
(English units) lb/1000 lb of product		
TSS	0.881	0.441
Manganese	0.176	0.088
Ammonia-N	1.762	0.881
pH	Within the range 6.0 to 9.0.	

Subpart G—Electrolytic Chromium Subcategory

§ 424.70 Applicability; description of the electrolytic chromium subcategory.

The provisions of this subpart are applicable to discharges resulting from the manufacture of chromium metal by the electrolytic process. They are not applicable to discharges resulting from the manufacture of chromium metal by aluminothermic or other methods.

§ 424.71 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

§ 424.72 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) 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 guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations. The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available:

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
(Metric units) kg/kkg of product		
TSS	5.276	2.633
Manganese	2.111	1.055
Chromium	0.106	0.053
Ammonia-N	10.553	5.276
pH	Within the range of 6.0 to 9.0.	
(English units) lb/1000 lb of product		
TSS	5.276	2.633
Manganese	2.111	1.055
Chromium	0.106	0.053
Ammonia-N	10.553	5.276
pH	Within the range 6.0 to 9.0.	

§ 424.73 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best available technology economically achievable:

Effluent characteristic	Effluent limitations	
	Maximum for any one day	Average of daily values for thirty consecutive days shall not exceed—
(Metric units) kg/kkg of product		
TSS	2.649	1.324
Manganese	0.530	0.265
Chromium	0.053	0.027
Ammonia-N	5.297	2.649
pH	Within the range 6.0 to 9.0.	
(English units) lb/1000 lb of product		
TSS	2.649	1.324
Manganese	0.530	0.265
Chromium	0.053	0.027
Ammonia-N	5.297	2.649
pH	Within the range 6.0 to 9.0.	

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