

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA-HQ-OAR-2004-0004, FRL- ]

RIN 2060-AK16

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

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule; amendment.

**SUMMARY:** On September 8, 1994, we promulgated national emission standards for hazardous air pollutants for industrial process cooling towers. The rule prohibits the use of chromium-based water treatment chemicals that are known or suspected to cause cancer or have a serious health or environmental effect.

Section 112(f)(2) of the Clean Air Act directs us to assess the risk remaining (residual risk) after the application of national emission standards for hazardous air pollutants and to promulgate more stringent standards, if warranted, to provide an ample margin of safety to protect public health or prevent adverse environmental effect. Also, section 112(d)(6) of the Clean Air Act requires us to review and revise the standards, as necessary at least every 8 years, taking into account developments in practices, processes, and control technologies. On October 24, 2005,

based on the findings from our residual risk and technology review, we proposed no further action to revise the standards and requested public comment. Today's final action amends the applicability section of the rule in response to public comments received on the proposed action. The final amendment provides that sources that are operated with chromium-based water treatment chemicals are subject to this standard; other industrial process cooling towers are not covered.

**EFFECTIVE DATE:** [INSERT DATE OF PUBLICATION OF THE FINAL AMENDMENT IN THE FEDERAL REGISTER].

**ADDRESSES:** EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2004-0004. All documents in the docket are listed on the [www.regulations.gov](http://www.regulations.gov) web site. Although listed in the index, some information is not publicly available, i.e., confidential business information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through [www.regulations.gov](http://www.regulations.gov) or in hard copy at the national emission standards for hazardous air pollutants (NESHAP) for Industrial Process Cooling Towers (IPCT) Docket, EPA/DC,

Docket ID No. EPA-HQ-OAR-2004-0004, EPA West, Room B102, 1301 Constitution Ave., NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket Center is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** For questions about the final action, contact Mr. Phil Mulrine, U.S. EPA, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, Metals and Minerals Group (D243-02), Research Triangle Park, North Carolina 27711; telephone number: (919) 541-5289; fax number: (919) 541-5450; e-mail address: [mulrine.phil@epa.gov](mailto:mulrine.phil@epa.gov). For questions on the residual risk analysis, contact Mr. Scott Jenkins, U.S. EPA, Office of Air Quality Planning and Standards, Health and Environmental Impacts Division, Sector Based Assessment Group (C539-02), Research Triangle Park, North Carolina 27711, telephone number: (919) 541-1167, fax number: (919) 541-0840, e-mail address: [jenkins.scott@epa.gov](mailto:jenkins.scott@epa.gov).

**SUPPLEMENTARY INFORMATION:**

Regulated Entities. The regulated categories and entities affected by the NESHAP include:

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Category	NAICS	Examples of regulated
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(IPCT NESHAP). If you have any questions regarding the applicability of the NESHAP to a particular entity, contact either the air permit authority for the entity or your EPA regional representative as listed in 40 CFR 63.13 of subpart A (General Provisions).

Worldwide Web (WWW). In addition to being available in the docket, an electronic copy of today's final action will also be available on the WWW through the Technology Transfer Network (TTN). Following the Administrator's signature, a copy of the final action will be posted on the TTN's policy and guidance page for newly proposed or promulgated rules at: [www.epa.gov/ttn/oarpg](http://www.epa.gov/ttn/oarpg). The TTN provides information and technology exchange in various areas of air pollution control.

Judicial Review. Under section 307(b)(1) of the Clean Air Act (CAA), judicial review of the final action is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit by [INSERT DATE 60 DAYS AFTER PUBLICATION OF THE FINAL AMENDMENT IN THE FEDERAL REGISTER]. Under section 307(d)(7)(B) of the CAA, only an objection to the final action amendment that was raised with reasonable specificity during the period for public comment can be raised during judicial review. Moreover, under section 307(b)(2) of the CAA, the

requirements established by the final action may not be challenged separately in any civil or criminal proceedings brought by EPA to enforce the requirements.

Outline. The information presented in this preamble is organized as follows:

- I. Background
  - A. What is the statutory authority for this action?
  - B. What did the IPCT NESHAP accomplish?
  - C. What were the conclusions of the residual risk assessment?
  - D. What were the conclusions of the technology review?
  - E. What was the proposed action?
- II. Today's Action
  - A. What is today's final action?
  - B. What comments were received on the proposed action?
- III. Statutory and Executive Order Reviews
  - A. Executive Order 12866: Regulatory Planning and Review
  - B. Paperwork Reduction Act
  - C. Regulatory Flexibility Act
  - D. Unfunded Mandates Reform Act
  - E. Executive Order 13132: Federalism
  - F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments
  - G. Executive Order 13045: Protection of Children from Environmental Health and Safety Risks
  - H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use
  - I. National Technology Transfer and Advancement Act
  - J. Congressional Review Act

**I. Background**

- A. What is the statutory authority for this action?

Section 112 of the CAA establishes a comprehensive regulatory process to address hazardous air pollutants (HAP) from stationary sources. In implementing this process, we have identified categories of sources emitting one or more

of the HAP listed in the CAA, and industrial process cooling towers are identified as one such source category. Section 112(d) requires us to promulgate national technology-based emission standards for sources within those categories that emit or have the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year (known as major sources), as well as for certain area sources emitting less than those amounts. These technology-based NESHAP must reflect the maximum reductions of HAP achievable (after considering cost, energy requirements, and non-air health and environmental impacts) and are commonly referred to as maximum achievable control technology (MACT) standards.

In what is referred to as the technology review, we are required under section 112(d)(6) of the CAA to review these technology-based standards no less frequently than every 8 years. Further, if we conclude that a revision is necessary, we have the authority to revise these standards, taking into account "developments in practices, processes, and control technologies."

The residual risk review is described in section 112(f) of the CAA. Section 112(f)(2) requires us to determine for each section 112(d) source category, except area source categories for which we issued a generally available control

technology standard, whether the NESHAP protects public health with an ample margin of safety. If the NESHAP for HAP "classified as a known, probable, or possible human carcinogen do not reduce lifetime excess cancer risks to the individual most exposed to emissions from a source in the category or subcategory to less than one in one million," we must decide whether additional reductions are necessary to provide an ample margin of safety. As part of this decision, we may consider costs, technological feasibility, uncertainties, or other relevant factors. We must determine whether more stringent standards are necessary to prevent adverse environmental effect (defined in CAA section 112(a)(7) as "any significant and widespread adverse effect, which may reasonably be anticipated to wildlife, aquatic life, or other natural resources, including adverse impacts on populations of endangered or threatened species or significant degradation of environmental quality over broad areas."), but in making this decision we must consider cost, energy, safety, and other relevant factors.

B. What did the IPCT NESHAP accomplish?

On September 8, 1994 (59 FR 46350), we promulgated the IPCT NESHAP and required existing sources to comply with the rule requirements by March 8, 1996.

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. The IPCT NESHAP applies specifically to IPCT that use chromium-based water treatment chemicals and are located at major sources of HAP emissions. Standards to control chromium emissions from cooling towers that cool HVAC systems exclusively (comfort cooling towers) were promulgated under section 6 of the Toxic Substances Control Act (55 FR 222, January 3, 1990).

The primary industries that use IPCT include petroleum refineries, chemical manufacturing plants, primary metals processing plants, glass manufacturing plants, rubber products manufacturing plants, tobacco products manufacturing plants, and textile manufacturing plants. When the IPCT NESHAP were promulgated, we estimated that there were approximately 6,945 IPCT located at these plants nationwide, and that approximately 260 of these IPCT used chromium-based water treatment chemicals. We estimated that the IPCT NESHAP would reduce emissions of chromium compounds

from these facilities by 22.7 megagrams per year (Mg/yr) (25 tons per year (tpy)) by prohibiting the use of chromium-based water treatment chemicals in IPCT. In addition, we estimated that the NESHAP would prevent emissions of 1.6 Mg/yr (1.8 tpy) of chromium compounds from the 870 new IPCT projected by the 5th year of the standards (1998).

When the NESHAP were promulgated, we had no information that indicated that HAP other than chromium compounds were emitted from IPCT. Consequently, we did not address emissions of other HAP in the IPCT NESHAP.

C. What were the conclusions of the residual risk assessment?

As required by section 112(f)(2) of the CAA, we prepared a risk assessment to determine the residual risk posed by IPCT after implementation of the NESHAP. To evaluate the residual risk for the IPCT source category, we identified the HAP emitted from IPCT and, as a discretionary matter in this instance, estimated worst-case emission rates for each of those HAP. These worst-case emission rates were used, along with facility parameters representing an actual facility, to perform the risk assessment.

Because the IPCT NESHAP prohibits the use of chromium-based water treatment chemicals in IPCT, we believe that chromium compound emissions from IPCT have been eliminated

by the NESHAP. In assessing the residual risk for the source category, however, we also considered emissions of other HAP from IPCT.

In the absence of process leaks or malfunctions, the chemical species that are emitted from IPCT consist of the naturally-occurring constituents of the cooling water and any substances that are added to the cooling water. To determine what other HAP may be emitted from IPCT, we first contacted suppliers of cooling water treatment chemicals for information on cooling water additives that either contain HAP or form HAP, which could be emitted from IPCT. Then, we conducted a literature search for information on emissions from cooling towers. The information collected from the water treatment chemical suppliers and through the literature search indicated that some biocides used to treat industrial cooling water either contain HAP or form HAP that can be emitted from IPCT. These HAP include chloroform, methanol, and ethylene thiourea.

Industrial process cooling towers typically use one and not all of the biocides that release the three listed HAP at any given time. Therefore, IPCT emit no more than one of the three listed HAP. We estimated worst-case emission rates for chloroform, methanol, and ethylene thiourea based on the range of concentrations of these constituents in

cooling water and the model plants developed for the IPCT NESHAP. We used these emission rates to model exposure concentrations surrounding those sources, calculated the risk of possible chronic cancer and noncancer health effects, evaluated whether acute exposures might exceed relevant health thresholds, and investigated human health multipathway and ecological risks.

Consistent with the tiered modeling approach described in the "Residual Risk Report to Congress" (EPA-453/R-99-001), the risk assessment for this source category started with a simple assessment which used conservative assumptions in lieu of site-specific data. The results demonstrated negligible risks for potential chronic cancer, chronic noncancer, and acute noncancer health endpoints. Also, no significant human health multipathway or ecological risks were identified. Had the resulting risks been determined to be non-negligible, a more refined analysis with site-specific data would have been necessary. The assessment is described in detail in the memorandum "Residual Risk Assessment for the Industrial Process Cooling Source Category," which is available in the docket.

Since our assessment shows that sources subject to the IPCT NESHAP pose maximum lifetime excess cancer risks which are significantly less than 1 in 1 million, EPA concluded

that public health is protected with an ample margin of safety, and since noncancer health risks and ecological risks were also found to be insignificant for this source category, EPA is not obligated to adopt standards under section 112(f) of the CAA.

D. What were the conclusions of the technology review?

Section 112(d)(6) of the CAA requires EPA to review, and revise as necessary (taking into account developments in practices, processes, and control technologies), emission standards promulgated under section 112 no less often than every 8 years. As we stated in the preamble to the Coke Ovens residual risk rule (70 FR 20009, April 15, 2005), and as discussed below, the facts underlying a section 112(f) determination should be key factors in making any subsequent section 112(d)(6) determinations. For this and several other source categories, we were under consent decree deadlines to complete both the section 112(d)(6) technology review and the section 112(f)(2) residual risk analysis by the same date. As a result, we conducted the two reviews concurrently and did not have the results of the section 112(f)(2) analysis before we began the section 112(d)(6) technology review.

For the IPCT source category, the emission standards imposed an absolute prohibition on the use of chromium-based

water treatment chemicals in IPCT. As the emission standards imposed for this particular source are already at the most stringent level, no more stringent standards could be imposed. Nor has EPA received any evidence which would justify a downward revision of the standards. In the residual risk analysis discussed above, EPA has considered risks for HAP emissions that are not currently subject to emission standards but are attributable to the source category or subcategory. Since the risk from other HAP emitted from IPCT due to the addition of water treatment chemicals was determined to be very low and the emission standards already preclude the use of chromium-based water treatment chemicals, we concluded that no further controls are necessary under 112(d)(6).

E. What was the proposed action?

On October 24, 2005 (70 FR 61411), based on the findings from our residual risk and technology review, we proposed no further action to revise the NESHAP and requested public comment.

**II. Today's Action**

A. What is today's final action?

Today's final action responds to public comments received on the proposed action and announces our final decision to amend the applicability section of the rule.

B. What comments were received on the proposed action?

In the proposed action, we requested public comment on our residual risk review and our technology review and on issues of delisting the source category and conducting future technology reviews. By the end of the public comment period, comments from nine entities had been received. A summary of the major comments and EPA's responses are provided below in sections II.B.1 through II.B.7 of this preamble.

1. Residual Risk Approach

Comment: Two commenters urged EPA to carefully lay out the context and framework of the Residual Risk Program to ensure that the public understands the program and can adequately evaluate EPA's decisions regarding residual risk. The commenters identified several specific aspects of the program, which they believe need to be conveyed to the public. Among those, they included: the success of the MACT program in controlling HAP emissions; further regulatory steps are not required if EPA determines that existing MACT standards have provided an ample margin of safety; and the public can be assured that residual risk rules will provide such a margin of safety in those cases where the standard has not achieved an ample margin of safety. The commenters also stated that it is important for

EPA to put the risks associated with major stationary sources in the proper context. The commenters stated that major stationary sources account for only a small percentage of the estimated cancer risk from HAP nationwide. In addition, they urged EPA to present risk from air toxics in context with the risks from other forms of air pollution. Specifically, they pointed out that the unit risk factors assigned to air toxics are much more conservative than the factors assigned to criteria pollutants. As a result, risk estimates for criteria pollutants should not be compared to estimates of risk based on HAP emissions from stationary sources subject to NESHAP.

Response: We agree that it is important to provide context for any residual risk rule. In this preamble, we describe the MACT program and its impact on the IPCT source category. We also describe our statutory authority and our obligations to assess risks to human health and the environment under section 112(f) of the CAA, as well as the requirement to further regulate categories of sources if any of the estimated individual cancer risks exceed the statutory trigger level of 1 in 1 million.

The risks posed by any individual major stationary source depend upon a number of factors, including emission rates at the source, proximity of exposed populations to the



emission source, the specific HAP emitted, local meteorological conditions, and terrain conditions surrounding the source. Therefore, the relative contribution of a particular major stationary source to individual risk levels in its vicinity will vary dramatically depending on the local conditions at and around that specific source. This variability is not captured by the national average contribution of major sources to population risk levels mentioned by the commenter, whereas the risk assessments we perform for the purposes of evaluating residual risk are designed specifically to capture localized individual risks associated with individual sources.

We agree that our screening risk assessment for the IPCT source category appropriately contains a number of health-protective assumptions and uses health-protective inhalation risk values. The overall result is a screening assessment that is designed to overestimate, rather than underestimate, risks. The commenters make the seemingly contradictory arguments that we should both present risks from air toxics in the context of those from criteria pollutants and that it is inappropriate to make direct comparisons between assessments of risk for air toxics and criteria pollutants. Given the different goals of the

residual risk program and the criteria pollutant program, we agree with their second point that estimates of risk generated for air toxics are not directly comparable to those generated for criteria pollutants.

Comment: Four commenters expressed support for EPA's tiered approach to evaluating residual risk by first performing a screening assessment, followed by a refined assessment. One commenter commented that, if a screening risk assessment based on conservative assumptions showed that risks are negligible, no further assessments or actions should be taken. All four commenters stated that EPA must proceed with the refined approach unless, as was the case for IPCT, the worst-case screening assessment indicates that the risk is less than 1 in 1 million. One commenter stated that in evaluating the residual risk for IPCT, EPA correctly used the same approach used for the 1989 Benzene NESHAP (40 CFR part 61, subpart Y).

Response: We acknowledge the commenters' support of our general approach to risk assessment and agree that, had risks from the IPCT exceeded the statutory trigger of 1 in 1 million cancer risk or exceeded a similar level of protection for threshold effects, we would have conducted a more refined assessment.

Comment: Three commenters stated that, when presenting

the results of the initial screening assessment, it is important for EPA to explain the conservative nature of the assumptions and the limitations of this approach to avoid any misperceptions by the public. Two of the commenters added that otherwise, the public may mistakenly believe that the contribution to risk from major stationary sources is much greater. The commenters also encouraged EPA to use the most accurate emission data and models to ensure accurate risk assessments and to avoid mischaracterizing the risk from the regulated sources. One commenter added that site-specific data should be used in residual risk assessments when possible.

Response: We agree that our risk assessment for IPCT contains a number of health-protective assumptions resulting in a screening assessment that is designed to overestimate, rather than underestimate, risks. However, the health-protective assumptions incorporated into this screening risk assessment are appropriate because we are generalizing the results from a single model facility to all cooling towers in the source category. We designed this approach to ensure that the model facility presents at least as much risk as the worst-case actual facility. Then, by demonstrating that risks from our worst-case model facility are low, we can easily conclude that risks from IPCT at any actual facility

will also be low.

The details of our risk assessment can be found in the memorandum titled, "Residual Risk Assessment for the Industrial Process Cooling Towers Source Category," which is available in the docket. As indicated above, a number of health-protective assumptions are incorporated into the assessment. For example, we based the configuration of our model facility on one of the largest and highest-emitting actual facilities in the IPCT source category. We estimated worst-case emission rates for this facility by assuming that it emitted methanol, ethylene thiourea, and chloroform from its cooling towers even though it is unlikely that any actual towers would emit more than one of these HAP. We assumed that individuals are exposed to IPCT emissions for 24 hours per day and 365 days per year for 70 years although the activity patterns of actual individuals would decrease exposure. Finally, we assumed that people lived at locations very close to the cooling towers. Often, these locations would actually be within the facility's fence line, where no one actually resides. This combination of health-protective assumptions is appropriate for the IPCT assessment because it allows us to generalize the low-risk finding from a single model source to all sources in the category. If we had not been able to use this approach to

make the low-risk finding, we would indeed have collected more refined, site-specific data to develop a more precise risk assessment, but, in this situation, that step was not necessary.

## 2. Co-Located Sources

Comment: Four commenters agreed with EPA's approach of considering the risk associated with the specific sources regulated by the NESHAP and not considering co-located sources. Two of the commenters noted that the risk attributed to co-located sources will be evaluated when the appropriate source category is reviewed under section 112(f) of the CAA. The commenters stated that section 112(f) clearly indicates that Congress intended the residual risk assessment for a specific source category to focus on the source category, as defined in the rulemaking under section 112(d), and not to encompass other source categories.

Response: We agree with commenters that the risks attributable to sources collocated with IPCT will be evaluated when the appropriate category is reviewed under section 112(f). We do not agree that our section 112(f) residual risk analyses must always focus only on the source category as defined in the rulemaking under section 112(d) or that Congress intended to limit all residual risk analyses to the individual source categories in question.

As we stated in the preamble to the Coke Ovens residual risk rule (70 FR 19998, April 15, 2005), "EPA disagrees that section 112(f) precludes EPA from considering emissions other than those from the source category or subcategory entirely." Rather, we have concluded that, when the statutory risk trigger is exceeded, the two-step approach set forth in the preamble to the Benzene NESHAP (54 FR 38044, September 14, 1989) remains the approach that we should follow in determinations under section 112(f). At the first step, when determining "acceptable risk," we will consider risks that result from emissions from the source category only. However, during the second step, we must determine whether additional reductions should be required to protect public health with "an ample margin of safety." EPA believes that one of the "other relevant factors" that may be considered in this second step is co-location of other emission sources that augment the identified risks from the source category. In the case of coke ovens, this included the consideration of co-located source categories that are integral parts of the same industrial activity. Additional information regarding co-located sources and 112(f) requirements is provided in the preamble to the coke oven residual risk rule (70 FR 19996).

### 3. Approach When No Pre-existing NESHAP Level of Control

Exists

Comment: Three commenters responded to our request for comment on the approach to evaluating residual risk when no pre-existing NESHAP requirement exists for the HAP emissions. For example, in the case of IPCT, the residual risk assessment considered three HAP that were not regulated under the NESHAP. The commenters agreed with EPA's approach, stating that it is appropriate to evaluate and control emissions of other HAP if those HAP pose an unacceptable level of risk.

Response: We acknowledge the commenters' support of our approach to evaluating residual risk by considering all HAP emitted by the regulated source category. Section 112(f) requires EPA to determine if an ample margin of safety has been provided for the source category and as part of that determination we identified other HAP that are emitted from the source category.

#### 4. Subcategorizing Source Categories to Satisfy CAA Section 112(f)(2)

Comment: Five commenters responded to our request for comment on the possibility of subcategorizing source categories for the purpose of satisfying the residual risk requirements specified in section 112(f)(2) of the CAA. All five commenters supported the concept of subcategorizing

source categories characterized by a broad range of risk levels. Four of the commenters noted that section 112(c) gives EPA broad discretion in creating and modifying categories and subcategories of sources. By subcategorizing, EPA can distinguish between lower risk subcategories and those categories for which additional control is warranted. One of the commenters pointed out that emission characteristics, which vary by subcategory, define the risk of adverse health and environmental impacts. Therefore, establishing separate subcategories on the basis of risk would be consistent with, and would best achieve, the overall statutory mandate of section 112 of the CAA. The same commenter stated that Congress provided a mechanism and criteria for subcategorizing with respect to risk in sections 112(c)(9)(B)(i) and (ii) to preclude overregulating sources that can meet consistent low-risk criteria. Four of the commenters believed that subcategorizing with respect to residual risk would encourage sources to develop site-specific approaches for reducing risk in order to avoid additional regulatory control, work practices, and associated permitting costs. One commenter stated that the intent of Congress was that EPA should focus MACT standards and residual risk requirements on those sources that present a risk of concern. Two of the commenters cited the



"Residual Risk Report to Congress" (EPA-453/R-99-001), which supports the concept of regulating only those sources within a source category associated with unacceptable risk. Three of the commenters commented that sources within a lower risk subcategory would still be subject to the NESHAP and would have to continue complying with the standard in order to maintain its low-risk status. The commenters further explained that, even if EPA decides not to subcategorize based on risk, residual risk standards should focus only on the subset of sources that poses unacceptable risk.

Response: We acknowledge the commenters' support for subcategorizing based on risk in order to satisfy section 112(f)(2) of the CAA. For the IPCT source category, our risk assessment indicated that all sources in the category are low-risk. Therefore, there is no need, in the present case, to subcategorize based on risk or any other criteria.

#### 5. Emissions from IPCT

Comment: One commenter commented on our conclusion that emissions of chlorine from IPCT are unlikely under normal operating conditions. We based this conclusion on discussions with water treatment chemical suppliers and information presented in several technical publications on water treatment, all of which clearly stated that chlorine emissions occur only under acidic conditions (i.e., pH of

3.0 or less), and IPCT water treatment programs are designed to maintain alkaline conditions (i.e., pH of 7.5 to 9.0) in the cooling water. The commenter stated that IPCT that are treated with chlorine gas ( $\text{Cl}_2$ ) experience significant flash-off of molecular chlorine. He noted that one facility estimated that chlorine emissions from flash-off amounted to 18 percent of the chlorine gas used to treat the cooling water in an IPCT, and that annual emissions of chlorine from the IPCT were estimated to be 18.2 tons. The commenter did not provide documentation for that estimate. However, he did cite a report prepared by the University of Texas for the Texas Natural Resource Conservation Commission (TNRCC), "Emission Inventory for Atomic Chlorine Precursors in Southeast Texas," which supports his comments regarding chlorine emissions due to flash-off from IPCT. The TNRCC Report also states that the greater the pH, the greater the flash-off rate, which may appear to contradict our conclusion regarding the relationship between pH and  $\text{Cl}_2$  emissions from IPCT.

Response: As noted above, the commenter did not provide documentation for the estimate of 18.2 tpy of chlorine emissions from a single IPCT. We assume that the basis for that estimate was the TNRCC Report. We reviewed the TNRCC Report, as well as the primary references used as

the basis for the chlorine emission estimates presented in the report. Based on our review, we maintain our conclusion that emissions of  $\text{Cl}_2$  from IPCT are not likely to occur under normal operating conditions.

With respect to the discrepancy between our conclusions regarding emissions of chlorine from IPCT, the statement by the commenter, and the information presented in the TNRC Report, there are two issues that must be resolved: (1) which chlorine species are emitted from IPCT, and (2) what is the relationship between those emissions and the pH of the cooling water.

When gaseous chlorine is added to cooling water, it dissociates to form hypochlorous acid ( $\text{HClO}$ ), hydrogen ( $\text{H}^+$ ), and chloride ( $\text{Cl}^-$ ) ions. The  $\text{HClO}$  further dissociates to form hypochlorite ( $\text{ClO}^-$ ) and  $\text{H}^+$  ions. With respect to the chlorine species emitted, the TNRCC Report presents estimates assuming that chlorine emissions are entirely in the form of  $\text{Cl}_2$ . The Report does not provide the basis for this assumption, but does note that ". . . chlorine may be released as  $\text{HClO}$ ,  $\text{Cl}_2$ , or in other chemical forms . . ." The Report later states that emissions ". . . may be in the form of  $\text{HOCl}$  rather than  $\text{Cl}_2$ ." Apparently, because the focus of the TNRCC Report was the magnitude of the emissions rather than the form of the chlorine emitted, the

researchers did not attempt to determine which chlorine species would be emitted. The primary references cited in the TNRCC Report regarding chlorine emissions from IPCT are two journal articles from 1984 by Holzwarth, et. al. The introduction to the first of those articles explains that chlorine gas added to cooling water ". . . immediately reacts with water to form HOCl and HCl." All of the subsequent discussion and calculations in both papers regarding flash-off are in terms of HOCl and other non-Cl<sub>2</sub> chlorine compounds. In fact, Cl<sub>2</sub> is not mentioned again in either article. In other words, the Holzwarth articles support our conclusion that chlorine is not emitted from IPCT in the form of Cl<sub>2</sub>.

With respect to the relationship between pH and emissions of chlorine species, we do not argue that emissions from flash-off may increase with increasing pH. However, our assessment concluded that these emissions would be entirely in the form of HOCl and not as Cl<sub>2</sub>. The studies by Holzwarth, et. al. also support this conclusion, that emissions of HOCl increase with increasing pH, while emissions of Cl<sub>2</sub> decrease with increasing pH.

In summary, we believe our conclusions regarding emissions of Cl<sub>2</sub> from IPCT are correct. Neither the commenter, nor the references cited by the commenter provide

any basis for concluding otherwise.

#### 6. Delisting the IPCT Source Category

Comment: Six commenters responded to our request for comment on the issue of delisting the IPCT source category in light of the results of the residual risk assessment. Two of the commenters opposed delisting the source category; one of the commenters supported delisting; and the other commenters, although not opposed to delisting, found no compelling reason to do so. One of the commenters who opposed delisting stated that delisting the source category would not be appropriate because such action would allow owners and operators of IPCT to revert back to using chromium water treatment chemicals. The commenter also noted that delisting the source category would require State and local agencies to amend their rules accordingly. Because there would not be a NESHAP to adopt by reference, State and local agencies would be required to develop and adopt their own regulations on IPCT. In addition, the commenter pointed out that some regulatory agencies are prevented from adopting rules that are more stringent than Federal requirements. In those cases, States and local agencies would have no legal means of preventing IPCT owners and operators from resuming the use of chromium water treatment chemicals in IPCT.

The other commenter who opposed delisting stated that, if the source category were delisted, there would be nothing to prevent sources from increasing their HAP emissions substantially or changing their processes to emit new HAP, either of which could result in HAP levels that are unacceptable to public health and the environment. He noted that such action would disregard the possibility that HAP emissions have been reduced to an acceptable level because of the NESHAP.

Three of the commenters were not opposed to delisting the IPCT source category, but remarked that there was no compelling reason to do so. The commenters noted that, even though the IPCT NESHAP does not apply to any existing sources, it is possible for the rule to apply to sources in the future. The commenters gave the example of an area source, which operated an IPCT using chromium water treatment chemicals and later became a major source. Once the facility became a major source, it would be subject to the NESHAP and would have to discontinue the use of chromium water treatment chemicals. The commenters stated that, on the other hand, delisting a source category does not affect the applicability of an existing NESHAP. The commenters explained that the applicability of the Asbestos NESHAP (40 CFR part 61, subpart M) was unchanged after the source

category was delisted. Finally, the commenters pointed out that none of the applicability requirements of 40 CFR part 63 standards (i.e., NESHAP) depend on source category listing.

One of the commenters supported delisting the IPCT source category. The commenter stated that our request for comment on this issue implied that we interpreted section 112(c)(9) of the CAA to apply only before a MACT standard has been promulgated. According to the commenter, section 112(c)(9) grants EPA the authority to delist a source category whenever the Administrator determines that the risks meet the established criteria. The commenter noted that delisting source categories based on risk prior to establishing standards under section 112(d) actually would conflict with the sequence of EPA's duties under section 112, which requires EPA to evaluate residual risk 8 years after promulgation. In addition, the commenter pointed out that EPA would likely not have sufficient data to fully assess the risk until several years after a standard had been in place. Finally, if EPA were to delist the source category, section 112(c)(9) could still be used to establish requirements to ensure that the risk remains within acceptable levels if EPA were to conclude that the risk associated with the source category could become

unacceptable in the future.

Response: Based on our risk assessment of the IPCT source category, we have concluded that these sources are low-risk and, therefore, that no further standards are required to protect public health with an ample margin of safety or to protect the environment. However, we agree with the commenter who argues that this conclusion is based, at least in part, on the fact that the MACT requirements for these sources prevent IPCT from using chromium-based water treatment strategies. Further, we disagree with the comment that delisting would not affect the existing NESHAP. The commenter cited the delisting action following the Asbestos NESHAP as support for their argument, noting that the applicability of that rule was not affected by delisting. However, the Asbestos NESHAP was established under 40 CFR part 61, which is not directly relevant in this situation since the IPCT NESHAP is a 40 CFR part 63 rule. If we delist this source category, it is our opinion that existing facilities with IPCT would no longer be subject to the NESHAP and would not be banned from using chromium. If any sources reverted to using chromium, risks could increase, and the basis for our finding that the source category is low-risk would be compromised. Thus, since compliance with the MACT standard is part of the basis for our low-risk



determination, we believe our policy objectives are best served if we do not delist the IPCT source category. However, as long as the NESHAP exists and prohibits the use of chromium-based water treatment chemicals, we agree with the commenters who suggest that IPCT sources no longer using these chemicals should not be subject to this NESHAP. Therefore, we are amending the applicability section of the rule to clarify that sources no longer using chromium-based water treatment chemicals are not subject to this NESHAP. The NESHAP remains in effect, and any source that uses chromium-based water treatment chemicals will be subject to the rule and in violation.

Contrary to one commenter's contention, we do not interpret section 112(c)(9) of the CAA to apply only before a MACT standard has been promulgated, although that is expected to be the situation in which it is most likely exercised. We agree that section 112(c)(9) grants EPA the authority to delist a source category when the Administrator determines that risks meet the established criteria, including after promulgation of a MACT standard.

The Agency would like to remove the burden of the repetitive review of Section 112 standards for low risk source categories. At the same time, we think it is appropriate to maintain the MACT controls in this case. We

plan to further investigate approaches for removing low-risk source categories from the Section 112 universe while maintaining MACT-level controls. An example of a similar approach is found in the Plywood and Composite Wood Products MACT where we allow a subcategory of facilities to reduce emissions to acceptable risk levels through Title 5 permits and remove them from the MACT universe.

#### 7. Technology Reviews Under CAA Section 112(d)(6)

Comment: One commenter remarked that EPA should not have conducted an initial technology review of the IPCT source category. The commenter explained that once a residual risk determination indicates the risk is acceptable, EPA must find that revising the standard under CAA section 112(d)(6) is not necessary. The commenter stated that the legislative history of the CAA demonstrates that Congress rejected imposing controls beyond levels considered to be safe and protective of public health because those controls would impose regulatory costs without any public health benefit. The commenter stated that, if Congress had intended EPA to conduct technology reviews regardless of the outcome of the residual risk assessment, there would be no need for CAA section 112(f). The commenter believes that technology reviews under section 112(d)(6) were meant to be regulatory backstop authority for

residual risk reviews, similar to the MACT hammer provision in section 112(j) of the CAA. That is, if EPA failed to address the residual risk for a source category, section 112(d)(6) authority could be used to ensure that advances in technology could still be applied to the source category.

Response: We disagree with the comment that we should not have conducted an initial technology review under CAA section 112(d)(6) for the IPCT source category. The timing requirements for the initial analysis under section 112(d)(6) coincide with those for the residual risk analysis. Thus, it is appropriate for us to conduct both analyses at the same time. Although the results of the risk analysis may impact future section 112(d)(6) technology reviews, these results do not negate the need to perform the initial review. Additional information regarding the relationship between residual risk standards and 112(d)(6) review requirements is provided in the preamble to the Coke Oven residual risk rule (70 FR 20008, April 15, 2005).

Comment: Seven commenters responded to our request for comment on continuing technology reviews every 8 years for source categories subject to NESHAP, as required by section 112(d)(6) of the CAA. Four commenters stated that EPA should not use a "bright line approach" in determining the need for technology reviews under section 112(d)(6) of the

CAA. For example, the decision of whether or not to perform a technology review should not be based on a 1-in-1-million risk level, as is the case for residual risk. One of those commenters stated that discontinuing technology reviews would be contrary to the requirements of the CAA. The commenter noted that the phrase ". . . every 8 years" implies a continuum rather than a single action, and if Congress had intended the technology review to be a one-time requirement, it would have used other language in the CAA. As an example of a one-time requirement, the commenter cited CAA section 112(n)(1), which states that "The Administrator shall conduct, and transmit to Congress not later than 4 years after the date of enactment . . ." The other commenter who opposed discontinuing technology reviews remarked that, without future reviews, it is unlikely that EPA would know what new technologies have been developed or know of any unforeseeable circumstances that might substantially change the source category or its emissions.

Three of the commenters stated that, by implementing residual risk requirements under section 112(f) or determining that residual risk requirements are not warranted, EPA completes its obligation to conduct technology reviews under section 112(d)(6) of the CAA. Thus, once the residual risk has been evaluated and the

appropriate action taken, technology reviews are no longer required. However, the commenters also stated that later technology reviews may be appropriate if the ample margin of safety established by the residual risk process is based largely on cost or technical feasibility, and feasible, cost-effective controls are identified in the future. Four of the commenters stated that technology reviews under section 112(d)(6) should not provide for a continuing technology ratchet based on the availability of new technology. Instead, technology reviews should be conducted in the context of providing an ample margin of safety under section 112(f) of the CAA.

Response: We agree that a technology review is required every 8 years for emission standards under 112(d) or if new standards are issued pursuant to 112(f). However, if the ample margin of safety analysis for a section 112(f) standard shows that remaining risk for non-threshold pollutants falls below 1 in 1 million and for threshold pollutants falls below a similar threshold of safety, then further revision would not be needed because an ample margin of safety has already been assured. Additional information regarding the relationship between residual risk standards and 112(d)(6) review requirements is provided in the

preamble to the Coke Oven residual risk rule (70 FR 20008, April 15, 2005).

Comment: Four commenters commented that technology reviews under section 112(d)(6) should be limited to emission standards already established under section 112(d). Three of the commenters stated that, although it is appropriate to evaluate and control emissions of other HAP not regulated by the NESHAP under section 112(f), such HAP should not be considered under the section 112(d)(6) technology review.

Response: The emission standards imposed a prohibition on the use of chromium-based water treatment chemicals in IPCT. Since the risk from other HAP emitted from IPCT due to the addition of water treatment chemicals was determined to be very low and the emission standards already preclude the use of chromium-based water treatment chemicals, we concluded that no further controls are necessary under either 112(f) or 112(d)(6). As stated previously, section 112(d)(6) requires that the emission standard be reviewed and revised as necessary no less often than every 8 years. Additional information regarding the relationship between residual risk standards and 112(d)(6) review requirements is provided in the preamble to the residual risk for coke ovens (70 FR 20008, April 15, 2005).

### III. Statutory and Executive Order Reviews

#### A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), EPA must determine whether a regulatory action is "significant" and, therefore, subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order. The Executive 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 Executive Order 12866, OMB has notified EPA that it considers this a "significant

regulatory action" within the meaning of the Executive Order. EPA has submitted this action to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

B. Paperwork Reduction Act

The final rule amendment does not impose any information collection burden. It will not change the burden estimates from those previously developed and approved for the existing NESHAP. OMB has previously approved the information collection requirements contained in the existing regulation (40 CFR part 63, subpart Q) under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501, et seq. (OMB control number 2060-0268). However, this information collection request has been discontinued because the information requested in the original regulation is no longer needed.



Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR part 63 are listed in 40 CFR part 9.

C. Regulatory Flexibility Act

EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this final rule amendment.

For purposes of assessing the impacts of today's final

rule amendment on small entities, small entity is defined as: (1) a small business as defined by the Small Business Administration at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district, or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's final rule amendment on small entities, EPA has concluded that this final action will not have a significant economic impact on a substantial number of small entities. The final rule amendment does not impose any requirements on small entities.

#### D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the

private sector, of \$100 million or more in any 1 year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

The EPA has determined that the final rule amendment does not contain a Federal mandate (under the regulatory provisions of Title II of the UMRA) for State, local, or tribal governments or the private sector because it imposes no enforceable duty on any State, local, or tribal governments or the private sector. Thus, today's final amendment is not subject to the requirements of sections 202 and 205 of the UMRA. In addition, EPA has determined that the final amendment contains no regulatory requirements that might significantly or uniquely affect small governments, because it contains no requirements that apply to such governments or impose obligations upon them.

E. Executive Order 13132: Federalism

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

Today's final amendment does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Thus, Executive Order 13132 does not apply to the final amendment.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

Executive Order 13175, entitled "Consultation and Coordination with Indian Tribal Governments" (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." The final amendment does not have tribal implications as specified in Executive Order 13175. It will not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to today's final amendment.

G. Executive Order 13045: Protection of Children from Environmental Health and Safety Risks

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any rule that: (1) is determined to be “economically significant” as defined under Executive Order 12866 and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, EPA must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by EPA.

The final amendment is not subject to the Executive Order because it is not economically significant as defined in Executive Order 12866 and because EPA does not have reason to believe the environmental health or safety risks addressed by this action present a significant disproportionate risk to children.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

The final amendment is not subject to Executive Order 13211 (66 FR 28355, May 22, 2001) because it is not an

economically significant regulatory action under Executive Order 12866.

I. National Technology Transfer Advancement Act

As noted in the proposed rule, section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law No. 104-113, (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards (VCS) in its regulatory activities, unless to do so would be inconsistent with applicable law or otherwise impractical. The VCS are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by VCS bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency does not use available and applicable VCS. The final amendment does not involve technical standards. Therefore, EPA is not considering the use of any VCS.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801, et seq., as added by the Small Business Regulatory Enforcement Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report,

NESHAP for Industrial Process Cooling Towers:  
Final Amendment--Page 48 of 49

which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing the final rule and other required information to the United States Senate, the United States House of Representatives, and the Comptroller General of the United States prior to publication of the final rule in the Federal Register. A major rule cannot take effect until 60 days after it is published in the Federal Register. This action is not a "major rule" as defined by 5 U.S.C. 804(2). The final amendment is effective on [INSERT DATE OF PUBLICATION OF FINAL AMENDMENT IN THE FEDERAL REGISTER].

**List of Subjects in 40 CFR Part 63**

Environmental protection, Air pollution control, Hazardous substances, Reporting and recordkeeping requirements.

\_\_\_\_\_  
Dated:

\_\_\_\_\_  
Stephen L. Johnson,  
Administrator.



For the reasons stated in the preamble, title 40, chapter I, part 63 of the Code of Federal Regulations is amended as follows:

**PART 63--[AMENDED]**

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

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

**Subpart Q--[Amended]**

2. Section 63.400 is amended by revising paragraph (a) to read as follows:

§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 and are either major sources or are integral parts of facilities that are major sources as defined in §63.401.

\* \* \* \* \*