

[Federal Register: September 8, 1994]

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 9 and 63

[AD-FRL-5052-3]  
RIN 2060-AC 12

National Emission Standards for Hazardous Air Pollutants for  
Industrial Process Cooling Towers

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

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SUMMARY: This action promulgates final standards that limit the discharge of chromium compound air emissions from industrial process cooling towers (IPCT's) pursuant to section 112 of the Clean Air Act as amended in 1990 (the Act). Chromium compounds are among the 189 hazardous air pollutants (HAP's) listed for regulation under section 112 of the Act. Industrial process cooling towers that use chromium-based water treatment programs have been identified by the EPA as significant emitters of chromium compounds to the atmosphere. The purpose of the final rule is to effectively eliminate chromium compound air emissions from IPCT's through the prohibition of chromium-based water treatment chemicals in affected new and existing IPCT's.

DATES: These regulations are effective September 8, 1994.

The incorporation by reference of certain publications in this standard is approved by the Director of the Office of the Federal Register as of September 8, 1994.

ADDRESSES: Docket. Docket No. A-91-65, containing information considered by the EPA in developing the promulgated IPCT NESHAP is available for public inspection and copying between 8 a.m. and 4 p.m., Monday through Friday, except for Federal holidays, at the EPA's Air and Radiation Docket and Information Center, Room M1500, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460; telephone (202) 260-7548. A reasonable fee may be charged for copying.

Background Information Document

A background information document (BID) for the promulgated ITCT national emission standards for hazardous air pollutants (NESHAP) may be obtained from the docket; the U.S. EPA Library (MD-35), Research Triangle Park, NC 27711, telephone number (919) 541-2777; or from

National Technical Information Services, 5285 Port Royal Road, Springfield, Virginia 22161; telephone (703) 487-4650. Please refer to ``National Emission Standards for Hazardous Pollutants for Industrial Process Cooling Towers--Background Information for Promulgated Standards'' (EPA-453/R-94-041b). The BID contains a summary of the public comments made on the proposed IPCT standard and EPA responses to the comments.

FOR FURTHER INFORMATION CONTACT:

Mr. Phil Mulrine of the Industrial Studies Branch, Emissions Standards Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone (919) 541-5289.

SUPPLEMENTARY INFORMATION: Under section 307(b)(1) of the Act, judicial review of NESHAP is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this rule. Under section 307(b)(2) of the Act, the requirements that are the subject of today's notice may not be challenged later in civil or criminal proceedings brought by the EPA to enforce these requirements.

The information presented in this preamble is organized as follows:

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I. Background

Section 112(b) of the Act lists 189 HAP's and requires the EPA to

establish national emission standards for all major sources and some area sources of those HAP's. Among the listed pollutants are chromium compounds. On July 16, 1992 ( 57 FR 31576), EPA published a list of major and area sources for which NESHAP are to be promulgated and on December 3, 1993 (58 FR 83941), EPA published a schedule for promulgation of those standards. The IPCT source category is included in the list of major sources to be regulated for which the EPA is to establish national emission standards by November 1994.

The IPCT rule was proposed in the Federal Register on August 12, 1993 (58 FR 43028). No public hearing on this rule was requested, but 41 comment letters were received.

## II. Summary

### A. Summary of Promulgated Standards

The standard being promulgated today will eliminate emissions of chromium compounds from new and existing IPCT's that are major sources or are integral parts of major sources by prohibiting the use of chromium-based water treatment chemicals in those IPCT's.

#### 1. Affected Sources

Cooling towers are devices that are used to remove heat from a cooling fluid, typically water, by contacting the fluid with ambient air. The IPCT source category includes cooling towers that are used to remove heat that is produced as an input or output of chemical or industrial processes. The IPCT source category also includes cooling towers that cool industrial processes in combination with heating, ventilation, and air conditioning (HVAC) systems. Standards to control chromium emissions from cooling towers that cool HVAC systems exclusively (comfort cooling towers (CCT)) were promulgated on January 3, 1990, under section 6 of the Toxic Substances Control Act (TSCA), (55 FR 222).

This rule is applicable only to those IPCT's in which chromium-based water treatment chemicals are used on or after [Insert date of publication of this final rule] and which are major sources or are integral parts of major sources as defined in Sec. 112(a)(1) of the Act. A major source is any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit, considering controls, 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAP's.

This rule is not applicable to area source IPCT's, which are IPCT's that are neither major sources nor integral parts of major sources. However, owners or operators of area source IPCT's should take note of two specific requirements of the General Provisions to part 63 of the Code of Federal Regulations (CFR) that are applicable to area sources. First, Sec. 63.6(a) of the General Provisions states that if an area source increases its emissions of HAP's (or its potential to emit HAP's) such that the source now qualifies as a major source, that source would then become subject to any relevant standards promulgated under part 63 for major sources. Thus, any area source IPCT that is operated with chromium-based water treatment chemicals and that later becomes a major source or becomes an integral part of a major source is subject to this subpart. Second, as required by Sec. 63.10(b)(3) of the

General Provisions, owners or operators of area source IPCT's that use chromium water treatment chemicals on or after September 8, 1994, must keep on file a record of the determination that the IPCT is an area source IPCT.

## 2. Format of the Standard

As authorized under section 112(h) of the Act, this standard is a work practice standard rather than an emission standard. The standard regulates emissions of chromium from affected IPCT's by prohibiting the use of chromium-based water treatment chemicals in those IPCT's.

## 3. Compliance Date

The compliance date of this rule for existing IPCT's is March 8, 1996. All affected existing IPCT's must discontinue the use of chromium-based water treatment chemicals by that date. The compliance date for new IPCT's that are placed into operation before September 8, 1994 is September 8, 1994. The compliance date for new IPCT's that are placed into operation after September 8, 1994 is the date that circulation of water through the IPCT is initiated.

In accordance with Sec. 63.6(c)(5) of the General Provisions, the compliance date for existing area source IPCT's that become major sources or integral parts of major sources is 18 months from the date on which the IPCT becomes a major source or integral part of a major source. In accordance with Sec. 63.6(b)(7) of the General Provisions, the compliance date for new area source IPCT's that become major sources or integral parts of major sources is the date that the IPCT becomes a major source or integral part of a major source.

## 4. Compliance Demonstrations

This rule contains no requirements for performance testing or for monitoring IPCT emissions or any other parameter. However, regulatory agencies have the option of requiring cooling water sampling for residual hexavalent chromium (Cr<sup>+6</sup>) if warranted. This rule specifies methods for sampling and analyzing cooling water for Cr<sup>+6</sup> and a de minimis Cr<sup>+6</sup> concentration of 0.5 parts per million (ppm) by weight. Any affected IPCT with a cooling water Cr<sup>+6</sup> concentration in excess of 0.5 ppm would be considered in violation of this standard. Because it may require several weeks for the concentration of Cr<sup>+6</sup> in cooling water to decline below 0.5 ppm, the final rule allows a 3 month time period following the compliance date before a Cr<sup>+6</sup> concentration in excess of 0.5 ppm is considered to be a violation of the standard.

## 5. Notification Requirements

Owners or operators of affected IPCT's are required to submit two notifications: an initial notification and a notification of compliance status. The initial notification will enable enforcement personnel to identify the population of IPCT's subject to the standard. This notification must include the name and address of the owner or operator, the address of the affected IPCT, and information on the types of water treatment chemicals used in the IPCT. For existing IPCT's or new IPCT's that are in operation on the effective date of this rule, the initial notification must be submitted by September 8, 1995. Owners or operators of new IPCT's that are not yet in operation are required to submit the initial notification within 12 months of initial startup of the IPCT. This rule overrides the requirement of Sec. 63.9(b) of the General Provisions which requires that the initial notification be submitted 120 days later than the compliance date.

The notification of compliance status is a one-time certification that must be submitted no later than 60 days after the compliance date. This rule overrides the requirement of Sec. 63.9(h) of the General Provisions that requires owners or operators of affected sources to submit annual notifications of compliance status. The notification of compliance status must state that the source is in compliance with this standard and must be signed by a responsible official. In addition, the notification of compliance status must include information on the type of cooling water treatment chemicals used in the affected IPCT.

#### 6. Reporting and Recordkeeping Requirements

This rule requires no routine or periodic reporting by owners or operators of affected IPCT's. The only records that owners or operators of affected IPCT's are required to keep under this rule are the initial notification and the notification of compliance status. These records must be retained for a minimum of 5 years onsite. In addition, as stated previously, owners or operators of area source IPCT's that use chromium water treatment on or after September 8, 1994 must keep on file for a minimum of 5 years the documentation that substantiates that the IPCT is an area source IPCT and is not subject to this rule.

### B. Summary of Major Changes Since Proposal

#### 1. Applicability

The final rule is applicable only to those IPCT's that are major sources or are integral parts of major sources and are operated with chromium-based water treatment chemicals on or after the effective date of the rule. Under the proposed rule, all IPCT's that are major sources or are integral parts of major sources would have been subject to the standard, regardless of the type of water treatment program used in those IPCT's.

#### 2. Definitions

In the final rule, several definitions were modified or added to clarify the rule and to eliminate the need to reference the Act or the General Provisions to part 63.

#### 3. Compliance Date

In the proposed rule, Sec. 63.403(a) specified a compliance date for existing IPCT's of 6 months after promulgation. In the final rule, the compliance date for existing IPCT's was changed to 18 months following promulgation of the rule.

#### 4. Compliance Demonstrations

Section 63.404 of the proposed rule was titled ``Monitoring requirements.'' In the final rule, Sec. 63.404 is titled ``Compliance demonstrations'' to more accurately reflect the content of the section. The final rule also includes a second approved method for sampling and analyzing cooling water samples for Cr<SUP>+6: Method 3500-Cr D, Colorimetric Method, Standard Methods for the Examination of Water and Wastewater, American Public Health Association. The second approved method is based on the same analytical procedure as Method 7196, which was the only EPA-approved method specified in the proposed rule. In addition, the final rule specifies a de minimis concentration of 0.5 ppm by weight Cr<SUP>+6 in IPCT cooling water; the proposed rule did not specify a de minimis level for chromium. Furthermore, the final rule allows a 3 month time period following the compliance date before a Cr<SUP>+6 concentration in excess of 0.5 ppm is considered to be a

violation of the standard.

#### 5. Notification Requirements

In the proposed rule, recordkeeping requirements were addressed in Sec. 63.405 and notification requirements were addressed in Sec. 63.406, which was titled ``Reporting.'' In the final rule, these sections have been reorganized to conform with the organization of the General Provisions to part 63: notification requirements are addressed in Sec. 63.405, and recordkeeping and reporting requirements are addressed in Sec. 63.406.

The final rule requires two one-time notifications for each affected IPCT: One initial notification and one notification of compliance status. The proposed rule referenced Sec. 63.9 of the General Provisions to part 63 regarding the requirements of the initial notification and notification of compliance status but did not list the specific requirements of the notifications. The final rule specifies the types of information required in each notification and specifies deadlines for submittals of both notifications. The initial notification must be submitted by owners or operators of existing IPCT's by September 8, 1995 and by owners or operators of new IPCT's within 12 months of the initial startup of the affected IPCT. The notification of compliance status must be submitted within 60 days of the date of the IPCT is brought into compliance with this subpart. The proposed rule required annual submissions of the notification of compliance status.

#### 6. Recordkeeping and Reporting Requirements

As stated previously, recordkeeping requirements were moved from Sec. 63.405 in the proposed rule to Sec. 63.406 in the final rule. The proposed rule required IPCT owners or operators to maintain records of water treatment chemical purchases. Owners or operators of IPCT's that were operated with chromium-based water treatment chemicals also were required to maintain an inventory of the chromium chemicals that are onsite and to document the disposition of those chromium chemicals. In the final rule, these recordkeeping requirements have been eliminated. However, the final rule still requires IPCT owners or operators to keep copies of the initial notifications and the notifications of compliance status in accordance with Sec. 63.10 of the General Provisions.

The proposed rule did not specify a minimum record retention period, but referenced Sec. 63.10 of the General Provisions to part 63 regarding general requirements for recordkeeping. The final rule specifies a minimum record retention period of 5 years.

### III. Summary of Environmental, Energy, Cost, and Economic Impacts

#### A. Environmental Impacts

The environmental impacts for this rule were not affected by changes made to the rule between proposal and promulgation. These impacts are summarized below.

##### 1. Air

This standard prohibits the use of chromium-based water treatment programs in affected IPCT's. The total baseline Cr<SUP>+6 emissions from all existing IPCT's are estimated to be 23 megagrams per year (Mg/yr) (25 tons/yr). The standard will achieve a 99 percent reduction of Cr<SUP>+6 emissions nationwide by eliminating all Cr<SUP>+6 emissions

from existing IPCT's that are major sources or are integral parts of major sources. None of the nonchromium chemicals that are used as substitutes for chromium chemicals in cooling water are listed as HAP's under Sec. 112(b) of the Act.

The standard will also prevent emission of 1.6 Mg/yr (1.8 tons/yr) of Cr<sup>+6</sup> from the 870 new IPCT's projected by 1998 (the fifth year of the standards). This estimate is based on the assumption that, in the absence of a standard, chromium use would remain at current levels (i.e., 10 percent or 87 of new IPCT's would be placed on chromium-based programs).

Substitute nonchromium-based treatment programs typically require higher levels of phosphates and polymeric dispersants than do chromium-based treatment programs. Nonchromium treatment programs may also contain molybdates. Thus, emissions of these compounds would increase under the standard. However, none of these compounds are listed HAP's. Total baseline emissions of phosphates for all existing IPCT's are estimated to be 104 Mg/yr (114 tons/yr). Under the standard, phosphate emissions from existing IPCT's would increase by 46 Mg/yr (50 tons/yr) to approximately 150 Mg/yr (165 tons/yr).

Zinc, which is not a listed HAP, is a common corrosion inhibitor present in many cooling water treatment programs. Almost all current chromium-based programs contain zinc because the two metals act synergistically to inhibit corrosion. Nonchromium treatments may also contain zinc at levels similar to those in the chromium/zinc programs that they replace. As chromium/zinc treatments are replaced by nonchromium treatments, zinc emissions are not expected to change significantly.

Molybdate-based programs currently have a very small share (less than 1 percent) of the water treatment market. Although the market for molybdate programs is expected to grow modestly under the standard, molybdate usage is expected to remain limited because these programs are more expensive than other treatment programs. Consequently, molybdate emissions are not expected to increase significantly.

Under the standard, particulate matter (PM) emissions from existing IPCT's will not change from baseline levels of approximately 10,000 Mg/yr (11,000 tons/yr). New source PM levels will also be unaffected by these standards.

In the absence of the standard, phosphate emissions from new sources in 1998 would be approximately 4 Mg/yr (4.4 tons/yr). Under the standard, phosphate emissions from new IPCT's in the fifth year will increase to 5.8 Mg/yr (6.4 tons/yr), and total nationwide phosphate emissions for new and existing IPCT's in the fifth year of the standard will be 156 Mg/yr (172 tons/yr).

## 2. Water

Blowdown from existing IPCT's is pretreated to remove Cr<sup>+6</sup> before discharge. Any Cr<sup>+6</sup> removed from treated IPCT blowdown is handled as solid waste. The standard will eliminate any accidental water discharges of Cr<sup>+6</sup> from IPCT blowdown pretreatment programs.

Under the standard, nationwide phosphate discharges from existing IPCT's will increase by as much as 830 Mg/yr (910 tons/yr), and new sources that will go into operation by 1998 will discharge an additional 610 Mg/yr (670 tons/yr). As a result, total phosphate discharges will increase from the baseline level of 7,700 Mg/yr (8,470 tons/yr) to 9,140 Mg/yr (10,050 tons/yr). In the absence of the

standard, new sources that will go into operation by 1998 would increase nationwide phosphate water discharges by 550 Mg/yr (610 tons/yr). As a result, total phosphate discharges will increase from the baseline of 7,700 Mg/yr (8,470 tons/yr) to 8,250 Mg/yr (9,075 tons/yr). These increases in phosphate discharges are extremely small in comparison to phosphate discharges from cropland and pastureland runoff. Consequently, there are no significant impacts associated with these increased phosphate discharges.

Nonchromium treatments contain levels of zinc similar to those in baseline chromium programs. Therefore, zinc discharges are not expected to increase under the standard. Although data are limited, increases in the amount of molybdate discharged under the standard are expected to be negligible.

### 3. Solid Waste

The only impacts of the standard on solid waste will result from eliminating all Cr<sup>+6</sup> in the solid waste from IPCT blowdown treatment processes. Disposal of all other forms of solid waste removed from IPCT blowdown would remain at current levels.

Blowdown from cooling towers may be treated to reduce the concentrations of corrosion inhibitors (e.g., chromium, zinc, phosphates, and molybdenum). The concentration of these elements in the resulting sludge is likely to be higher than the concentrations in the blowdown before treatment. Chromium-containing solid waste (i.e., the treatment sludge) is sometimes identified as a hazardous waste, the EPA hazardous waste No. D007, under Resource Conservation and Recovery Act (RCRA) part 261, subpart C--Characteristics of Hazardous Waste; it is considered a hazardous waste if its leachate contains greater than 5 milligrams per liter (mg/L) total chromium as determined by the Toxicity Characteristic Leaching Procedure. Chromium-containing waste is also subject to the Land Disposal Restrictions in RCRA part 268, which allows land disposal only if the hazardous waste is treated in accordance with subpart D--Treatment Standards. Land disposal of the waste is allowed if the chromium concentration in the waste does not exceed 5 mg/L total chromium. Hazardous wastes also must be handled and stored according to specific RCRA procedures.

Baseline blowdown discharges are estimated to contain a maximum of 400 mg/yr (440 tons/yr) of Cr<sup>+6</sup>. Consequently, the standard will eliminate solid waste disposal of a maximum of 400 Mg/yr (440 tons/yr) of Cr<sup>+6</sup> by eliminating all Cr<sup>+6</sup> from IPCT's. Zinc-, molybdenum-, and phosphate-containing wastes are not identified as hazardous wastes and, therefore, do not have the same solid waste disposal requirements as chromium-containing wastes. Under the standard, the solid waste impacts due to zinc-, molybdenum-, and phosphate-containing wastes will be negligible.

### B. Energy Impacts

The energy impacts, which are described below, were not affected by changes made to the rule between proposal and promulgation. The only energy impacts for the standard over baseline will result from the energy required to operate the additional chemical feed and regulation equipment that is required for nonchromium-based water treatment programs. The nationwide energy impacts associated with the standard are small.



Nonchromium-based water treatment programs typically require tighter control of chemical feed and recirculating water quality parameters than do chromium-based programs. The components required for a basic nonchromium-based chemical feed and regulation system include a pH controller, conductivity controller, and metering chemical feed pumps.

For existing sources, a nationwide increase of up to 3,500 megawatt-hours per year (MWh/yr) (12,000 million British thermal units per year (Btu/yr)) will result from the use of additional automated instrumentation/controller equipment under the standard. This represents an increase of approximately 0.01 percent of the energy required to operate these IPCT's. For new sources, a nationwide increase of up to 370 MWh/yr (1,300 million Btu/yr) will result under the standard.

Typical baseline automated instrumentation/controllers for an IPCT currently on a chromium-based water treatment program consume approximately 1.5 MWh/yr (50 million Btu/yr). Energy consumption for instrumentation/controllers for this IPCT will increase to 4.4 MWh/yr (150 million btu/yr) under the standard.

### C. Cost Impacts

The cost impacts, which are described below, were not affected by changes made to the rule between proposal and promulgation. Cost components of the nonchromium control measure include the increased cost of nonchromium chemicals over the cost for chromium chemicals and the cost to install, operate, and maintain automated chemical feed and regulation equipment. When properly controlled, nonchromium-based water treatment programs perform comparably to chromium-based programs. Therefore, it is assumed that corrosion rates, heat exchanger lifetimes, cleaning frequencies and costs, and other maintenance requirements are similar for both types of water treatment programs, and no significant cost result from conversion.

Total annualized baseline costs for model towers range from \$5,100 to \$485,000 respectively for model towers with recirculation rates of 1,000 gallons per minute (gal/min) to 105,000 gal/min. These costs include annualized capital costs for the cooling tower and baseline instrumentation/controller equipment and annual operating costs for the instrumentation/controller equipment and chromium-based water treatment chemicals.

Nationwide annualized incremental cost for the standard is \$14 million. This corresponds to a projected increase of about 6 percent over the annualized costs to operate all IPCT's nationwide. To comply with the standard, the total incremental annualized costs above baseline for model towers range from \$4,270 to \$144,000 for model towers with recirculation rates of 1,000 gal/min to 105,000 gal/min, respectively. These costs include the incremental annualized capital costs for additional instrumentation/controller equipment and the incremental annual operating costs for the additional equipment and the nonchromium-based water treatment chemicals. The total nationwide increase in annual chemical costs to switch existing IPCT's on chromium-based treatment programs to nonchromium-based programs is \$12.5 million. This corresponds to an increase of only 2.5 percent above the total nationwide annual cost of water treatment programs for

all IPCT's and CCT's, which is about \$500 million.

Under the standard, the estimated nationwide annualized cost in 1998 of prohibiting new sources from using chromium is \$1.2 million. This corresponds to a projected increase of about 0.5 percent over the nationwide annualized costs in the absence of regulation.

#### D. Economic Impacts

The economic impacts, which are described below, were not affected by changes made to the rule between proposal and promulgation. Economic impacts were assessed by examining the effect of the elimination of chromium-based water treatment programs on the final end product prices for each affected industry. The results of this assessment indicate that there are no significant economic impacts on the industries to be affected by this regulation.

Typical price increases range from 0.001 percent to 0.04 percent for the affected industries. The industries that have the highest percentage of IPCT's using chromium corrosion inhibitors will bear higher control costs and experience greater economic impacts than relatively minor users of chromium chemical programs. The chemical manufacturing industry, a relatively major user of chromium, will bear the highest compliance cost and, therefore, is the industry that will experience the greatest economic impact with a typical price increase of 0.011 percent and a projected worst-case scenario price increase of 0.33 percent. All other affected industries will experience maximum price increases less than those predicted for the chemical manufacturing industry.

The following criteria are used to determine what constitutes a significant adverse economic impact for small businesses: (1) Annualized compliance costs increase total cost of production by more than 5 percent; (2) capital costs of compliance represent a significant portion of capital available to small entities; (3) requirements of the regulation are likely to result in closures of small entities; and (4) compliance costs as a percentage of sales for small plants are at least 10 percent higher than for large plants. The standard will not have any significant impacts on a substantial number of small entities since none of the above criteria are triggered by this regulation.

#### IV. Publication Participation

Prior to proposal of the IPCT rule, interested parties were advised by public notice in the Federal Register (56 FR 54576, October 22, 1991) of a meeting of the National Air Pollution Control Techniques Advisory Committee (NAPCTAC) to discuss the draft IPCT rule recommended for proposal. That meeting was held on November 19-21, 1991. This meeting was open to the public and each attendee was given an opportunity to comment on the draft IPCT rule.

The proposed rule was published in the Federal Register on August 12, 1993 (58 FR 43028). The preamble to the proposal discussed the availability of the proposal BID (Chromium Emissions from Industrial Process Cooling Towers--Background Information for Proposed Standards'' (EPA-450/R-93-022)), which describes in detail the regulatory alternatives considered and the impacts associated with those alternatives. Public comments were solicited at the time of proposal,

and copies of the proposal BID were made available to interested parties.

The public comment period officially ended on October 12, 1993. A public hearing was not requested; however, 41 comment letters were received. The comments were carefully considered, and where determined to be appropriate by the Administrator, changes were made in the final IPCT rule.

## V. Significant Comments and Responses

Comments on the proposed rule were received from IPCT users, industry trade groups, the U.S. Department of Energy, a chromium chemical supplier, and two air pollution control agencies. A detailed discussion of these comments and responses can be found in the promulgation BID (see ADDRESSES section). The summary of comments and responses in the promulgation BID serves as the basis for the revisions that have been made to the rule between proposal and promulgation.

### A. Selection of Regulatory Authority

Several commenters stated that the EPA should have regulated IPCT's under TSCA, which was the authority used for the CCT rule promulgated in 1990 (55 FR 222). Most of these commenters noted that part of the rationale for selecting TSCA as the authority for the CCT rule was that it was more efficient to place the regulatory burden on a small number of chemical distributors than on the large number of cooling tower owners and operators. These commenters suggested that this same rationale is even more appropriate in the case of IPCT's because the impacted vendor population is even smaller than it was at the time the CCT rule was promulgated, and the enforcement system under TSCA is already in place. In addition, prohibiting sales of chromium water treatment chemicals for use in IPCT's under TSCA would result in the elimination of chromium emissions from all IPCT's, not just those at major sources.

The primary reason the EPA regulated CCT's under TSCA was to simplify enforcement. At the time the CCT rule was promulgated, there were an estimated 250,000 CCT's in operation and fewer than 200 water treatment chemical distributors. By banning the sale and distribution of chromium water treatment chemicals for CCT use under TSCA, the focus of enforcement was directed at the relatively small number of distributors rather than the very large number of potential chromium water treatment chemical users. In the case of IPCT's, the number of affected sources is much smaller, numbering fewer than 800.

The TSCA is an alternative regulatory authority in that, before a standard can be promulgated under TSCA, section 9(b) of TSCA requires the EPA to determine if the risk associated with the action can be prevented or sufficiently reduced under another (primary) regulatory authority. If the risk can be prevented or adequately reduced under another authority, the regulation can be promulgated under TSCA only if the Administrator determines that it is in the ``public interest'' to protect against that risk under TSCA rather than under the primary regulatory authority.

In the case of IPCT's, the risk associated with emissions of chromium from IPCT's can be eliminated under the authority of the Act;

therefore, the Administrator would have to find that regulation of IPCT's under TSCA would satisfy other public interest factors. The primary reason to consider regulating IPCT's under TSCA would be regulatory efficiency. As was the case with CCT's, the number of vendors is much smaller than the population of sources. Thus, it might appear to be more efficient to regulate IPCT's in a fashion similar to CCT's. However, because IPCT's will be permitted under title V of the Act, a permitting system is or will be established for sources with affected IPCT's. Thus, regulating IPCT's under the authority of the Act provides a simple mechanism for enforcement that does not involve significant additional burden on either the regulated sources or enforcement personnel. Although the population of IPCT's is relatively large, the fact that the affected IPCT's are located at permitted facilities is in sharp contrast to the case of CCT's, which are predominantly located at facilities that are not permitted. For these reasons, the Administrator determined that the advantages for regulating IPCT's under TSCA were not compelling enough to satisfy the public interest criteria of section 9(b) of TSCA.

The Administrator acknowledges that not all IPCT's are regulated under this rule. However, the number of IPCT's that use chromium-based water treatment chemicals and are not covered by this regulation is estimated to be less than 1 percent of all IPCT's, and chromium emissions from these area source IPCT's constitute no more than 1 percent of total nationwide chromium emissions from IPCT's.

#### B. Selection of Pollutant to be Regulated

One commenter suggested that the EPA should regulate other HAP's from IPCT's in addition to Cr<sup>+6</sup>. This commenter states that cooling towers that use chlorine to prevent biological growth are also sources of chloroform, dioxin, and other chlorinated organic compounds, which may be emitted in sufficient quantities to pose a health risk. However, the commenter provided no supporting information or documentation.

Currently, the EPA has no information other than this comment that indicates that other listed HAP's are emitted from IPCT's. If, at a later date, however, the regulation of emissions of other HAP's from IPCT's is determined to be warranted, this regulation on IPCT's could be amended to include additional standards that limit other HAP emissions from IPCT's.

#### C. Selection of Sources to be Regulated

Fourteen commenters suggested that the standard should apply only to IPCT's that are using chromium-based water treatment chemicals at the time the standard was proposed or is promulgated because these are the only IPCT's that emit HAP's. Several commenters noted that the Act only authorizes the EPA to develop NESHAP for sources of HAP's, which could not include IPCT's using nonchromium water treatment programs. One commenter stated that by making the NESHAP applicable to all IPCT's, even those that have never used or no longer use chromium-based water treatment chemicals, the EPA would put complying sources in the position of possibly incurring a violation of the standard simply for failure to maintain records to prove that chromium had not been used.

The commenters believed that there is no balance between the burden of the recordkeeping proposed and the benefits that supposedly would flow from those requirements.

Two commenters noted that the applicability statement in the recently promulgated NESHAP for perchloroethylene emissions from dry cleaning facilities states that the standard applies to owners or operators of each dry cleaning facility that uses perchloroethylene. Narrowing the applicability of the IPCT NESHAP in a similar fashion would not affect the environmental benefit to be obtained.

After reviewing the comments received and considering other factors, the EPA has concluded that the applicability of the IPCT rule should be limited to those IPCT's that are operated with chromium-based water treatment chemicals. No environmental benefit would be gained by making the rule applicable to IPCT's that are not operated with chromium-based water treatment chemicals because those IPCT's do not emit chromium compounds. In addition, if the rule were applicable to all major source IPCT's as proposed, owners and operators of IPCT's that have stopped using or have never used chromium-based water treatment chemicals could be subject to fines and penalties despite being in compliance with the standard. For these reasons, the EPA has decided to limit the applicability of the IPCT rule to those major source IPCT's that are operated with chromium-based water treatment chemicals on or after the effective date of the rule.

One commenter believes that the applicability of the standard should be limited to IPCT's operating at or below 65 deg.C (149 deg.F). The commenter suggested that all high-temperature IPCT's should be placed in a separate subcategory because of the technical problems that accompany switching high-temperature IPCT's using high-solids makeup water to nonchromium water treatment programs. The commenter has been told by vendors of settling agents that at about 70 deg.C (158 deg.F), polymeric dispersants will decompose and cause fouling of systems and increased corrosion. In addition, as the cooling water fouls, the process must operate at higher temperatures, which results in higher emissions of nitrogen oxides (NO<sub>x</sub>) from the reactor.

Between the period 1989 and 1992, the EPA conducted an investigation specifically targeted at evaluating the feasibility of using nonchromium-based water treatment programs in IPCT's that serve high temperature processes. Based on information obtained from water treatment chemical vendors, manufacturers of high-temperature-process chemicals, and petroleum refineries, the overwhelming body of evidence indicates that nonchromium water treatment programs are comparable to chromium water treatment programs in overall performance. Therefore, the EPA concluded and continues to believe that there is no basis for exempting IPCT's serving high temperature processes from the rule or to subcategorize the IPCT source category for high temperature processes.

Several commenters suggested that the applicability of the standard be extended to all IPCT's, including area source IPCT's. One commenter stated that South Coast Air Quality Management District (SCAQMD) Rule 1404, which was adopted in April 1990, is applicable to all cooling towers.

Section 112 of the Act allows the EPA to regulate emissions from both major and area sources of HAP emissions. However, prior to regulating area sources, Sec. 112(c) of the Act requires the EPA to make a finding of a threat of adverse effects to human health or the

environment due to HAP emissions from those area sources. The EPA has made no such finding for area source IPCT's. Area source IPCT's are estimated to contribute less than 1 percent of nationwide emissions of chromium from all IPCT's. Therefore, the final rule applies only to IPCT's that are major sources or are integral parts of major sources.

#### D. Compliance Dates

Seven commenters suggested alternative compliance dates ranging from 18 months to 5 years after the effective date for a number of reasons. Owners or operators of IPCT's will need time to work with vendors of nonchromium treatment programs to determine the range of acceptable operating conditions that would accomplish the objectives of water treatment and process cooling. Testing regimes could include numerous changeouts of heat exchanger surfaces over periods of several months to determine rates of corrosion under varying conditions of temperature and quality of makeup water. Potential construction or reconstruction could involve unit shutdown and maintenance and would warrant more time for compliance. Chromium may have soaked into the wooden components of the IPCT's and may be present in the sediment in the recirculating basins. Facilities using makeup water with a high iron concentration may have difficulty switching to nonchromium water treatment programs because iron removal equipment may be required on each cooling tower.

The proposed 6-month compliance period is not long enough to allow for the extensive modifications to IPCT systems, such as the installation of new chemical feed and water quality monitoring equipment, that may be required to switch to nonchromium water treatment systems. Six months may not provide enough time for large industrial complexes with numerous cooling towers to convert to nonchromium-based water treatment chemicals.

To respond to these comments, the Agency reviewed the available information and contacted industry representatives about the length of time required to convert IPCT's that are operating with chromium-based water treatment to nonchromium water treatment. The available information indicates that the actual conversion from chromium to nonchromium-based water treatment chemicals generally requires a period of less than 1 month. However, under worst case conditions, conversion may take as much as 18 months to allow adequate time for reconstruction of the cooling system, installation of chemical feed and control equipment, and other modifications. In addition, some facilities may have to convert as many as 20 IPCT's to nonchromium water treatment programs. The approach taken in such cases is to convert the IPCT's sequentially in groups of two to four IPCT's, and the entire process may take several months to complete.

The EPA recognizes that, to bring some facilities into compliance with the IPCT rule, IPCT owners or operators may need to redesign existing cooling towers systems; install additional pretreatment systems, chemical feed control equipment, and peripheral equipment; convert multiple IPCT's; and establish contracts with vendors for nonchromium water treatment programs. Therefore, the Agency has revised Sec. 63.403 of the final rule to specify a compliance date of 18 months after the effective date for existing IPCT's.

In addition, the EPA recognizes that chromium may continue to leach

out of wooden cooling tower components for a period of months or even years following the discontinuation of chromium-based water treatment. For that reason, the final IPCT rule specifies a de minimis level of 0.5 ppm for residual chromium in cooling water.

#### E. Notification Requirements

Thirty-one commenters addressed the notification requirements of the proposed IPCT rule. The majority of the commenters objected to the requirement for annual certification of compliance status and suggested reducing or eliminating notification requirements altogether.

Several commenters suggested that a one-time notification from all affected IPCT owners and operators would be sufficient to document compliance with the NESHAP. Other commenters stated that notification requirements should be limited to a one-time notification from sources using chromium-based water treatment programs as of the effective date of the standard. Commenters also suggested limiting notification requirements to an initial notification and a one-time submission when compliance is achieved. One commenter stated that the requirement for annual compliance status reports is redundant and provides no protection of air quality.

Several commenters noted that the proposed notification requirements were especially unwarranted because they subject sources already in compliance with the standard (sources that have never used chromium-based water treatment programs and those that have suspended use) to the possibility of fines and penalties merely for violations of notification requirements that the source may have overlooked.

As discussed previously, the Agency has decided to limit the applicability of the IPCT rule to only those IPCT's in which chromium water treatment chemicals are used. Therefore, owners and operators of IPCT's that are not using chromium-based water treatment as of the effective date of the IPCT rule are not subject to the notification requirements.

The EPA has reviewed the arguments presented for eliminating the requirement for annual notification of compliance status and has concluded that annual certifications are not necessary for enforcement purposes and produce no environmental benefit. Therefore, the Agency has decided to eliminate the requirement for owners or operators of affected IPCT's to submit annual compliance status reports. However, owners or operators of IPCT's that use chromium-based water treatment are required to submit an initial notification and, when the use of chromium-based water treatment is discontinued, a notification of compliance status.

Two commenters noted that the proposed notification requirements were redundant with the title V operating permit requirements because the title V operating permit rules also will require an annual compliance certification by a responsible official stating that the source is in compliance with all applicable requirements.

In accordance with Sec. 63.9(b)(3) of the General Provisions to part 63, notifications required under title V that contain all of the information required for part 63 notifications can serve as the part 63 notification. Therefore, owners or operators of affected IPCT's need to submit the required information once; there is no need to submit redundant notifications.

One commenter stated that if an initial notification is required, only the data necessary to demonstrate compliance should be required. The commenter noted that Sec. 63.406(a) of the proposed rule refers sources to Sec. 63.9(b)(2) of the General Provisions, which could be interpreted to require much more information than is required to demonstrate compliance with the IPCT NESHAP.

The Agency recognizes that much of the information specified in Sec. 63.9 of the General Provisions that is to be included in the initial notification is not relevant to IPCT's. For this reason, the EPA has revised Sec. 63.405 of the final IPCT rule to specify the types of information that must be included in both the initial notification and the notification of compliance status for IPCT's.

In addition, the proposed rule did not specify a deadline for submitting the initial notification, but referenced Sec. 63.9(b) of subpart A. The final rule requires that owners or operators of affected IPCT's that have an initial startup before September 8, 1994 submit the initial notification no later than September 8, 1994, and that owners or operators of affected IPCT's that have an initial startup on or after September 8, 1994 submit the initial notification no later than 12 months following the initial startup of the IPCT. Section 63.9(b) of subpart A requires a deadline of 120 days for submitting the initial notification. However, in the case of this rule, the submittal deadline for the initial notification was extended to allow States adequate time to establish and implement title V permit programs.

#### F. Recordkeeping and Reporting Requirements

Nineteen commenters objected to the amount of recordkeeping required by the proposed rule. Although some commenters suggested deleting all recordkeeping requirements for some or all IPCT owners and operators, the majority of commenters objected to the requirement that IPCT owners or operators maintain records of water treatment chemical purchases. Several of the commenters stated that maintaining records of water treatment chemical purchases is unduly burdensome and would not aid enforcement; other records, such as material safety data sheets (MSDS), already maintained by facilities are adequate to demonstrate compliance with the IPCT regulation. A number of commenters suggested limiting chemical purchase recordkeeping requirements to purchases of chromium chemicals only or to purchases of corrosion control chemicals only. Two commenters suggested allowing water sample analysis as the enforcement mechanism instead of maintaining records of water treatment chemical purchases. Several commenters suggested exempting from all recordkeeping those IPCT owners or operators that do not use chromium water treatment chemicals.

Three commenters stated that maintaining records onsite or at the same file location is burdensome, time consuming, and prone to error. One commenter stated that all purchasing records are kept in a central location at each production site but are not separated for specific pieces of equipment such as IPCT's. Another stated that purchasing or invoice records are rarely kept in the same file location as environmental records or MSDS. Another commenter stated that many plants do not have onsite storage space sufficient to maintain 5 years of data. Also, in many cases, water treatment chemicals are purchased centrally, not by individual plants.



As mentioned previously, the final IPCT rule applies only to owners or operators of IPCT's that operate with chromium-based water treatment. After reviewing the comments on recordkeeping requirements for the IPCT rule, EPA has reevaluated the need to require IPCT owners or operators to maintain records of water treatment chemical purchases and has concluded that these requirements are overly burdensome and generally unjustified for this rule. Therefore, the final rule contains no requirements for owners or operators of affected IPCT's to maintain records of water treatment chemical purchases.

The only records that the final IPCT rule requires owners and operators to keep are the initial notification and the notification of compliance status. In cases in which enforcement personnel suspect that chromium water treatment chemicals have been used in violation of the IPCT rule, IPCT owners or operators ultimately are responsible for demonstrating compliance. This demonstration could be through the use of records or other means including sampling and analysis of the IPCT recirculating water in accordance with Method 7196 or Method 3500-Cr D as specified in Sec. 63.404 of the rule.

By eliminating the requirement for maintaining records of water treatment chemical purchases, the recordkeeping requirements for the IPCT rule have been greatly simplified. The Agency believes that the remaining recordkeeping requirements--that IPCT owners or operators maintain copies of the initial notification and the notification of compliance status--are minimal and the burden associated with maintaining these records in the same file location is not significant. Furthermore, the final IPCT rule requires that these records be maintained onsite for a minimum period of 5 years.

#### G. Interaction of the IPCT NESHAP and the General Provisions

Seven commenters objected to the references to the General Provisions included in the IPCT NESHAP. Six commenters stated that the IPCT NESHAP should specifically identify which sections of the General Provisions are applicable to IPCT sources and should specifically override those not applicable. The commenters believe that it is unreasonable to require sources to search through the lengthy and complex General Provisions to identify applicable requirements when the EPA is in a much better position to do this easily. The commenters noted that the length and complexity of the General Provisions, especially compared to the relative simplicity of the IPCT NESHAP, could result in unintended noncompliance if a source misses an applicable General Provisions requirement.

One of the commenters specifically identified Secs. 63.5 (construction and reconstruction), 63.6 (startup, shutdown, and malfunction plans), 63.7 (performance testing), and 63.10 (recordkeeping) as sections of the General Provisions that should be specifically excluded from applicability to IPCT sources because they contain requirements that are meaningless and unnecessary when applied to IPCT's.

One of the commenters stated that all requirements of the IPCT NESHAP should be presented without reference to the General Provisions. The commenter suggested that the IPCT standard specifically state that the General Provisions do not apply to the IPCT NESHAP.

The EPA recognized that many of the requirements of the General

Provisions are not relevant to this rule because they pertain to emission standards rather than to work practice standards. In consideration of the length and complexity of the General Provisions, the EPA has decided to include in the final IPCT rule a table that indicates which sections of the General Provisions are and are not applicable to IPCT's. The EPA did consider repeating relevant General Provisions in the IPCT rule, as suggested by some of the commenters to eliminate the need for owners or operators of affected IPCT's to reference the General Provisions. However, this approach would have a major disadvantage in that it would greatly increase the length of the IPCT rule by requiring the repetition of generally relevant requirements. In addition, if this approach were adopted for all NESHAP, part 63 of the CFR would consist largely of numerous repetitions of the same generally relevant requirements, thus defeating the purpose of the General Provisions.

#### H. Selection of Control Technology

One commenter suggested that the EPA allow high-efficiency drift eliminators (HEDE's) or other techniques to control emissions from high-temperature IPCT's using chromium water treatment programs. This commenter states that with a chromium concentration of 3 ppm in the cooling tower water, an HEDE can reduce emissions from the tower to a level that would not be harmful to human health during the extended period that would be required for conversion to nonchromium-based water treatment programs.

The feasibility of using nonchromium-based water treatment programs in IPCT's that serve high-temperature processes was investigated by the EPA. The investigation concluded that the percentage of high-temperature-process IPCT's that operate without chromium-based water treatment chemicals far exceeds the 12 percent required for establishing the maximum achievable control technology (MACT) floor under Sec. 112(d) of the Act. Therefore, there is no basis for subcategorizing the IPCT source category by process temperature. In addition, using nonchromium water treatment is a pollution prevention measure.

Regarding the use of HEDE's in combination with low-chromium water treatment to reduce the risk associated with chromium emissions to a reasonable level, section 112(d) of the Act requires the EPA to set standards for emissions of HAP's that are no less stringent than the average emission limitation achieved by the best performing 12 percent of sources. The EPA has found MACT to be more stringent than the use of HEDE's. Further, the EPA estimates that HEDE's are used in no more than 5 percent of IPCT's nationwide, use of HEDE's and low-chromium water treatment programs would not eliminate chromium emissions as will nonchromium water treatment, and retrofitting HEDE's does not constitute a pollution prevention measure as defined in the Pollution Prevention Act.

#### I. Cost Impact

One commenter stated that the EPA did not fully address the impact on individual regulated facilities of the high capital cost associated with the equipment upgrade required to switch from chromium-based to

nonchromium-based treatment programs. This commenter states that at one refinery, for example, the conversion to nonchromium water treatment will include adding air coolers, redesigning heat exchangers, and upgrading cooling water headers, which will result in a capital cost of more than \$10 million. Production losses also are anticipated due to increases in fouling of the cooling water system. Another commenter stated that at his facility where the existing chromium systems use a single chromium storage tank and a small pump to add the chromium to the system, conversion to nonchromium treatment programs would require installation of five additional tanks with associated pumps, valves, and control systems at a capital cost of \$750,000. The commenter estimated that the annual cost for several IPCT's would increase by about \$200,000 per year and that the estimated annual costs associated with increased fouling when operating with nonchromium water treatment would be \$600,000 at one location.

To estimate the cost of compliance for this standard, the EPA conducted an extensive investigation into the costs associated with various types of cooling water treatment programs. The information collected included comparative data on the performance of both chromium-based and nonchromium-based water treatment programs, information on costs to convert IPCT's from chromium-based water treatment programs to nonchromium-based water treatment programs, and information on costs associated with operating nonchromium-based programs in IPCT's. The estimated cost of compliance of this rule was based on the information compiled from these investigations. Information obtained from four water treatment vendors that account for more than 60 percent of all IPCT water treatment chemical sales was used by EPA as the basis for estimating the cost of compliance with this rule.

The annualized costs to convert and operate IPCT's on nonchromium-based water treatment chemicals consists of chemical and equipment cost components. The chemical cost component represents the difference in annual chemical costs between chromium-based and nonchromium based chemicals. An average annual cost of nonchromium-based water treatment chemicals supplied by the vendors was determined to be \$126 per million pounds of blowdown. The average annual chromium-based water treatment chemical cost was estimated to be \$72 per million pounds of blowdown. The increase in annual chemical costs range from \$1,314 for an IPCT with a recirculation rate of 1,000 gallon per minute (gal/min) to \$140,937 for an IPCT with a recirculation rate of 105,000 gal/min.

The equipment cost component consists of the equipment capital cost and the annual cost of maintenance and of energy. The equipment requirements to achieve adequate control of nonchromium-based water treatment programs, as indicated by water treatment chemical vendors, include a pH controller, conductivity/blowdown controller, and some (typically two) metering chemical feed pumps. Based on the information compiled by EPA, these are the only additional types of equipment that are mandatory for operating an IPCT on nonchromium-based water treatment after conversion from chromium-based water treatment. Capital costs for this equipment are \$2,000, \$2,000, and \$600 for a basic pH controller, conductivity controller, and metering pump, respectively. The EPA also obtained actual plant-specific information on the costs to convert from chromium-based to nonchromium-based water treatment. Some facilities indicated that no costs were incurred when IPCT's were

converted to nonchromium water treatment chemicals. Other plants incurred costs that far exceeded the average equipment costs described above. However, in such cases, the conversion to nonchromium-based water treatment coincided with several other improvements to the IPCT systems and process equipment that were not requisite for the successful operation of the IPCT systems on nonchromium-based water treatment chemicals.

The equipment cost component of the average annual control costs for the IPCT rule was estimated to be \$2,954. This estimate was made based on the assumption that 50 percent of IPCT's nationwide would require all three types of control equipment and 50 percent of IPCT's nationwide would require two of the three types of control equipment. Therefore, the annualized costs for nonchromium-based water treatment range from \$4,300 for an IPCT with a recirculation rate of 1,000 gal/min to \$144,000 for an IPCT with a recirculation rate of 105,000 gal/min. However, the EPA recognizes that the compliance costs at some facilities may be higher or lower than the average cost per IPCT system used by EPA to estimate the nationwide costs.

It should also be noted that the selection of the regulatory alternative for the IPCT standard was based on MACT. Because more than 90 percent of all IPCT's are operated with nonchromium water treatment, the MACT floor for IPCT's clearly is nonchromium water treatment. Although the Act requires the EPA to consider control costs in determining what level of control beyond the floor is achievable, selection of the standard is technology-based.

#### J. Wording of the Regulation

Two commenters suggested a change to the definition of ``chromium-based water treatment chemicals'' to clarify that chromium that appears only as an impurity in the water treatment chemicals is not included in definition. The commenters note that many chemicals contain trace amounts of chromium from natural impurities or from trace dissolution of steels, and that, as written, the definition does not distinguish between chromium-based water treatment chemicals and other chemicals used in IPCT's that may contain chromium at only trace concentrations. The commenter suggests that any water treatment chemical should not contain more than 1 percent nonhexavalent chromium and 0.1 percent Cr<sup>+6</sup> by weight. According to the commenter, the 1 percent level is appropriate because, under the Occupational Safety and Health Administration (OSHA) hazard communication standard (29 CFR 1910.1200), and regulations implementing the Superfund Amendments and Reauthorization Act of 1986 (SARA), section 313 (40 CFR part 372), the presence of chromium compounds at those concentrations must be noted on the MSDS for the product. In contrast, chromium compounds present at concentrations below these levels will not necessarily be listed, and the purchaser will likely be unaware of them.

The EPA acknowledges that chromium may be present in trace amounts in water treatment chemicals. However, the specification of a minimum chromium impurity level in water treatment chemicals has no relevance to the application or enforcement of this rule. Furthermore, even if an impurity level was relevant, the commenter's suggested level of 0.1 percent Cr<sup>+6</sup>, which is equivalent to 1,000 ppm, and 1.0 percent nonhexavalent chromium, which corresponds to 10,000 ppm, are hardly

appropriate levels when one considers that the Cr<SUP>+6 concentration of the recirculating water treated with a typical chromium-based program is 10 to 15 ppm.

#### K. De Minimis Cooling Water Chromium Concentration

Two commenters suggested that the EPA add a de minimis cooling water chromium concentration to the standard because the recirculating water in an IPCT that is not using chromium-based water treatment chemicals might contain very low but detectable levels of chromium if the components of the IPCT are wooden and chromium chemicals had been used in the tower in the past or if the fresh makeup water to the IPCT contains chromium. Including a de minimis chromium level would prevent potential enforcement actions against owners or operators who are actually in compliance with the standard. In addition, one commenter stated that although the proposed rule states that enforcement personnel could require water sample analysis on a case-by-case basis if they suspect a violation, no compliance concentration level is proposed. The commenter suggested that the EPA set a chromium compliance concentration of 0.15 mg/liter.

The EPA recognizes that some residual chromium may be present in IPCT cooling water that is not treated with chromium-based water treatment chemicals. Raw water supplies may contain trace quantities of chromium; in IPCT's in which chromium water treatment was used, chromium may leach out of wooden components following the discontinuation of chromium use; and chromium is a constituent of some types of wood preservatives and may contribute to cooling water residual chromium concentrations in IPCT's with wooden components. Therefore, the EPA has concluded that there is justification for specifying a de minimis chromium concentration in cooling water.

To determine an appropriate de minimis level, the EPA gathered available data and consulted with industry experts. The recommended useable range for Reference Method 7196, ``Hexavalent Chromium, Colorimetric,`` which is the analytical method specified in Sec. 63.404 for measuring the residual chromium concentration in cooling water, is 0.5 to 50 ppm Cr<SUP>+6 by weight. The available information on the decline of residual chromium in cooling water indicates that residual chromium concentrations are likely to be well below 0.5 ppm within a few months of the discontinuation of chromium water treatment.

Chromium-based water treatment programs can achieve acceptable results in controlling corrosion with chromate concentrations as low as 4 to 6 ppm (1.8 to 2.7 ppm as chromium). Therefore, the residual concentrations of chromium in cooling water in which these low-chromium treatment programs are used are significantly higher than the recommended lower limit of 0.5 ppm for Method 7196. The EPA concludes that a de minimis concentration of residual Cr<SUP>+6 in cooling water of 0.5 ppm is reasonable, and this de minimis level has been incorporated into Sec. 63.404 of the final IPCT regulation. This de minimis Cr<SUP>+6 level is high enough to account for residual chromium concentrations that would result from the leaching of chromium from wooden IPCT components, but is well below any level at which chromium would provide effective corrosion control. Furthermore, to allow adequate time for the residual Cr<SUP>+6 concentration in the cooling water to decline below the de minimis level, the final rule allows a 3

month time period following the compliance date before a Cr<SUP>+6 concentration in excess of 0.5 ppm is considered to be a violation of the standard. The EPA does not believe that a de minimis level of 0.15 ppm chromium is reasonable because this concentration is below the recommended range of chromium concentrations for Reference Method 7196 and because residual chromium concentrations may be as high as 0.15 ppm for many months following the discontinuation of chromium water treatment.

## VI. Administrative Requirements

### A. Docket

The docket for this rulemaking is A-91-95. The docket is an organized and complete file of all the information submitted to or otherwise considered by the EPA in the development of this rulemaking. The principal purposes of the docket are: (1) To allow interested parties a means to identify and locate documents so that they can effectively participate in the rulemaking process; and (2) to serve as the record in case of judicial review (except for interagency review materials) (section 307(d)(7)(A) of the Act). The docket is available for public inspection at the EPA's Air and Radiation Docket and Information Center, the location of which is given in the ADDRESSES section of this notice.

### B. Executive Order 12866

Under Executive Order 12866 (58 FR 51735 (October 4, 1993)), the Agency must determine whether the regulatory action is ``significant'' and therefore subject to OMB review and the requirements of the Executive Order. The Order defines ``significant regulatory action'' as one that is likely to result in a rule that may:

- (1) Have an annual effect on the economy of \$100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- (4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.'

Pursuant to the terms of the Executive Order 12866, it has been determined that this is a ``significant regulatory action.'' As such, this action was submitted to OMB for review.

### C. Paperwork Reduction Act

Information collection requirements associated with this rule have been approved by OMB under the provisions of the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 et seq., and have been assigned OMB control

number 2060-0268. An Information Collection Request (ICR) document has been prepared by EPA (ICR No. 1625.02) and a copy may be obtained from Sandy Farmer, Information Policy Branch, EPA 2136, Washington, DC 20460, or by calling (202) 260-2740.

The public reporting burden for this collection of information is estimated to average 21 hours per respondent in the first year and 6 hours per respondent in the subsequent 2 years. This includes the time required for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked ``Attention: Desk Officer for EPA.''

#### D. Regulatory Flexibility Act

The Regulatory Flexibility Act of 1980 (5 U.S.C. 601 et seq.) requires that a Regulatory Flexibility Analysis be performed for all rules that have ``significant impact on a substantial number of small entities.''. If a preliminary analysis indicates that a proposed regulation would have a significant economic impact on 20 percent or more of small entities, then a regulatory flexibility analysis must be prepared.

Present Regulatory Flexibility Act guidelines defined an economic impact as significant if it meets one of the following criteria:

- (1) Compliance increases annual production costs by more than 5 percent, assuming costs are passed on to consumers;
- (2) Compliance costs as a percentage of sales for small entities are at least 10 percent more than compliance costs as a percentage of sales for large entities;
- (3) Capital costs of compliance represent a ``significant'' portion of capital available to small entities, considering internal cash flow plus external financial capabilities; or
- (4) Regulatory requirements are likely to result in closures of small entities. The results of an economic assessment indicated that compliance costs as a percentage of production costs or as a percentage of sales are both less than 5 percent. Also, capital availability will not be constrained because total control costs are relatively small and would not require extensive financing. Because capital availability is not a constraint, the standard is not likely to result in closure of small entities.

Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that this rule will not have a significant economic impact on a substantial number of small business entities because the number of small business entities that would be affected is not significant.

#### E. Miscellaneous

In accordance with section 117 of the Act, publication of this promulgated rule was preceded by consultation with appropriate advisory

committees, independent experts, and Federal departments and agencies.

This regulation will be reviewed 8 years from the date of promulgation. This review will include an assessment of such factors as evaluation of the residual health risks, any overlap with other programs, the existence of alternative methods, enforceability, improvements in emission control technology and health data, and the recordkeeping and reporting requirements.

List of Subjects

40 CFR Part 9

Environmental protection, Reporting and recordkeeping requirements.

40 CFR Part 63

Air pollution control, Hazardous substances, Incorporation by reference, Reporting and recordkeeping requirements.

Dated: July 29, 1994.

Carol M. Browner,  
Administrator.

For the reasons set out in the preamble, title 40, chapter I, of the Code of Federal Regulations is amended as follows:

PART 9--[AMENDED]

1. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 et seq., 135-136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601-2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 et seq., 1311, 1313d, 1314, 1321, 1326, 1330, 1344, 1345 (d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971-1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g-1, 300g-2, 300g-3, 300g-4, 300g-5, 300g-6, 300j-1, 300j-2, 300j-3, 300j-4, 300j-9, 1857 et seq., 6901-6992k, 7401-7671q, 7542, 9601-9657, 11023, 11048.

2. Section 9.1 is amended by adding a new entry to the table under the indicated heading to read as follows:

Sec. 9.1 OMB approvals under the Paperwork Reduction Act.

\* \* \* \* \*

40 CFR citation	OMB control No.

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National Emission Standards for Hazardous Air Pollutants  
for Source Categories:



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63.403-63.406..... 2060-0268

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PART 63--[AMENDED]

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 et seq.

2. By adding a new subpart Q consisting of Secs. 63.400 through 63.405 to read as follows:

Subpart Q--National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers

Sec.

- 63.400 Applicability.
- 63.401 Definitions.
- 63.402 Standard.
- 63.403 Compliance dates.
- 63.404 Compliance demonstrations.
- 63.405 Notification requirements.
- 63.406 Recordkeeping and reporting requirements.

Subpart Q--National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers

Sec. 63.400 Applicability.

(a) The provisions of this subpart apply to all new and existing industrial process cooling towers that are operated with chromium-based water treatment chemicals on or after September 8, 1994 and are either major sources or are integral parts of facilities that are major sources as defined in Sec. 63.401.

(b) Table 1 of this subpart specifies the provisions of subpart A that apply and those that do not apply to owners and operators of IPCT's subject to this subpart.

Sec. 63.401 Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

Chromium-based water treatment chemicals means any combination of chemical substances containing chromium used to treat water.

Commenced means, with respect to construction or reconstruction of an IPCT, that an owner or operator has undertaken a continuous program of construction or reconstruction or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or reconstruction.

Compliance date means the date by which an affected IPCT is required to be in compliance with this subpart.

Construction means the on-site fabrication, erection, or installation of an IPCT.

Cooling tower means an open water recirculating device that uses fans or natural draft to draw or force ambient air through the device to cool warm water by direct contact.

Effective date means September 8, 1994 for this subpart.

Existing IPCT means any affected IPCT that is not a new IPCT.

Industrial process cooling tower, also written as ``IPCT,`` means any cooling tower that is used to remove heat that is produced as an input or output of a chemical or industrial process(es), as well as any cooling tower that cools industrial processes in combination with any heating, ventilation, or air conditioning system.

Initial startup means the initiation of recirculation water flow within the cooling tower.

Major source means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.

New IPCT means any affected IPCT the construction or reconstruction of which commenced after August 12, 1993.

Owner or operator means any person who owns, leases, operates, controls, or supervises an IPCT.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

Reconstruction means the replacement of components of an affected or a previously unaffected IPCT to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new IPCT.

Responsible official means one of the following:

(1) For a corporation: a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities and either:

(i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or

(ii) The delegation of authority to such representative is approved in advance by the Administrator.

(2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.

(3) For a municipality, State, Federal, or other public agency:

either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of the EPA).

(4) For affected sources (as defined in this part) applying for or subject to a title V permit: ``responsible official'' shall have the same meaning as defined in part 70 of this chapter or Federal title V regulations (42 U.S.C. 7661), whichever is applicable.

Water treatment chemicals means any combination of chemical substances used to treat water in cooling towers, including corrosion inhibitors, antiscalants, dispersants, and any other chemical substances used to treat water.

#### Sec. 63.402 Standard.

No owner or operator of an IPCT shall use chromium-based water treatment chemicals in any affected IPCT.

#### Sec. 63.403 Compliance dates.

The requirements of Sec. 63.402 of this subpart shall be applied on the following schedule:

(a) For existing IPCT's, the compliance date shall be 18 months after September 8, 1994.

(b) For new IPCT's that have an initial startup before September 8, 1994, the compliance date shall be September 8, 1994.

(c) For new IPCT's that have an initial startup on or after September 8, 1994, the compliance date shall be the date of the initial startup.

#### Sec. 63.404 Compliance demonstrations.

No routine monitoring, sampling, or analysis is required. In accordance with section 114 of the Act, the Administrator or delegated authority can require cooling water sample analysis of an IPCT if there is information to indicate that the IPCT is not in compliance with the requirements of Sec. 63.402 of this subpart. If cooling water sample analysis is required:

(a) The water sample analysis shall be conducted in accordance with Method 7196, Chromium, Hexavalent (Colorimetric), contained in the Third Edition of ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW-846, (November 1986) and its Revision I, (December 1987), which are available for the cost of \$110.00 from the Government Printing Office, Superintendent of Documents, Washington, DC 20402, (202) 783-3238 (document number 955-001-00000-1; or Method 3500-Cr D, Colorimetric Method, contained in the 18th Edition of ``Standard Methods for the Examination of Water and Wastewater'' (1992), which is available from the American Public Health Association, 1015 15th Street, NW., Washington, DC 20005. These methods were approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected as a part of Docket A-91-65, located at the Air and Radiation Docket and Information Center, room M1500, EPA

Central Docket Section, 401 M Street, SW., Washington, DC. Copies may be inspected at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(b) On or after 3 months after the compliance date, a cooling water sample residual hexavalent chromium concentration in excess of 0.5 parts per million by weight shall indicate a violation of Sec. 63.402.

#### Sec. 63.405 Notification requirements.

(a) Initial notification. (1) In accordance with Sec. 63.9(b) of subpart A, owners or operators of all affected IPCT's that have an initial startup before September 8, 1994 shall notify the Administrator in writing. The notification, which shall be submitted not later than 12 months after September 8, 1994, shall provide the following information:

- (i) The name and address of the IPCT owner or operator;
- (ii) The address (i.e., physical location) of the affected IPCT;
- (iii) A statement that the notification is being submitted as required by this subpart; and
- (iv) A description of the type of water treatment program used in the affected IPCT, including the chemical name of each corrosion inhibitor ingredient used; the average concentration of those corrosion inhibitor ingredients maintained in the cooling water; and the material safety data sheet for each water treatment chemical or chemical compound used in the IPCT.

(2) In accordance with Sec. 63.9(b) of subpart A, owners or operators of all affected IPCT's that have an initial startup on or after September 8, 1994 shall notify the Administrator in writing that the source is subject to the relevant standard no later than 12 months after initial startup. The notification shall provide all the information required in paragraphs (a)(1)(i) through (a)(1)(iv) of this section.

(b) Notification of compliance status. (1) In accordance with Sec. 63.9(h) of subpart A, owners or operators of affected IPCT's shall submit to the Administrator a notification of compliance status within 60 days of the date on which the IPCT is brought into compliance with Sec. 63.402 of this subpart and not later than 18 months after September 8, 1994.

- (2) The notification of compliance status must:
- (i) Be signed by a responsible official who also certifies the accuracy of the report;
  - (ii) Certify that source has complied with Sec. 63.402 of this subpart; and
  - (iii) Include the information required in paragraph (a)(1)(iv) of this section.
  - (iv) Include the following statement: ``I certify that no chromium-based water treatment chemicals have been introduced since (the initial compliance date) into any IPCT located within the facility for any purpose.''

#### Sec. 63.406 Recordkeeping and reporting requirements.

To demonstrate continuing compliance with Sec. 63.402 of this subpart, the owner or operator of each affected IPCT shall maintain

copies of the initial notification and the notification of compliance status as required by Sec. 63.405 of this subpart for a period of at least 5 years onsite.

Table 1 to Subpart Q--General Provisions Applicability to Subpart Q

Reference	Applies to Subpart Q	Comment
63.1.....	Yes.....	
63.2.....	Yes.....	
63.3.....	No.....	
63.4.....	Yes.....	
63.5.....	No.....	
63.6 (a), (b), (c), and (j).	Yes.....	
63.6 (d), (e), (f), (g), (h), and (i).	No.....	
63.7.....	No.....	
63.8.....	No.....	
63.9 (a), (b)(1), (b)(3), (c), (h)(1), (h)(3), (h)(6), and (j).	Yes.....	
63.9 (b)(2), (b)(4), (b)(5), (b)(6), (d), (e), (f), (g), (h)(2), (h)(4), (h)(5).	No.....	Requirements for initial notifications and notifications of compliance status are specified in Sec. 63.405(a) and Sec. 63.405(b), respectively, of subpart Q; other provisions of subpart A are not relevant to IPCT's.
63.10 (a), (b)(1), (b)(2)(xii), (b)(2)(xiv), (b)(3), (d), and (f).	Yes.....	Section 63.406 requires an onsite record retention of 5 years.
63.10 (b)(2) (i) to (xi), (c), and (e).	No.....	
63.11.....	No.....	
63.12 to 63.15.....	Yes.....	