Board adopted its policies relating to its amicus curiae authority under Section 502 of the Rehabilitation Act. The policies provide that the General Counsel of the A&TBCB be delegated authority to review requests for the A&TBCB to participate as amicus curiae in litigation.

EFFECTIVE DATE: May 16, 1980.

FOR FURTHER INFORMATION CONTACT: Mr. Charles D. Goldman, Office of General Counsel, Architectural and Transportation Barriers Compliance Board, 330 C Street, SW, Washington, D.C. 20201 (202/245-1801).

SUPPLEMENTARY INFORMATION:

Pursuant to Section 502 of the Rehabilitation Act of 1973, Public Law 93-112, 87 Stat. 391, as amended, the Architectural and Transportation Barriers Compliance Board (A&TBCB) established at its meeting on May 16, 1980 policies relating to the authority of the A&TBCB Executive Director to appear as amicus curiae.

Section 502(d)(2) states that the Executive Director is authorized, at the direction of the A&TBCB, "to intervene, appear, and participate, or to appear as amicus curiae, in any court of the United States or in any court of a State in court actions which relate to this section or to the Architectural Barriers Act of 1968."

The amicus curiae policies provide that all requests for the A&TBCB to participate as amicus curiae be forwarded to the A&TBCB General Counsel for review. The General Counsel is also delegated authority to reject any request for the A&TBCB to participate as amicus curiae; provided that the General Counsel shall promptly report such decision to the Executive Director who shall notify the Executive Committee. The Executive Committee shall report the matter to the A&TBCB.

The General Counsel shall forward any request to the Executive Committee for the A&TBCB to participate as amicus curiae which the General Counsel believes should be approved by the A&TBCB. The A&TBCB also delegated the Executive Committee authority to direct the Executive Director to appear as amicus curiae in civil actions. The Executive Committee may, in its discretion, bring this matter to the A&TBCB for its decision.

Since these are general statements of policy of the A&TBCB, the relevant provisions of the Administrative Procedure Act (5 U.S.C. § 553) requiring notice of proposed rulemaking, opportunity for public participation and delay in effective date are inapplicable.

The A&TBCB amends Part 1151 by adding a new § 1151.2 as follows:

§ 1151.2 Amicus Curiae Policies.

(a) *Applicability.* This section sets forth policies and procedures for the A&TBCB to participate as amicus curiae in litigation.

(b) *Definition.* As used in this section, the term amicus curiae means to intervene, appear and participate, or to appear as amicus curiae, in any court of the United States or in any court of a State in civil actions.

(c) *Requests for Amicus Curiae.* All requests for the A&TBCB to participate as amicus curiae shall be forwarded to the General Counsel for review. The General Counsel will consider, along with other factors, several major factors in each case prior to making a decision:

(1) the issues raised in the case;

(2) the court in which the case is pending;

(3) the adequacy of the record in the lower courts pertaining to the issues; and

(4) the policy of the A&TBCB on the matter in issue.

Each request shall include all information necessary for the General Counsel to make a decision on the request. The General Counsel shall obtain such other information as is appropriate or necessary.

(d) *Decisions of the General Counsel.*

(1) If the General Counsel rejects a request for the A&TBCB to participate as amicus curiae, he/she shall promptly notify such decisions to the Executive Director who shall notify the Executive Committee of the A&TBCB. The Executive Committee shall report to the A&TBCB.

(2) If the General Counsel does not reject the request, it shall be forwarded to the Executive Committee for its decision, along with any recommendations the General Counsel may wish to make. At the same time, the General Counsel shall forward copies of such requests to the Chairpersons of the other appropriate A&TBCB committees. The General Counsel's submission shall include the pertinent background information.

(3) The Executive Committee will promptly consider such requests and notify the General Counsel of its decision, or may, in its discretion, bring the matter to the A&TBCB for its decision.

(4) Upon recommendation of either the Executive Committee or the A&TBCB, the General Counsel shall proceed to prepare and file amicus briefs consistent with any guidelines or recommendations set forth by those bodies.

Dated: June 24, 1980.

(29 U.S.C. § 792; Pub. L. 93-112 as amended by Pub. L. 95-602)

Max Cleland,

Chairperson, Architectural and Transportation Barriers Compliance Board.

[FR Doc. 80-19359 Filed 7-1-80; 8:45 a.m.]

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 421

[FRL 1521-5]

Nonferrous Metals Manufacturing Point Source Category; Effluent Limitations Guidelines for Existing Sources

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: This rule promulgates final effluent limitations guidelines for existing primary copper smelting operations, primary copper electrolytic refining operations, and metallurgical acid plants. This final regulation amends an interim final regulation which was promulgated on February 27, 1975 (40 FR 8513), and represents the degree of control achievable by the application of the best practicable control technology currently available (BPT). These guidelines are issued under Sections 301 and 304 of the Clean Water Act, 33 USC §§ 1311 and 1314, and are intended to restrict the discharge of pollutants into the Nation's waters.

EFFECTIVE DATE: August 1, 1980.

FOR FURTHER INFORMATION CONTACT: Ernst P. Hall, Effluent Guidelines Division (WH-552), Environmental Protection Agency, 401 M St. SW., Washington, D.C. 20460. (202) 426-2566.

SUPPLEMENTARY INFORMATION:

Organization of This Notice

I. Legal Authority

The regulation described in this notice is promulgated under authority of sections 301 and 304 of the Clean Water Act, 33 U.S.C. 1311 and 1314 (the "Act").

II. Background Information

The Interim Final Regulations

On February 27, 1975, EPA promulgated an interim final regulation (40 FR 8513) for the nonferrous metals manufacturing point source category, including the primary copper smelting and primary copper refining subcategories of the primary copper industry.

A. Primary Copper Smelting

The interim final regulation for the Primary Copper Smelting Subcategory (Subpart D) applied to discharges from primary copper smelters and primary copper refineries when refining is performed on-site at a primary copper smelter. The regulation prohibited the discharge of process wastewater pollutants into navigable water from these sources, except that:

1. A properly designed, constructed, and operated facility could discharge, regardless of effluent quality, a specific volume of process wastewater resulting from a 10 year-24 hour or larger rainfall event; and

2. During any calendar month, a discharge of process wastewater was permitted equal in volume to the difference between precipitation and evaporation during that month. Discharges under this exception were required to achieve specific effluent concentrations. 40 CFR 421.42(b), (c), and (d).

B. Primary Copper Refining

The interim final regulation for the primary copper refining subcategory (Subpart E) applied to discharges from primary copper refineries not located on-site with a primary copper smelter.

Facilities located in areas of net evaporation were prohibited from discharging process wastewater pollutants, subject to the same exceptions applying to smelters. 40 CFR 421.52(a), (b), (c), and (d). Facilities located in areas of net precipitation were permitted a continuous discharge subject to mass-based limitations. 40 CFR 421.52(d).

Concurrently with its promulgation, EPA solicited public comments on the interim final regulation with the view to possible revisions in light of the comments received.

On the basis of the comments and data submitted, EPA has decided to amend the interim final regulation with respect to the primary copper smelting and refining subcategories. The major regulatory changes are described below, and a summary of the comments received is set forth in Appendix B, Summary of Public Participation.

III. Summary of Major Changes

Based on its review of comments received on the interim final BPT regulation and on additional information discussed in Appendix A, Technical Data, the Agency has made the following major changes to the interim final regulation:

1. The subcategorization has been revised to increase the number of subcategories from two to three. The new subcategories are Primary Copper Smelting; Metallurgical Acid Plants; and Primary Electrolytic Copper Refining (covering all electrolytic refining operations, whether or not they are located on-site with a smelter). A thorough discussion of the reasons for this new subcategorization is contained in Appendix A, Technical Data.

2. For two subcategories—refineries and acid plants—the regulation will permit a continuous discharge subject to effluent limitations. The effluent limitations are based on treatment of the wastewater by lime-and-settle technology. In some cases, addition of chemical flocculants, which are commonly used in this industry, may be necessary to enhance settling and achieve the BPT limitations. For the revised primary copper smelting subcategory, the requirement for zero discharge of pollutants has been maintained.

3. The interim final regulation established concentration-based effluent limitations in some instances; the final effluent limitations (other than the zero discharge requirement for smelters) now establish mass-based limitations in all cases.

These mass limitations are derived, however, from pollutant concentration values obtained at a well run lime-and-settle treatment system located at a smelter, refinery, acid plant, and ore concentrating complex. This is the same facility on which the interim final pollutant concentration values were based. When the interim final regulation was promulgated, this treatment facility was just coming on line; consequently, the interim final limitations were based on estimated pollutant concentrations achievable by this system rather than on actual measured concentrations. Review of long term monitoring conducted at this facility since promulgation of interim final regulation has led to an adjustment of the pollutant concentration levels used as a basis for today's regulation.

The following table identifies the changes in concentrations used to calculate the new mass based limitations:

Pollutant	1 day maximum value (mg/l)		30 day average maximum value (mg/l)	
	Interim final	Final	Interim final	Final
Total copper	0.5	0.95	0.25	0.4
Total cadmium	1.0	0.03	0.5	0.015
Total lead	1.0	0.3	0.5	0.13
Total zinc	10	0.6	5	0.15

A discussion of the establishment of these limitations appears in Appendix A, Technical Data.

4. The regulation substantially alters the manner in which climate—specifically, precipitation—is to be considered. Under the interim final regulation, refineries not located on-site with a smelter were subject to different requirements depending on their location in net evaporation or net precipitation areas.

If located in net evaporation areas, these facilities were subject to a zero discharge requirement; however, facilities meeting certain design capacity requirements could discharge, regardless of effluent quality, a volume of water falling within the impoundment in excess of the 10 year-24 hour storm, when a storm of at least that magnitude occurred. Further, these refineries could discharge once per month, subject to concentration-based effluent limitations, a volume of water equal to the difference between precipitation and evaporation in that month. This water could be discharged all at once, constituting a "slug" discharge.

In contrast, refineries not located on-site with a smelter and located in net precipitation areas were permitted a continuous discharge, subject to mass-based effluent limitations.

Refineries located on-site with a smelter were prohibited from discharging process wastewater pollutants in any amount (subject to the 10 year-24 hour storm and net monthly precipitation exceptions discussed previously).

Further, the interim final regulation included all acid plants in the smelter subcategory, and hence subjected them to the zero discharge requirement except in the event of a 10 year-24 hour storm or when monthly precipitation exceeded evaporation. These provisions applied irrespective of location.

The final regulation permits a continuous process wastewater discharge from all refineries and acid plants, regardless of location, subject to mass based effluent limitations. This eliminates the need for provisions allowing a monthly discharge when monthly precipitation exceeds

evaporation. These final effluent limitations are based on the use of mechanical clarifiers rather than the large evaporative impoundments contemplated by the interim final regulation. Even if treatment is provided by ponds rather than clarifiers, the area required to treat and discharge this wastewater will be much smaller than that required to evaporate it. Consequently, today's regulation also eliminates the need for exemptions for a 10 year-24 hour or other precipitation event. (It should be noted that neither the interim final nor the final regulations provide an exemption for storm runoff which enters a treatment or impoundment facility; the storm exemptions apply only to precipitation falling directly within the impoundment area).

In contrast, the Agency has retained the zero discharge requirement and the 10 year-24 hour storm exemption for the smelting subcategory. There is, however, no need to retain the monthly slug discharge allowance for smelters. All except three smelters presently combine smelter wastewater with refinery and/or acid plant wastewater. These combined facilities will be allowed a continuous discharge commensurate with the wastewater volumes attributable to the refinery and acid plant waste streams, and this continuous "bleed" obviates the need for monthly slug discharges. Company-supplied data show that the remaining three smelters without on-site acid plants or refineries do not need a monthly discharge because they never discharge smelter process wastewater. Two of these operations depend on evaporation to achieve zero discharge, and the third reuses its process wastewaters as partial make-up water in its mill concentrator operation. Long term rainfall and evaporation records for the location of the first two operations confirm that a monthly discharge will not be necessary.

The Agency recognizes that where an acid plant and refinery exist on-site with a smelter, an operator may continue to combine waste streams from these sources in one large impoundment area, as was often done previously. In such cases, the 10 year-24 hour storm exemption will apply to that impoundment facility in its entirety.

It should be emphasized that the 10 year-24 hour storm exemption applies only to the volume of water falling within the impoundment area. Thus, as was the case under the previous regulation, the operator is expected to divert storm runoff away from the impoundment; all storm runoff permitted to enter an impoundment must be retained, and will not be given the benefit of the catastrophic storm exemption.

5. The final regulation allows for the commingling of waste streams from smelter, refinery and acid plant waste streams for combined treatment or discharge; however, the regulation requires that the total quantity of pollutants discharged may not exceed the sum of the individual discharges from each source. If an operator commingles waste streams from one or more sources covered by this regulation with waste streams from sources not covered by this regulation, then the permit writer must establish the discharge requirements for that facility using these limitations as building blocks. Under the zero discharge requirement for smelters, no allowance can be made for process wastewater pollutants from smelter operations.

IV. Variances and Modifications

Upon promulgation of this regulation, the effluent limitations for the appropriate subcategory must be applied in all federal and state NPDES permits thereafter issued to point source discharges. The only exception to the limitations is EPA's "fundamentally different factors" variance. See *E. I. duPont de Nemours and Co. v. Train*, 430 U.S. 112 (1977); *Weyerhaeuser Co. v. Costle*, 11 ERC 2149 (D.C. Cir. 1978). This variance recognizes factors concerning a particular discharger which are fundamentally different from the factors which the Agency considered in this rulemaking. Although this variance clause was set forth explicitly in the interim final regulation, it is now included in EPA's NPDES regulation and will not be repeated in the regulation promulgated today. See 44 FR at 32950, §§ 125.30 *et seq.* (June 7, 1979).

The Environmental Protection Agency has determined that this regulation does not require a regulatory analysis under Executive Order 12044.

Dated: June 26, 1980.

Douglas M. Costle,
Administrator.

V. Part 421—Nonferrous Metals Point Source Category

40 CFR Part 421, is amended as follows:

1. By adding the following to the table of contents:

Subpart I—Metallurgical Acid Plants

Sec.
421.90 Applicability; description of the metallurgical acid plant subcategory.
421.91 Specialized definitions.
421.92 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

2. By amending Subparts D and E and adding a new subpart I as follows:

Subpart D—Primary Copper Smelting Subcategory

Subpart D is amended by revising §§ 421.40, 421.41, and 421.42 to read as follows:

§ 421.40 Applicability; description of the primary copper smelting subcategory.

The provisions of this subpart apply to process wastewater discharges resulting from the primary smelting of copper from ore or ore concentrates. Primary copper smelting includes, but is not limited to, roasting, converting, leaching if preceded by a pyrometallurgical step, slag granulation and dumping, fire refining, and the casting of products from these operations.

§ 421.41 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 apply to this subpart.

(b) In the event that the waste streams covered by this subpart are combined for treatment or discharge with waste streams covered by Subparts E—Primary Electrolytic Copper Refining and/or Subpart I—Metallurgical Acid Plants, the quantity of each pollutant or pollutant property discharged shall not exceed the quantity of each pollutant or pollutant property which could be discharged if each waste stream were discharged separately.

(c) For all impoundments constructed prior to the effective date of the interim final regulation (40 FR 8513), the term "within the impoundment," when used to calculate the volume of process wastewater which may be discharged, means the water surface area within the impoundment at maximum capacity plus the surface area of the inside and outside slopes of the impoundment dam as well as the surface area between the outside edge of the impoundment dam and any seepage ditch adjacent to the dam upon which rain falls and is returned to the impoundment. For the purpose of such calculations, the surface area allowances set forth above shall not exceed more than 30 percent of the water surface area within the impoundment dam at maximum capacity.

(d) For all impoundments constructed on or after the effective date of the

interim final regulation (40 FR 8513), the term "within the impoundment," for purposes of calculating the volume of process wastewater which may be discharged, means the water surface area within the impoundment at maximum capacity.

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

(a) Except as provided in 40 CFR 125.30–.32 and paragraph (b) of this section, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT): There shall be no discharge of process wastewater pollutants to navigable waters.

(b) A process wastewater impoundment which is designed, constructed, and operated so as to contain the precipitation from the 10 year-24 hour rainfall event as established by the National Climatic Center, National Oceanic and Atmospheric Administration, for the area in which such impoundment is located may discharge that volume of process wastewater which is equivalent to the volume of precipitation that falls within the impoundment in excess of that attributable to the 10 year-24 hour rainfall event, when such event occurs.

Subpart E—Primary Electrolytic Copper Refining Subcategory

Subpart E is amended by revising §§ 421.50, 421.51, 421.52 to read as follows:

§ 421.50 Applicability; description of the primary electrolytic copper refining subcategory.

The provisions of this subpart apply to process wastewater discharges resulting from the electrolytic refining of primary copper, including, but not limited to, anode casting performed at refineries which are not located on-site with a smelter, product casting and by-product recovery.

§ 421.51 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 apply to this subpart.

(b) The term "product" means electrolytically refined copper.

(c) In the event that the waste streams covered by this subpart are combined for treatment or discharge with waste streams covered by Subpart D—Primary Copper Smelting and/or Subpart I—Metallurgical Acid Plants, the quantity of each pollutant or pollutant property discharged shall not exceed the quantity of each pollutant or pollutant property which could be discharged if each waste stream were discharged separately.

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

Except as provided in 40 CFR 125.30–.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	(Metric units, kg/kkg of product; English units, lb/1,000 lb of product)	
Total Suspended Solids	0.100	0.050
Total Copper	0.0017	0.0008
Total Cadmium	0.00006	0.00003
Total Lead	0.0006	0.00026
Total Zinc	0.0012	0.0003
pH	Within the range of 6.0 to 9.0	

Subpart I—Metallurgical Acid Plants Subcategory

§ 421.90 Applicability; description of the metallurgical acid plants subcategory.

The provisions of this subpart apply to process wastewater discharges resulting from or associated with the manufacture of by-product sulfuric acid at primary copper smelters, including any associated air pollution control or gas-conditioning systems for sulfur dioxide off-gasses from pyrometallurgical operations.

§ 421.91 Specialized definitions.

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

(b) The term "product" means 100 percent equivalent sulfuric acid, H_2SO_4 capacity.

(c) In the event that the waste streams covered by this subpart are combined for treatment or discharge with waste streams covered by Subpart D—Primary Copper Smelting and/or Subpart E—Primary Electrolytic Refining, the quantity of each pollutant or pollutant property discharged shall not exceed the quantity of each pollutant or pollutant property which could be discharged if each waste stream were discharged separately.

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

Except as provided in 40 CFR 125.30–.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT):

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed—
	(Metric units, kg/kkg of product; English units, lb/1,000 lb of product)	
Total Suspended Solids	0.304	0.152
Total Copper	0.005	0.002
Total Cadmium	0.00018	0.00009
Total Lead	0.0018	0.00079
Total Zinc	0.0036	0.0009
pH	Within the range of 6.0 to 9.0	

VI. Appendices.—Appendix A (Technical Data)

The interim final regulation established two subcategories (Subpart D—Primary Copper Smelting and Subpart E—Primary Copper Refining) which covered the major primary copper operations of smelting, electrolytic refining and acid plants. The primary copper smelting subcategory covered primary smelting operations and any acid plant and refinery operations done on site with the smelting operation. The primary copper refining subcategory covered refining operations at facilities which did not have smelters located on site. For reasons discussed below, the Agency has determined that it is more appropriate to impose separate effluent limitations for each of these three sources regardless of plant location.

To determine proper subcategorization and identify appropriate BPT technology for the final regulation, the Agency has reviewed all data including that received since promulgation of the interim final regulation. Of primary importance were new data submitted by individual copper smelting and refining facilities. In 1977, EPA sent data collection portfolios (DCP's) to all copper smelting and refining companies; all these companies

responded with information concerning all twenty-three facilities covered by this regulation.

Review of this material warrants the following conclusions:

1. Acid plants and electrolytic refinery operations both produce wastewater. If these facilities are located in geographical areas where solar evaporation is not a viable alternative for wastewater disposal, then discharge of these wastewaters may be necessary.

2. In contrast, because the smelting process is a net water consumer and because of greater opportunities to reuse smelter process wastewater, smelting operations can and do achieve zero discharge of pollutants, irrespective of location and climate.

3. Effluent limitations based on the same subcategorization used in the interim final regulation would be too lenient for those smelters operating either alone or in conjunction with an on-site acid plant but without an electrolytic refinery located on-site. Establishing separate effluent limitations for smelters, refineries, and acid plants ensures the maximum feasible BPT pollution reduction for each wastewater source.

The subcategories established today are therefore, based on the individual unit operations of copper smelting, metallurgical acid plants, and electrolytic refining. In order to determine appropriate National Pollutant Discharge Elimination System (NPDES) permit effluent limitations using this subcategorization, the permit writers will independently calculate the allocation for each unit process located at the facility, based on the permissable allocation for each source.

This final regulation is based largely upon new data which substantially expand and update the original data base. The flow parameters and effluent pollutant concentrations used to establish effluent limitations are discussed below in relation to each subcategory.

(1) Subpart D—Primary Copper Smelting Subcategory

This subcategory covers all operations associated with copper smelting, including the basic processes of roasting, converting, leaching (if preceded by a pyrometallurgical step such as roasting), slag processing, fire refining, and casting of products from these operations.

The final regulation for this subcategory prohibits discharge of pollutants to navigable waters, subject to an exemption for large precipitation events. Facilities which combine the wastewaters from this subcategory with other waste streams for combined treatment will receive no allowance for smelter wastewater pollutants.

The primary sources of wastewater from smelters are casting and slag granulation. Wastewater from both of these operations can be totally recycled and reused. An alternative to slag granulation is slag dumping, which uses less water and eliminates the discharge of wastewater.

This subcategory includes seventeen facilities, of which fifteen have achieved zero discharge by a combination of technologies such as recycle, reuse, artificial or solar evaporation, and conversion to slag dumping.

Two smelters discharge process wastewater. Plant 103 uses anode casting cooling water on a once through basis. Plant 104 discharges copper shotting contact cooling water and slag granulation water. Both of these facilities can institute methods to achieve zero discharge of pollutants from their smelters.

Plant 103 has submitted engineering plans for controlling its waste streams. The plans identify systems for the recycle and reuse of anode casting water and acid plant water with some blowdown from both operations, which will permit this plant to meet the zero discharge of pollutants allocation for its smelter operation.

Plant 104 has several options available to achieve zero discharge of pollutants, including:

(a) Installation of a primary settling pit to remove total suspended solids (TSS) from both the slag granulation and copper shotting waters. This water would then be recycled to the slag granulation operation. Based on a site inspection of this facility and information supplied by the company, EPA believes that this is the most feasible option, and the Agency's cost estimates are based on this alternative.

(b) Installation of a primary settling pond to remove TSS and a cooling tower to cool the slag granulation effluent stream. After cooling, the water would then be totally recycled. The copper shotting contact cooling water could be used as make-up water to the slag granulation recycle system.

(c) Installation of separate cooling tower and recycle systems: one for copper shotting contact cooling water and one for slag granulation water. Copper shotting contact cooling water may require a lime-and-settle wastewater treatment system to remove solids build-up. Slag granulation water should require only basic settling to remove TSS and a cooling tower to lower the temperature before recycle.

(d) Conversion to slag dumping and spraying of the copper shotting contact cooling water on the dumped slag.

In addition, this plant could recycle in accordance with options (a) or (b) or a combination of those options, and direct its remaining wastewater flow to the plant's central wastewater treatment system, which treats waste streams from its smelter and acid plant. In such case there would be no pollutant discharge allowance for the copper shotting and slag granulation waste streams.

(2) Subpart E—Primary Electrolytic Copper Refining

This subcategory covers all operations associated with electrolytic copper refining, including, but not limited to, by-product (silver, gold, selenium, etc.) recovery, product casting, and the ancillary operations of anode casting for those facilities which do not have smelter operations on site. Ten facilities are covered by this subcategory. As in the interim final regulation, electrowinning operations are not included under this regulation. The Agency is presently gathering data which may provide a basis to regulate these operations under Best Available Technology Economically Achievable (BAT).

The major source of wastewater from refineries is casting cooling water. In addition, there are potential smaller discharges from by-product recovery operations, spent electrolyte disposal, and anode and cathode washing. In calculating the appropriate BPT flow volumes, EPA considered the flows from these sources.

Individual plant flow data show that six facilities already are achieving zero discharge of wastewater from their electrolytic refining operations. Four of these facilities are in extremely arid areas and evaporate their wastewater. The two other facilities have installed either extensive recycle-reuse technologies or artificial evaporation systems to achieve zero discharge.

All four plants which have wastewater discharges from their electrolytic refining operations are located in areas where solar evaporation may not be feasible. Three of these plants—plants 119, 110, and 121—are using varying degrees of recycle or reuse technology. The primary discharge from these plants consists of blowdown from the casting cooling water recycle system. Plant 118 discharges once through casting cooling water with no treatment.

The effluent limitations for this subcategory are based on a flow volume of 2000 l/kkg (480 gallons per ton) of electrolytically refined copper. The

basis for this flow parameter is set forth on page 183 of EPA's February 1975, *Development Document for Interim Final Effluent Limitations Guidelines and Proposed New Source Performance Standards for the Primary Copper Smelting Subcategory and the Primary Copper Refining Subcategory of the Copper Segment of the Nonferrous Metals Manufacturing Point Source Category*, (Development Document). All plants are achieving this flow with the exception of plant 118 which is discharging at a rate of 8490 l/kkg (2036 gal/ton).

The following concentration parameters were used to derive the effluent limitations:

Parameter	30 day average maximum value (mg/1)	One day maximum value (mg/1)
Total Suspended Solids	25	50
Total Copper	0.4	0.85
Total Cadmium	0.015	0.03
Total Lead	0.13	0.3
Total Zinc	0.15	0.6
pH	within the range of 6.0 to 9.0	

These concentration parameters are based on data collected in a long-term monitoring program conducted at a well operated lime-and-settle treatment facility which was located at a smelter, refinery, acid plant, and ore concentrating complex (Plant 110). The treatment system includes flocculation and coagulation with lime and polymers, followed by sedimentation. Use of the data from this plant to establish effluent limitations is justified for the following reasons:

1. This is a well operated treatment plant. Extensive monitoring assures that it is operated properly. The optimal treatment at this plant is corroborated by the consistency of discharges from the treatment system; total suspended solids concentrations are low and not greatly variable, and pH values exhibit very low variability (within 0.2 pH units of the arithmetic mean of pH values).

2. Comparison of the expected values of effluent concentrations for this treatment system (Development document, page 144) for the parameters of total suspended solids, cadmium, copper, lead, and zinc indicates that actual plant performance compares favorably with anticipated treatment capability.

3. Influent to the lime-and-settle treatment system contains wastewater from the smelter, electrolytic refinery, acid plant, and ore concentrator operations. Wastewater entering this treatment plant generally contains higher concentrations of copper, cadmium, lead, and zinc than are found in the waste streams from other acid plants and refineries. Thus, all other plants should be able to achieve the BPT limitations with properly designed and operated treatment systems. Additionally, treatment at this plant may be impeded by flotation reagents from the ore concentrator; other facilities which do not have a concentrator on-site may be able to achieve greater pollution reduction.

Eleven months of data collected from this facility between September 8, 1976, to July 27, 1977, were used to establish effluent limitations. This base period was the best period of sustained performance under constant operating conditions. Prior to September 8, 1976, the effluent contained substantially higher concentrations of total copper and was at a higher pH than after that date. No data was submitted for the period following July 27, 1977.

The pollutant concentration parameters for monthly average limitations are the anti-natural logs of the natural log mean concentration over the base period. For each of the four metal pollutants, the daily maximum limitations were calculated by adding two standard deviations to the natural log mean, and calculating the anti-natural log of this value. This method was used, rather than the conventional arithmetic mean and standard deviation, because it yielded a better statistical estimate of the higher values contained in the data base.

Both the average and maximum requirements take into account seasonal variability. The data for copper, cadmium, lead, and zinc, was statistically analyzed by season as well as over the entire base period. With one exception, the highest resulting average and maximum pollutant concentrations were selected as the basis for BPT.

The exception is the 24-hour maximum concentration for copper (0.85 mg/1). This was derived by adding two standard deviations to the values derived for the entire base period, rather than the fall and early winter period (which had a maximum of 0.91 mg/1), even though the seasonal data yielded a higher maximum value. EPA chose to base the copper limitations on the entire base period because the data reveal a continuous improvement in copper concentrations, over the entire monitoring period; thus, the long term maximum better represents treatment capabilities than does the highest seasonal maximum.

For total suspended solids and pH, the Agency has retained the values developed and recommended in EPA's Development Document; the long term data from the plant 110 treatment facility indicate that these are regularly achieved.

With the exception of Plant 118, all electrolytic copper refineries, because of their recycle-reuse technologies and/or solar evaporation systems, currently are in compliance with the final regulation. Plant 118 has submitted an engineering report which states that it can install cooling towers to recycle a substantial portion of its casting cooling water. If the wastewater blowdown from these cooling towers is treated in a well run lime-and-settle treatment system as identified above, plant 118 can achieve the final limitations for its refinery.

(3) Subpart I—Metallurgical Acid Plants

This is a new subcategory covering all operations associated with the manufacture of by-product sulfuric acid at primary copper smelters, including any associated air pollution control or gas conditioning systems for sulfur dioxide off-gasses from pyrometallurgical operations. Fourteen facilities are covered by this subcategory.

The primary sources of wastewater discharges from facilities covered by this subcategory are blowdown from metallurgical acid plants and air pollution scrubber water. All of the 14 facilities this subcategory generate process wastewater; however, 11 of these facilities have achieved zero discharge mostly by solar evaporation. Acid plant blowdown is that amount of process water which must be discharged from the acid plant recycle system in order to prevent excessive buildup of pollutants in the recycle circuit. In some cases this water is discharged to receiving water; in other cases it is evaporated.

For purposes of this regulation, the unit operations encountered by SO_2-containing off-gasses between the roaster, reverb, electric furnace or converter, and the stack were considered part of the acid plant. For example, at a plant which sends SO_2-containing off-gasses through wet scrubbing, prior to entering the acid plant, the scrubber system is considered part of the acid plant.

The three facilities which discharge acid plant wastewater are located in areas where solar evaporation may not be feasible. Plant 103 discharges once-through converter scrubber water. This wastewater is limed and routed to a tailings pond for settling. The converter scrubber water is considered part of the acid plant, since the off-gasses are subsequently treated in the acid plant. Plant 104 discharges acid plant blowdown and roaster scrubber water.

The roaster scrubber water is considered part of the acid plant because this plant combines the off-gasses from the roaster and the furnace for treatment in the acid plant. Both of these waste streams are discharged to a central lime-and-settle treatment system. Plant 110 discharges acid plant blowdown, surplus gas scrubbing wastewater, and periodic acidic diversions to a central lime-and-settle treatment system. The periodic acidic diversions from the acid plant are considered to be part of the acid plant blowdown, as is the surplus gas scrubbing wastewater. The "surplus gas" contains a fairly substantial amount of SO_2 and is used in the acid plant when other operations with higher SO_2 contents are not operating. "Surplus gas" sent to the acid plant is scrubbed first.

The available treatments for acid wastewater at these three plants are artificial evaporation of the wastewater or discharge of the wastewater after lime-and-settle treatment. Only Plant 102 uses artificial evaporation, which is a high cost, high energy method that is not considered a BPT technology. Therefore, the most appropriate technology on which to base BPT is recycle-reuse of process wastewater and treatment of the wastewater with a lime-and-settle system of flocculation and coagulation with lime and polymers, followed by sedimentation with clarifiers.

A primary issue is the appropriate discharge volume on which to base BPT mass limitations. Comparisons of the volumes of water used in the acid plant with the volumes of water emanating from the acid plant indicate that the acid plants tend to fall into two groups: those with water use to process wastewater blowdown ratios of 50:1 or greater and those with ratios of 7:1 or less. The high ratios reflect extensive recycle systems and/or high evaporation within the acid plant operation. Blowdown is necessary to keep unacceptable levels of pollutants from accumulating in the recycle system.

Because of the extensive development studies and inplant process modifications necessary to achieve a high level of recycle, EPA has determined that BPT limitations will be based on those acid plants achieving a 7:1 or less water use to blowdown ratio. The BAT standards will consider more advanced recycle technologies.

Four plants have an acid plant water use to blowdown ratio of 7:1 or less; two of these plants discharge and two, located in high evaporation areas, do not discharge to receiving waters. These plants are tabluated below:

	Process water used in acid plant		Process wastewater discharged from acid plant		Ratio[1]
	l/kkg at 100 pct H_2SO_4 capacity	gal/ton at 100 pct H_2SO_4 capacity	l/kkg at 100 pct H_2SO_4 capacity	gal/ton at 100 pct H_2SO_4 capacity	
Acid plant No.:					
106	1,469	352	1,469	352	1:1
109	4,490	1,076	2,095	502	2:1
103	57,960	13,900	15,847	3,798	4:1
110	35,765	8,570	4,904	1,175	7:1
Average	24,920	5,975	6,079	1,457	

[1] Ratio of process water used to process water discharged from acid plant.

Data in the 1977 DCP's indicate that acid plant water use and blowdown correlates better with acid plant capacity than with actual acid smelter production. Discussions with industry corroborate this conclusion. Hence, tons of 100 percent H_2SO_4 capacity was chosen as the production normalizing basis for the acid plant limitation.

Based on the above analysis, the effluent limitations for this subcategory are based on a flow volume of 6079 1/kkg (1457 gal/ton) at 100 percent equivalent sulfuric acid capacity. Only plant 103, which is discharging at a rate of 15,847 1/kkg (3798 gal/ton), is not achieving this flow rate.

EPA derived the pollutant concentration parameters from the same treatment facility which was used to determine the concentration parameters for the primary electrolytic copper refining subcategory.

Plants 110 and 104 have discharges with less flow volume than 6079 1/kkg (1457 gal/ton) and have lime-and-settle treatment systems in place. Both of these facilities currently achieve the acid plant effluent limitations promulgated today.

Plant 103 discharges once through converter scrubber water. This is limed and routed to a tailings pond for settling.

This facility has submitted an engineering report which indicates that it can install cooling towers to recycle a substantial portion of the converter scrubber process wastewater presently discharged. If the wastewater blowdown from these cooling towers is treated in a well run lime-and-settle treatment system as identified above, Plant 103 can achieve the limitations promulgated today.

Appendix B—(Summary of Public Participation)

Factual information and conclusions which support this regulation were detailed in the notice of interim final rulemaking for the Nonferrous Metals Manufacturing Point Source Category promulgated on February 27, 1975 (40 FR 8513). The regulations as promulgated in interim final form were supported by the Development Document and the document entitled *Economic Analysis of Proposed Effluent Guidelines Nonferrous Metals Manufacturing Industry (Phase II)*, March 1975, (Economic Analysis). These documents were made available to the public and circulated to interested persons for comment at the time of publication of the notice of interim final rulemaking.

In addition, prior to publishing the notice of interim final rulemaking, EPA distributed a draft development document to federal agencies, all state and territorial pollution control agencies, industry trade associations, and conservation organizations. Comments on that report were solicited. The major comments received and the Agency's responses were described in the notice of interim final rulemaking (40 FR 8513).

The following persons or groups responded to the request for written comments contained in the notice of interim final rulemaking: American Mining Congress; American Smelting and Refining Company; The Anaconda Company; Parsons, Behle & Latimer on behalf of Kennecott Copper Corporation; New York State Department of Environmental Conservation; Sidney B. Tuwiner on behalf of Phelps Dodge Refining Corporation; Texas Water Quality Board; U.S. Department of Commerce; U.S. Department of Health, Education and Welfare; and U.S. Department of the Interior.

(1) Several commenters expressed concern about the use of impoundment areas for facilities not located in extremely arid areas. Their concerns are summarized below:

(a) Evaporative impoundment areas necessary to achieve zero discharge under the interim final regulation would have to be extremely large in order to allow for winter conditions. During winter months, wastewater entering the pond would freeze and accumulate and very little, if any, evaporation would occur. This problem is compounded by snowfall which also would accumulate. Freezing and snowfall conditions, depending upon the severity of a particular winter, could last up to five months. In order to meet zero discharge in these areas, the impoundment area would have to be large enough to contain the plant's entire winter discharge. The commenters submitted data demonstrating that the cost to construct and operate impoundment areas of this size was exorbitant and that in some cases, the land required for these impoundments would not be available.

(b) It would be extremely difficult to correctly operate an impoundment area to comply with the interim final regulation because only that volume of water which is equal to the monthly participation minus monthly evaporation could be legally discharged. There are several technical difficulties in measuring both precipitation and evaporation accurately, and only at the end of a calendar month could the difference between the two be calculated and the excess water be discharged. Operating procedures would dictate that this discharge be accomplished as quickly as possible in order to drain the impoundment area so that the next month's precipitation could be accumulated. Consequently, the interim final regulation would lead to short duration, intermittent, high volume "slug" discharges.

The Agency substantially agrees with these comments. For those reasons, as well as the other considerations discussed in this notice, the final regulation permits continuous discharges of process wastewater pollutants associated with refineries and acid plants.

(2) Two commenters recommended that limitations be based on dissolved, rather than total, metals.

Like the interim final regulation, the final regulation is derived from total metals data. By limiting total metals, the regulation minimizes the potential problems of metals redissolving in the environment or solubilizing within living organisms. If the regulation limited only dissolved metals, an operator could achieve low dissolved metals concentrations by adjusting pH, without substantially reducing the total metals concentrations. Upon entering the receiving water, which often has a different pH, redissolving or solubilizing of the suspended metals could occur with potentially serious pollution consequences.

(3) One commenter indicated that the interim final regulation did not address commingled streams from its copper refinery and zinc oxide operations.

The final regulation establishes separate requirements for smelters, electrolytic refineries, and acid plants. The Agency believes that it is more appropriate to establish limitations for commingled discharges on a case-by-case basis, using these effluent limitations as building blocks.

(4) One commenter stated that discharges to ephemeral streams and the Great Salt Lake should be allowed without control due to the lack of aquatic life in the receiving waters. Another commenter stated that minimally treated wastewater (less treatment than that specified by BPT) should be allowed to be discharged to the Atlantic Ocean because no adverse environmental damage would result. Conversely, two other commenters indicated that the interim final regulation was not adequate to achieve water quality standards.

In accordance with the requirements of the Clean Water Act, final effluent limitations are based on best practicable control technology currently available and are technology-based requirements. Therefore, the effluent limitations are not designed to obtain designated water quality levels in specific receiving waters. Any more stringent requirements necessary to attain applicable water quality standards must be included in an NPDES permit; moreover, as required by law, the effluent limitations are nation wide in scope, and apply to all plants within a category or subcategory.

(5) One commenter was concerned that energy requirements for pollution control were not adequately addressed.

As a part of EPA's current effort to develop BAT effluent limitations, the Agency has assessed the additional amount of energy which would be needed for BAT technologies. Results indicate that the added energy requirements for end of pipe treatment at a median size plant is equal to or less than 0.17% of the facility's total energy consumption. The treatment system identified for the BAT energy costing analysis was a combination of cooling tower, chemical precipitation (e.g., lime and settle), filtration, and activated carbon. This treatment system is more extensive and energy intensive than that suggested for BPT. Therefore, installation of BPT treatment at copper plants will not significantly increase energy consumption.

(6) One commentor expressed the concern that recycling of contact cooling water used in the casting of wirebar without a blowdown would cause excessive amounts of total dissolved solids (TDS) to accumulate, thereby, adversely affecting the surface quality of the wirebar produced. The commenter recommended that a blowdown from recycle systems be allowed based on the concentration of TDS rather than on a given percentage of the water used.

This is an issue that will be addressed in greater detail with the development of BAT limitations; however, today's BPT limitations permit the discharge of blowdown from both acid plant and electrolytic refinery operations in sufficient quantities to assure that there is not an adverse build-up of TDS. The Agency's review of data for the facility submitting this comment indicates that its existing treatment system already achieves the final effluent limitations established in this regulation.

(7) One commenter indicated that a multiplication factor of 4 rather than 2 should be applied to the 30-day average used to determine the 24-hour maximum effluent requirements.

The final limitations are based on actual long term effluent data at an existing well run treatment facility. Both the daily average and daily maximum effluent limitations are based on the actual results obtained by that treatment facility. The data indicate that the ratio of the daily maximum concentration to the daily average concentration ranges between 2.0 and 4.0 depending on the pollutant (total copper 2.12, total cadmium 2.0, total lead 2.3, total zinc 4.0). The analysis used to determine the effluent limitations is discussed in detail in Appendix A—Technical Data.

(8) One commenter recommended that the regulations require impoundment areas to be lined with an impervious layer of either clay or synthetic liner to eliminate or reduce the chance of aquifer contamination.

The final limitations are not based on the use of large evaporative impoundment areas, but rather on the recycle or reuse of smelter process wastewater and treatment and recycle of refinery and acid plant process wastewater. As such, they contemplate the use of much smaller ponds and clarifiers. This treatment scheme would substantially mitigate seepage problems. Although the final limitations do not require pond lining, they do not preclude permitting authorities from imposing appropriate requirements relating to acquifer contamination under other legal authority.

(9) One commenter indicated that better metals removal may be achieved by the use of multi-stage precipitation using soda and soda ash than by liming and settling at a single pH level.

The Agency agrees that this technology may effectively achieve the BPT limitations; however, this technology is not generally in use. Therefore, the BPT regulations are not based on this technology.

(10) One commenter indicated that ammonia (NH_3) should not be used for neutralization because soluble complexes are developed, making it very difficult to remove heavy metals.

Since ammonia does not effectively precipitate metals, the Agency agrees that it should not be considered an appropriate technology.

(11) One plant commingles wastewater from smelting (including acid plant blowdown), refining, and ore concentrating for treatment in its central treatment plant. This plant indicated that reuse of the treated wastewater in the concentrator (as suggested in the interim final regulation) would adversely affect metal recovery in the concentrator circuits.

The data submitted by this company is inconclusive, but provides some support for its contention. The final regulation is therefore based on treatment of the acid plant and refinery process wastewater discharges in the central wastewater treatment plant, followed by discharge to the receiving water. Company supplied information, however, indicates that its anode casting and slag granulation wastewater streams are routed to the concentrator. These streams do not adversely affect concentrator recoveries.

This company has recently agreed to undertake bench scale tests to determine whether additional treatment of the central treatment plant effluent will make this water usable in the concentrator in the future.

(12) One commenter submitted evidence attempting to demonstrate that it should be considered a fundamentally different facility.

This generic rulemaking is not the appropriate forum in which to decide individual variance requests. Rather, a variance application must be made in the permitting context, where an administrative record specifically addressed to that facility can be developed in detail. The procedures and criteria governing variance applications are delineated in EPA's NPDES regulation, 44 FR 32854, §§ 125.30–125.32 (June 7, 1979).

(13) One commenter indicated that if refinery wastewater is discharged at the TSS concentrations allowed by the interim final regulation, then the total copper concentations also specified in the interim final regulation would be very difficult to meet because of an alleged correlation between TSS and total copper levels.

Review of the long term data on which the final regulation is based confirms that both TSS and total copper limitations specified in the final regulation are routinely achieved.

(14) Several commenters criticized EPA's cost estimates for the interim final regulation as being unrealistically low.

Cost estimates are subject to disagreement. Moreover, as noted elsewhere in the final regulation, only three facilities will incur additional compliance costs. With respect to two of these facilities, cost estimates submitted by the company were used by the Agency and its contractor to determine costs. However, the company's cost submissions were based on the interim final regulation rather than today's revisions. For these and other reasons, the Agency and its contractor determined that the company's estimates substantially overstate the costs associated with the final regulation and have derived more accurate cost estimates using the company's submissions as a starting point. With respect to the third affected facility, this company did not submit comments concerning costs of the interim final regulation, and the Agency's cost estimates for the final regulation are based upon site-specific information submitted by this company, supplemented by a site-visit undertaken by Agency personnel for purposes of this rulemaking.

(15) Several commenters indicated that EPA did not do an economic impact analysis and must prepare an inflationary impact statement under executive order 11821.

The Agency did in fact prepare an economic impact analysis for the 1975 interim final regulation, *Economic Analysis of Effluent Guidelines for the Non-Ferrous Metals Manufacturing Industry*, (EPA 230–1–75–041, March, 1975). This report has been updated with a revised economic analysis reflecting the revisions promulgated in the final regulation (*Economic Impact Analysis of Revised BPT Effluent Limitation Guidelines on the Copper Segment of the Nonferrous Metals Industry*).

Executive Order 11821 has been superseded by Executive Order 12044 which requires EPA and other federal agencies to perform regulatory analyses of certain regulations (43 FR 12661, March 23, 1978). EPA's proposed regulations for implementing Executive Order 12044 require a regulatory analysis for major significant regulations involving annual compliance costs of $100 million or more, or meeting specified criteria, (43 FR 29891, July 11, 1978). When these criteria are met, the proposed regulations require EPA to prepare a formal regulatory analysis including an economic impact analysis and an evaluation of regulatory alternatives, such as: (1) Alternative types of regulations; (2) alternative stringency levels; (3) alternative timing; and (4) alternative methods of ensuring compliance. Although Executive Order 12044 was not in force at the time of EPA's publication of the 1975 Economic Analysis, that report fully covers the areas outlined in the 1978 Executive Order.

(16) Commenters stated that EPA has not considered the cumulative effects of the proposed regulation with those presently in force from other agencies as well as potential future EPA regulations.

EPA's economic impact analysis begins with a base case analysis which considers in its financial analysis any regulation that is presently in force upon an industry. The economic analysis does not consider the potential of future regulation because it is impossible to anticipate the exact cost of future regulations.

(17) Several commenters indicated that the Agency did not adequately consider the effect of foreign competition.

Consideration of price effects and financial effects indicates that there will be no plant closures or serious production curtailments in the primary copper smelting and refining industry due to BPT effluent limitations. As a result, there will be no effects on production, balance of trade and employment within the industry.

(18) Several commenters stated that a cost benefit analysis should have been performed to show the environmental benefits to be derived from the promulgation of the regulation.

The effluent limitations are based on best practicable control technology currently available (BPT). This includes a consideration of costs of the BPT technologies in relation to the resulting pollution reduction benefits. The Agency's estimate of costs and effluent reduction benefits associated with these regulations is summarized in Appendix D.

Appendix C—(Non-Water Quality Aspects)

The non-water quality impacts of the interim final regulation are discussed in the Development Document previously prepared for that regulation, and the public is referred to that discussion.

Because the final regulation allows refineries and acid plants to use lime and settle treatment with clarifiers in place of evaporation lagoons, the non-water quality impacts may differ slightly from those associated with the interim final regulation. Generally, the change in impact will be minor. The Agency expects no change for the primary copper smelting subcategory because the zero discharge requirement has not been changed.

Energy Costs

The operation of a clarifier generally uses more energy than does an evaporation lagoon. However, total energy consumption attributable to use of clarifiers is very low. An investigation made as a part of the Agency's development of the BAT regulation indicates that the median energy increase for a treatment sytem consisting of a cooling tower, chemical precipitation (e.g., clarification), filtration, and activated carbon system is 0.17 percent. This system is much more energy intensive than operation of a clarifier alone. The power consumption for wastewater treatment by either evaporation lagoons or clarification is small in comparison with total plant energy consumption.

Solid Waste

The quantity of sludge generated by application of the final regulation will be somewhat greater than that attributable to the interim final regulation. The addition of lime contemplated by the final regulation will add some additional solids which must be disposed of. The additional quantity of sludge which would be generated is not significant.

Operation of a clarifier requires the direct handling and disposal of sludge by some means (e.g., pumping to a sludge pond, truck hauling, etc.), whereas operation of an evaporation lagoon requires no special sludge handling procedures until the lagoon is filled.

Air Pollution

Often during dry summer months the water level in an evaporation pond will drop substantially because of evaporation. This exposes large pond areas which have a fine dust cover. Any wind at this time can cause dust problems. Use of clarifiers rather than lagoons should mitigate this problem.

Land Use

Clarifiers require substantially less land than do evaporation ponds. While some additional land may be required for sludge disposal, on balance the final regulation will entail less land-use than the interim final regulation. For example, plant 116 would have had to purchase prime wheat land north of its facility if evaporation lagoons had been required, whereas the clarification systems can be installed on existing property.

Other Impacts

No impact or major changes in noise generation, radiation levels, or number of employees working at any facility are anticipated due to the changes made today.

Appendix D—(Economic Impact and Effluent Reduction Benefits)

Cost and Economic Impact

Twenty of the twenty-three facilities covered by this regulation are already in compliance. The Agency estimates the aggregate compliance costs for the remaining three facilities to be $4.9 million (investment) and $1.7 million (annual, including interest and depreciation). The Agency's economic impact analysis, which updates the analysis performed in connection with the interim final regulation in light of the final regulation, assessed integrated facility production costs with and without BPT compliance costs. These costs were compared with metal selling price and aggregated industry production costs. No unemployment, plant closures, or significant reduction in industry production capacity is expected to result from this regulation.

This regulation does not require a regulatory analysis because annual compliance costs are less than $100 million and none of the other criteria for regulatory analysis are met. This determination is in accordance with the Agency's procedures for improving environmental regulations, published at 44 FR 30988 (May 29, 1979). Nonetheless, the technical and economic impact evaluations satisfy the regulatory analysis requirements.

Effluent Reduction Benefits

The Agency estimates that compliance with the final regulation will prevent the yearly discharge of approximately 32,600,000 pounds of total suspended solids; 3,330,000 pounds of copper; 1,500,000 pounds of lead; 1,200,000 pounds of zinc, and 91,000 pounds of cadmium from those plants not currently in compliance with the final regulation. Using the estimated Agency costs for compliance, approximate annual costs of removing pollutants are $.05 per pound of total suspended solids, $0.51 per pound of copper, $1.13 per pound of lead, $1.42 per pound of zinc and $18.68 per pound of cadmium. The Agency concludes that the costs of today's regulation are reasonable in light of the effluent reduction benefits to be achieved.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Listing the Oregon Silverspot Butterfly as a Threatened Species With Critical Habitat

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Service determines the Oregon silverspot butterfly (*Speyeria zerene hippolyta)* to be a Threatened species. This action is being taken because all known populations of the butterfly are small, limited in range, and threatened by housing development and recreational activities. The Oregon silverspot butterfly is known to occur only at a few sites on the central Oregon coast and at one site in Washington. Critical Habitat in Oregon is included with this final rule. The rule will provide protection to wild populations of this species.

DATE: This rule becomes effective on October 15, 1980.

ADDRESSES: Questions concerning this action may be addressed to Lynn A. Greenwalt, Director, U.S. Fish and Wildlife Service, Washington D.C. 20240.

FOR FURTHER INFORMATION CONTACT: Mr. John L. Spinks, Jr., Chief, Office of Endangered Species, U.S. Fish and Wildlife Service, (703/235-2771).

SUPPLEMENTARY INFORMATION:

Background

The Oregon silverspot butterfly is an orange and brown butterfly with silver spots on the underwings, and belongs to the family Nymphalidae. The butterfly formerly occurred along the coasts of Washington and Oregon, but most of the colonies have been extirpated due to housing or park development. Only one healthy colony is known. The main threats to the butterfly are housing development and increased recreational use of the coastal areas to which it is restricted.

The Oregon silverspot butterfly was included by the Service in a March 20, 1975 status of review (40 FR 12691) seeking information to determine whether this butterfly should be