requirements of § 23.863(a) through (d), amendment 23–34.

(6) No corrosive fluids or gases that may escape from any rechargeable lithium battery, may damage surrounding structure or any adjacent systems, equipment, electrical wiring, or the airplane in such a way as to cause a major or more severe failure condition, in accordance with § 23.1309, amendment 23–62, and applicable regulatory guidance.

(7) Each rechargeable lithium battery installation must have provisions to prevent any hazardous effect on structure or essential systems that may be caused by the maximum amount of heat the battery can generate during a short circuit of the battery or of its individual cells.

(8) Rechargeable lithium battery installations must have a system to automatically control the charging rate of the battery to prevent battery overheating and overcharging, and either:

i. A battery temperature sensing and over-temperature warning system with a means for automatically disconnecting the battery from its charging source in the event of an over-temperature condition; or

ii. A battery failure sensing and warning system with a means for automatically disconnecting the battery from its charging source in the event of battery failure.

(9) Any rechargeable lithium battery installation, the function of which is required for safe operation of the aircraft, must incorporate a monitoring and warning feature that will provide an indication to the appropriate flight crewmembers whenever the state of charge of the batteries has fallen below levels considered acceptable for dispatch of the aircraft.

Note 1 to paragraph (9): Reference § 23.1353(h) for dispatch consideration.

(10) The Instructions for Continued Airworthiness (ICA) required by § 23.1529 must contain maintenance requirements to assure that the battery has been sufficiently charged at appropriate intervals specified by the battery manufacturer and the equipment manufacturer that contain the rechargeable lithium battery or rechargeable lithium battery system. The lithium rechargeable batteries and lithium rechargeable battery systems must not degrade below specified ampere-hour levels sufficient to power the aircraft system. The ICA must also contain procedures for the maintenance of replacement batteries to prevent the installation of batteries that have degraded charge retention ability or other damage due to prolonged storage at a low state of charge. Replacement batteries must be of the same manufacturer and part number as approved by the FAA.

Note 2 to paragraph (10): Maintenance requirements include procedures that check battery capacity, charge degradation at manufacturers recommended inspection intervals, and replace batteries at manufacturer's recommended replacement schedule/time to prevent age-related degradation.

Note 3 to paragraph (10): The term ''sufficiently charged'' means that the battery must retain enough charge, expressed in ampere-hours, to ensure that the battery cells will not be damaged. A battery cell may be damaged by low charge (*i.e.*, below certain level), resulting in a reduction in the ability to charge and retain a full charge. This reduction would be greater than the reduction that may result from normal operational degradation.

Note 4 to paragraph (10): Replacement battery in spares storage may be subject to prolonged storage at a low state of charge.

Issued in Kansas City, Missouri on July 19, 2018.

Pat Mullen,

Manager, Small Airplane Standards Branch, Aircraft Certification Service.

[FR Doc. 2018–15912 Filed 7–24–18; 8:45 am]

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2016–0442; FRL–9981–06–OAR]

RIN 2060–AS92

National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry Residual Risk and Technology Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action finalizes the residual risk and technology review (RTR) conducted for the Portland Cement Manufacturing Industry source category regulated under national emission standards for hazardous air pollutants (NESHAP). These final amendments include no revisions to the numerical emission limits of the rule based on the RTR. The amendments reflect corrections and clarifications of the rule requirements and provisions. While the amendments do not result in reductions in emissions of hazardous air pollutants (HAP), this action results in improved monitoring, compliance, and implementation of the rule.

DATES: This final action is effective on July 25, 2018.

ADDRESSES: The Environmental Protection Agency (EPA) has established a docket for this action under Docket ID No. EPA–HQ–OAR–2016–0442. All documents in the docket are listed on the *https://www.regulations.gov* website. Although listed, some information is not publicly available, *e.g.*, 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 *https://www.regulations.gov,* or in hard copy at the EPA Docket Center, WJC West Building, Room Number 3334, 1301 Constitution Ave. NW, Washington, DC. The Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m. Eastern Standard Time (EST), Monday through Friday. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the Docket Center is (202) 566–1742.

FOR FURTHER INFORMATION CONTACT: For questions about this final action, contact Mr. Brian Storey, Sector Policies and Programs Division (D243–04), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–1103; fax number: (919) 541–4991; and email address: *storey.brian@epa.gov.* For specific information regarding the risk modeling methodology, contact Mr. James Hirtz, Health and Environmental Impacts Division (C539–02), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–0881; fax number: (919) 541–0840; and email address: *hirtz.james@epa.gov.* For information about the applicability of the NESHAP to a particular entity, contact Ms. Sara Ayres, Office of Enforcement and Compliance Assurance, U.S. Environmental Protection Agency, U.S. EPA Region 5 (E–19J), 77 West Jackson Boulevard, Chicago, Illinois 60604; telephone number: (312) 353–6266; email address: *ayres.sara@epa.gov.*

SUPPLEMENTARY INFORMATION:

Preamble Acronyms and Abbreviations. We use multiple acronyms and terms in this preamble. While this list may not be exhaustive, to

ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

ACI activated carbon injection
CAA Clean Air Act
CFR Code of Federal Regulations
CISWI commercial and industrial solid waste incinerators
D/F dioxins and furans
EPA Environmental Protection Agency
HAP hazardous air pollutants
HCl hydrochloric acid
HI hazard index
HQ hazard quotient
lb pounds
MACT maximum achievable control technology
MIR maximum individual risk
ng/dscm nanograms per dry standard cubic meters
NAICS North American Industry Classification System
NEI National Emissions Inventory
NESHAP national emission standards for hazardous air pollutants
NTTAA National Technology Transfer and Advancement Act
OAQPS Office of Air Quality Planning and Standards
OMB Office of Management and Budget
PAH polyaromatic hydrocarbons
PM particulate matter
ppmvd parts per million by volume, dry basis
PRA Paperwork Reduction Act
RFA Regulatory Flexibility Act
RTO regenerative thermal oxidizers
RTR residual risk and technology review
SO_2 sulfur dioxide
TEF toxicity equivalence factors
TEQ toxic equivalents
THC total hydrocarbons
TOSHI target organ-specific hazard index
tpy tons per year
TRIM.FaTE Total Risk Integrated Methodology. Fate, Transport, and Ecological Exposure model
UMRA Unfunded Mandates Reform Act
U.S.C. United States Code

Background information. On September 21, 2017, the EPA proposed revisions to the Portland Cement Manufacturing Industry NESHAP based on our RTR. In this action, we are finalizing decisions and revisions for the rule. We summarize some of the more significant comments we timely received regarding the proposed rule and provide our responses in this preamble. A summary of all other public comments on the proposal and the EPA's responses to those comments is available in ''Summary of Public Comments and Responses on Proposed Rules,'' Docket ID No. EPA–HQ–OAR–2016–0442. A ''track changes'' version of the regulatory language that incorporates the changes in this action is available in the docket.

Organization of this Document. The information in this preamble is organized as follows:

I. General Information

A. Does this action apply to me?

Table 1 of this preamble lists the NESHAP and associated regulated industrial source category that is the subject of this final rule. Table 1 is not intended to be exhaustive, but rather provides a guide for readers regarding the entities that this action is likely to affect. The rule standards will be directly applicable to the affected sources. Federal, state, local, and tribal government entities are not affected by this action. As defined in the *Initial List of Categories of Sources Under Section 112(c)(1) of the Clean Air Act Amendments of 1990* (57 FR 31576), the Portland Cement Manufacturing Industry source category is any facility engaged in manufacturing portland cement by either the wet or dry process. The category includes, but is not limited to, the following process units: kiln, clinker cooler, raw mill system, finish mill system, raw mill dryer, raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging, and bulk loading and unloading systems. The source category does not include those kilns that burn hazardous waste and are subject to and regulated under 40 CFR part 63, subpart EEE, or kilns that burn solid waste and are subject to the Commercial and Industrial Solid Waste Incineration (CISWI) rule under 40 Code of Federal Regulations (CFR) part 60, subpart CCCC, and 40 CFR part 60, subpart DDDD.

TABLE 1—NESHAP AND INDUSTRIAL SOURCE CATEGORIES AFFECTED BY THIS FINAL ACTION

NESHAP and source category	NAICS[1] code
Portland Cement Manufacturing Industry	327310

[1] North American Industry Classification System.

To determine whether your facility is affected, you should examine the applicability criteria in the appropriate NESHAP. If you have any questions regarding the applicability of any aspect of this NESHAP, please contact the appropriate person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section of this preamble.

B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this final action will also be available on the internet. Following signature by the EPA Administrator, the EPA will post a copy of this final action at: *https://www.epa.gov/stationary-sources-air-pollution/portland-cement-manufacturing-industry-national-emission-standards.* Following publication in the **Federal Register**, the EPA will post the **Federal Register** version and key technical documents at this same website.

Additional information is available on the RTR website at *https://www.epa.gov/ttn/atw/rrisk/rtrpg.html.* This information includes an overview of the RTR program, links to project websites for the RTR source categories, and detailed emissions and other data we used as inputs to the risk assessments.

C. Judicial Review and Administrative Reconsideration

Under Clean Air Act (CAA) section 307(b)(1), judicial review of this final action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit (the Court) by September 24, 2018. Under CAA section 307(b)(2), the requirements established by this final rule may not be challenged separately in any civil or criminal proceedings brought by the EPA to enforce the requirements.

Section 307(d)(7)(B) of the CAA further provides that only an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review. This section also provides a mechanism for the EPA to reconsider the rule if the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within the period for public comment or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule. Any person seeking to make such a demonstration should submit a Petition for Reconsideration to the Office of the Administrator, U.S. EPA, Room 3000, EPA WJC South Building, 1200 Pennsylvania Ave. NW, Washington, DC 20460, with a copy to both the person(s) listed in the preceding **FOR FURTHER INFORMATION CONTACT** section, and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), U.S. EPA, 1200 Pennsylvania Ave. NW, Washington, DC 20460.

II. Background

A. What is the statutory authority for this action?

Section 112 of the CAA establishes a two-stage regulatory process to address emissions of HAP from stationary sources. In the first stage, we must identify categories of sources emitting one or more of the HAP listed in CAA section 112(b) and then promulgate technology-based NESHAP for those sources. ''Major sources'' are those that emit, or have the potential to emit, any single HAP at a rate of 10 tons per year (tpy) or more, or 25 tpy or more of any combination of HAP. For major sources, these standards are commonly referred to as maximum achievable control technology (MACT) standards and must reflect the maximum degree of emission reductions of HAP achievable (after considering cost, energy requirements, and non-air quality health and environmental impacts). In developing MACT standards, CAA section 112(d)(2) directs the EPA to consider the application of measures, processes, methods, systems, or techniques, including, but not limited to, those that reduce the volume of or eliminate HAP emissions through process changes, substitution of materials, or other modifications; enclose systems or processes to eliminate emissions; collect, capture, or treat HAP when released from a process, stack, storage, or fugitive emissions point; are design, equipment, work practice, or operational standards; or any combination of the above.

For these MACT standards, the statute specifies certain minimum stringency requirements, which are referred to as MACT floor requirements, and which may not be based on cost considerations. See CAA section 112(d)(3). For new sources, the MACT floor cannot be less stringent than the emission control achieved in practice by the best-controlled similar source. The MACT standards for existing sources can be less stringent than floors for new sources, but they cannot be less stringent than the average emission limitation achieved by the best-performing 12 percent of existing sources in the category or subcategory (or the best-performing five sources for categories or subcategories with fewer than 30 sources). In developing MACT standards, we must also consider control options that are more stringent than the floor under CAA section 112(d)(2). We may establish standards more stringent than the floor, based on the consideration of the cost of achieving the emissions reductions, any non-air quality health and environmental impacts, and energy requirements.

In the second stage of the regulatory process, the CAA requires the EPA to undertake two different analyses, which we refer to as the technology review and the residual risk review. Under the technology review, we must review the technology-based standards and revise them ''as necessary (taking into account developments in practices, processes, and control technologies)'' no less frequently than every 8 years, pursuant to CAA section 112(d)(6). Under the residual risk review, we must evaluate the risk to public health remaining after application of the technology-based standards and revise the standards, if necessary, to provide an ample margin of safety to protect public health or to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect. The residual risk review is required within 8 years after promulgation of the technology-based standards, pursuant to CAA section 112(f). In conducting the residual risk review, if the EPA determines that the current standards provide an ample margin of safety to protect public health, it is not necessary to revise the MACT standards pursuant to CAA section 112(f).[1] For more information on the statutory authority for this rule, see 82 FR 44254, September 21, 2017.

B. What is the Portland Cement Manufacturing Industry source category and how does the NESHAP regulate HAP emissions from the source category?

The EPA initially promulgated the Portland Cement Manufacturing Industry NESHAP on June 14, 1999 (64 FR 31898), under title 40, part 63, subpart LLL of the CFR. The rule was amended on April 5, 2002 (67 FR 16614); July 5, 2002 (67 FR 44766); December 6, 2002 (67 FR 72580); December 20, 2006 (71 FR 76518); September 9, 2010 (75 FR 54970); January 18, 2011 (76 FR 2832); February 12, 2013 (78 FR 10006); July 27, 2015 (80 FR 44772); September 11, 2015 (80 FR 54728); and July 25, 2016 (81 FR

[1] The Court has affirmed this approach of implementing CAA section 112(f)(2)(A): *NRDC* v. *EPA,* 529 F.3d 1077, 1083 (DC Cir. 2008) (''If EPA determines that the existing technology-based standards provide an 'ample margin of safety,' then the Agency is free to readopt those standards during the residual risk rulemaking.'').

48356). The amendments further defined affected cement kilns as those used to manufacture portland cement, except for kilns that burn hazardous waste, and are subject to and regulated under 40 CFR part 63, subpart EEE, and kilns that burn solid waste, which are subject to the CISWI rule under 40 CFR part 60, subpart CCCC, and 40 CFR part 60, subpart DDDD. Additionally, onsite sources that are subject to standards for nonmetallic mineral processing plants in 40 CFR part 60, subpart OOO, are not subject to 40 CFR part 63, subpart LLL. Crushers are not covered by 40 CFR part 63, subpart LLL, regardless of their location. The subpart LLL NESHAP regulates HAP emissions from new and existing portland cement production facilities that are major or area sources of HAP, with one exception. Kilns located at facilities that are area sources are not regulated for hydrochloric acid (HCl) emissions.

Portland cement manufacturing is an energy-intensive process in which cement is made by grinding and heating a mixture of raw materials such as limestone, clay, sand, and iron ore in a rotary kiln. The kiln is a large furnace that is fueled by coal, oil, gas, coke, and/or various waste materials. The product, known as clinker, from the kiln is cooled, ground, and then mixed with a small amount of gypsum to produce portland cement.

The main source of air toxics emissions from a portland cement plant is the kiln. Emissions originate from the burning of fuels and heating of feed materials. Air toxics are also emitted from the grinding, cooling, and materials handling steps in the manufacturing process. Pollutants regulated under the 40 CFR part 63, subpart LLL, are particulate matter (PM) as a surrogate for non-mercury HAP metals, total hydrocarbons (THC) as a surrogate for organic HAP other than dioxins and furans (D/F), organic HAP as an alternative to the limit for THC, mercury, HCl (from major sources only), and D/F expressed as toxic equivalents (TEQ). The kiln is regulated for all HAP and raw material dryers are regulated for THC or the alternative organic HAP. Clinker coolers are regulated for PM. Finish mills and raw mills are regulated for opacity. During periods of startup and shutdown, the kiln, clinker cooler, and raw material dryer are regulated by work practice standards. Open clinker storage piles are regulated by work practice standards. The emission standards for the affected sources are summarized in Table 2.

TABLE 2—EMISSION LIMITS FOR KILNS, CLINKER COOLERS, RAW MATERIAL DRYERS, RAW AND FINISH MILLS

If your source is a (an):	And the operating mode is:	And it is located at a:	Your emissions limits are:	And the units of the emissions limit are:	The oxygen correction factor is:
1. Existing kiln	Normal operation	Major or area source	PM [1] 0.07	Pounds (lb)/ton clinker.	NA.
			D/F [2] 0.2	Nanograms/dry standard cubic meters (ng/dscm) (TEQ).	7 percent.
			Mercury 55	lb/million (MM) tons clinker.	NA.
			THC [3 4] 24	Parts per million, volumetric dry (ppmvd).	7 percent.
2. Existing kiln	Normal operation	Major source	HCl 3	ppmvd	7 percent.
3. Existing kiln	Startup and shutdown.	Major or area source	Work practice standards (63.1346(g)).	NA	NA.
4. New kiln	Normal operation	Major or area source	PM [1] 0.02	lb/ton clinker	NA.
			D/F [2] 0.2	ng/dscm (TEQ)	7 percent.
			Mercury 21	lb/MM tons clinker	NA.
			THC [3 4] 24	ppmvd	7 percent.
5. New kiln	Normal operation	Major source	HCl 3	ppmvd	7 percent.
6. New kiln	Startup and shutdown.	Major or area source	Work practice standards (63.1346(g)).	NA	NA.
7. Existing clinker cooler.	Normal operation	Major or area source	PM 0.07	lb/ton clinker	NA.
8. Existing clinker cooler.	Startup and shutdown.	Major or area source	Work practice standards (63.1348(b)(9)).	NA	NA.
9. New clinker cooler	Normal operation	Major or area source	PM 0.02	lb/ton clinker	NA.
10. New clinker cooler.	Startup and shutdown.	Major or area source	Work practice standards (63.1348(b)(9)).	NA	NA.
11. Existing or new raw material dryer.	Normal operation	Major or area source	THC [3 4] 24	ppmvd	NA.
12. Existing or new raw material dryer.	Startup and shutdown.	Major or area source	Work practice standards (63.1348(b)(9)).	NA	NA.
13. Existing or new raw or finish mill.	All operating modes	Major source	Opacity 10	percent	NA.

[1] The initial and subsequent PM performance tests are performed using Method 5 or 5I and consist of three test runs.

[2] If the average temperature at the inlet to the first PM control device (fabric filter or electrostatic precipitator) during the D/F performance test is 400 degrees Fahrenheit or less, this limit is changed to 0.40 ng/dscm (TEQ).

[3] Measured as propane.

[4] Any source subject to the 24 ppmvd THC limit may elect to meet an alternative limit of 12 ppmvd for total organic HAP.

C. What changes did we propose for the Portland Cement Manufacturing Industry source category in our September 21, 2017, proposed rule?

On September 21, 2017, the EPA published a proposed rule in the **Federal Register** for the Portland Cement Manufacturing Industry NESHAP, 40 CFR part 63, subpart LLL, that took into consideration the RTR analyses (82 FR 44254). In the proposed rule, we found that risks due to emissions of air toxics from this source category are acceptable and that the standards provide an ample margin of safety to protect public health, and we identified no new cost-effective controls under the technology review to achieve further emissions reductions. We proposed no revisions to the numerical emission limits based on these analyses. However, the EPA did propose amendments to correct and clarify rule requirements and provisions.

III. What is included in this final rule?

This action finalizes the EPA's determinations pursuant to the RTR provisions of CAA section 112 for the Portland Cement Manufacturing Industry source category. This action also finalizes other changes to the NESHAP including amendments to correct and clarify rule requirements and provisions.

A. What are the final rule amendments based on the risk review for the Portland Cement Manufacturing Industry source category?

The EPA proposed no changes to 40 CFR part 63, subpart LLL, based on the risk review conducted pursuant to CAA section 112(f). Specifically, we determined that risks from the Portland Cement Manufacturing Industry source category are acceptable, that the standards provide an ample margin of safety to protect public health, and that it is not necessary to set a more stringent standard to prevent an adverse environmental effect. The EPA received no new data or other information during the public comment period that changed this determination. Therefore, we are not requiring additional controls under CAA section 112(f)(2).

B. What are the final rule amendments based on the technology review for the Portland Cement Manufacturing Industry source category?

The EPA proposed no changes to 40 CFR part 63, subpart LLL, based on the technology review conducted pursuant to CAA section 112(d)(6). Specifically, we determined that there are no developments in practices, processes, and control technologies that warrant revisions to the MACT standards for this source category. The EPA received no new data or other information during the public comment period that affected the technology review determination. Therefore, we are not requiring additional control under CAA section 112(d)(6).

C. What other changes have been made to the NESHAP?

In the September 21, 2017, proposed rule, we proposed additional revisions, which included changes to clarify monitoring, testing, and recordkeeping, and reporting requirements and the correction of typographical errors. Based on the comments received, we are now finalizing the following amendments to the rule:

- We correct a paragraph in the reporting requirements that mistakenly required that affected sources report their 30-operating day rolling average for D/F temperature monitoring.
- We correct a provision that required facility owners or operators to keep records of both daily clinker production and kiln feed rates.
- We clarify that the submittal dates for semiannual summary reports required under 40 CFR 63.1354(b)(9) are 60 days after the end of the reporting period.
- We resolve conflicting provisions that apply when a sulfur dioxide (SO_2) continuous parametric monitoring system is used to monitor HCl compliance.
- We clarify that the requirement in 40 CFR 63.1349(b)(1)(vi) only applies to kilns with inline raw mills.
- We clarify that the 40 CFR part 63, subpart LLL D/F standards were developed based on toxic equivalency factors (TEFs) developed in 1989, as referenced in the TEQ definition section of the rule (40 CFR 63.1341).
- We clarify that the performance test requirements for affected sources that have been idle through one or more periods that required a performance test to demonstrate compliance.
- We remove 40 CFR 63.1343(d) and Table 2 that contain emission limits that were applicable prior to September 2015.
- We revise Equation 18 of the rule to include a missing term in the equation.
- We revise 40 CFR 63.1350(g)(4) to say ''record'' instead of ''report.''

D. What are the effective and compliance dates of the standards?

Because these amendments only provide corrections and clarifications to the current rule and do not impose new requirements on the industry, we are making these amendments effective and are requiring compliance upon promulgation of the final rule.

IV. What is the rationale for our final decisions and amendments for the Portland Cement Manufacturing Industry source category?

This section provides a description of our proposed action and this final action, the EPA's rationale for the final decisions and amendments, and a summary of key comments and responses. Other comments, comment summaries, and the EPA's responses can be found ''National Emission Standards for Hazardous Air Pollutants from Portland Cement Manufacturing (40 CFR part 63, subpart LLL) Residual Risk and Technology Review, Final Amendments: Summary of Public Comments and Responses on Proposed Rules,'' which is available in the docket for this action (EPA–HQ–OAR–2016–0442).

A. Residual Risk Review for the Portland Cement Manufacturing Industry Source Category

1. What did we propose pursuant to CAA section 112(f) for the Portland Cement Manufacturing Industry source category?

Pursuant to CAA section 112(f), the EPA conducted a residual risk review and presented the results of this review, along with our proposed decisions regarding risk acceptability, ample margin of safety, and adverse environmental effects, in the September 21, 2017, proposed rule (82 FR 44254). The results of the risk assessment are presented briefly in Table 3, and in more detail in the document titled ''Residual Risk Assessment for the Portland Cement Manufacturing Source Category in Support of the July 2018 Final Rule,'' available in the docket for this rulemaking (Docket ID No. EPA–HQ–OAR–2016–0442).

TABLE 3—INHALATION RISK ASSESSMENT SUMMARY FOR PORTLAND CEMENT MANUFACTURING INDUSTRY SOURCE CATEGORY

	Cancer MIR (in-1 million)		Cancer incidence (cases per year) [1]	Population with risk of 1-in-1 million or greater [1]	Population with risk of 10-in-1 million or greater [1]	Max chronic noncancer HI
	Based on actual emissions	Based on allowable emissions				
Source Category	1 (formaldehyde, benzene)	4 (formaldehyde, benzene)	0.01	130	0	HI < 1 (Actuals and Allowables).
Whole Facility	70 (arsenic and chromium VI)		0.02	20,000	690	HI = 1 (Actuals).

[1] Cancer incidence and populations exposed are based upon actual emissions.

The results of the chronic inhalation cancer risk assessment based on actual emissions from the Portland Cement Manufacturing Industry source category indicate that the maximum lifetime individual cancer risk posed by the 91 facilities is 1-in-1 million or less. The total estimated cancer incidence from this source category is 0.01 excess cancer cases per year, or one excess case in every 100 years. Regarding the noncancer risk assessment, the maximum chronic noncancer target organ-specific hazard index (TOSHI) for the source category could be up to 0.02 (for respiratory health effects) from the portland cement manufacturing processes. Regarding short-term (acute) health hazards posed by actual baseline emissions, the highest screening acute hazard quotient (HQ) for the source category is estimated to be 0.2. No facilities were found to have an acute HQ greater than 1 for any of the acute benchmarks examined.

Potential multipathway health risks under a fisher and farmer scenario were identified using a 3-tier screening analysis of HAP known to be persistent and bio-accumulative in the environment emitted by facilities in this source category and, if necessary, a site-specific assessment utilizing TRIM.FaTE. Based on the results of the multipathway cancer screening analyses of arsenic and dioxin emissions, we conclude that the cancer risk from ingestion exposure to the individual most exposed is less than 1-in-1 million for arsenic, and, based on a tier 3 analysis, less than 20-in-1 million for dioxins. Based on the tier 1 multipathway screening analysis of cadmium emissions and the refined site-specific multipathway analysis of mercury emissions, the maximum chronic noncancer TOSHI due to ingestion exposure is less than 1 for actual emissions.

Finally, potential differences between actual emission levels and the maximum emissions allowable under the EPA's standards (*i.e.,* ''allowable emissions'') were also calculated for the source category. Allowable emissions were calculated using the emission limits for existing sources in the current NESHAP in conjunction with the emission factors for metallic HAP, organic HAP and D/F congeners, as appropriate, the annual production capacity, and, when the emission limit was a concentration-based limit, the annual hours of operation reported by each source. Risk results from the inhalation risk assessment indicate that the maximum lifetime individual cancer risk could increase from 1-in-1 million for actual emissions to as high as 4-in-1 million for allowable emissions. At the allowable emissions level, the maximum chronic noncancer TOSHI was 0.06 (for respiratory health effects). The total estimated cancer incidence from this source category at the allowable emissions level was about 0.03 excess cancer cases per year, or 3 excess cases in every 100 years.

In determining whether risk is acceptable, the EPA considered all available health information and risk estimation uncertainty, as described above. The results indicate that inhalation cancer risk to the individual most exposed under both actual and allowable emissions scenarios are considerably less than 100-in-1 million, which is the presumptive limit of acceptability. The maximum chronic noncancer TOSHI due to inhalation exposures is less than 1 for both actual emissions and up to 1 due to allowable emissions. The multipathway analysis indicates a cancer risk less than 20-in-1 million from ingestion based upon our tier 3 screening analysis, while a refined site-specific multipathway analysis indicates that the HI for ingestion exposures is less than 1. Finally, the conservative evaluation of acute noncancer risk concluded that acute risk is below a level of concern. Taking into account this information, we proposed that the risks remaining after implementation of the existing MACT standards for the Portland Cement Manufacturing Industry were acceptable.

As directed by CAA section 112(f)(2), we also evaluated whether the existing MACT standards for the Portland Cement Manufacturing Industry provide an ample margin of safety to protect public health. In addition to considering all of the health risks and other health information considered in the risk acceptability determination, in the ample margin of safety analysis we evaluated the cost and feasibility of available control technologies and other measures (including the controls, measures, and costs reviewed under the technology review) that could be applied in this source category to further reduce the risks due to emissions of HAP. Our inhalation risk analysis indicated very low risk from the facilities in the source category based upon actual emissions (1-in-1 million), and just slightly higher risk based upon allowable emissions (4-in-1 million). Therefore, very little reduction in inhalation risk could be realized regardless of the availability of control options.

The HAP risk drivers contributing to the inhalation maximum individual risk (MIR) were gaseous organic HAP: formaldehyde, benzene, naphthalene, and acetaldehyde. More than 62 percent of the mass emissions of these compounds originated from kiln operations. The first technology we considered in our ample margin of safety analysis was a regenerative thermal oxidizer (RTO) used to control organic HAP emissions from the kiln exhaust. It is expected that an RTO, when used in conjunction with the existing activated carbon injection (ACI), only offers an additional 50-percent removal efficiency of organic HAP from the kiln exhaust, due to the reduced THC concentration leaving the ACI. ACI control devices are currently used by industry, and the addition of an RTO as control would include configuring the RTO in series, following the ACI. We found that the use of an RTO in series with the existing ACI control was not cost effective for this industry, and given the small reduction in organic HAP emissions, the addition of an RTO would have little effect on the source category risks.

Other technologies evaluated included the use of an existing ACI with the addition of wet scrubbers to help

control organic HAP, including D/F emissions, from the kiln exhaust. For the March 24, 1998, proposal of the Portland Cement Manufacturing Industry NESHAP (63 FR 14182), we performed a beyond-the-floor analysis and determined that, based on the additional costs and the level of D/F emissions reduction achievable, the costs were not justified (63 FR 14199–14201). In this technology review, we conclude that, as with the findings of the 1998 rule, the use of the combination of an ACI system in series with a wet scrubber is not cost effective for the industry to reduce organic HAP or D/F emissions, and would have little effect on the source category risk.

Although our multipathway screening analysis results did not indicate risks of concern from mercury emissions, we also performed an evaluation of halogenated carbon injection as a control of mercury emissions from the kiln exhaust. In the May 6, 2009, beyond-the-floor analysis for the Portland Cement Manufacturing Industry NESHAP, we determined that, based on the costs of control, and the negligible level of mercury emission reduction achieved by the controls, the costs of using a halogenated carbon injection system were not justified (74 FR 21149). As we determined in the 2009 rule, we do not consider the use of halogenated carbon injection system to be cost effective for the industry to use to reduce mercury emissions, and it would have little effect on the low risks identified for this source category.

Due to the low risk, the minimal risk reductions that could be achieved with the various control options that we evaluated, and the substantial costs associated with additional control options, we proposed that the current standards provide an ample margin of safety to protect public health.

The EPA conducted a screening assessment to examine the potential for an adverse environmental effect as required under section 112(f)(2)(A) of the CAA. Section 112(a)(7) of the CAA defines ''adverse environmental effect'' 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.'' Based on the results of the environmental risk screening assessment, the EPA concluded that there was not an adverse environmental effect from the Portland Cement Manufacturing Industry source category.

2. How did the risk review change for the Portland Cement Manufacturing Industry source category?

We received comments both supporting and opposing the proposed residual risk review and our proposed determination that no revisions are warranted under CAA section 112(f)(2). After review of these comments, we determined that no changes to our risk review are necessary. The following section provides a summary of the major comments received and our responses to those comments. All comments and our specific responses can be found in the document titled ''National Emission Standards for Hazardous Air Pollutants from Portland Cement Manufacturing (40 CFR part 63, subpart LLL) Residual Risk and Technology Review, Final Amendments: Summary of Public Comments and Responses on Proposed Rules,'' which is available in the docket for this action.

3. What key comments did we receive on the risk review, and what are our responses?

Generally, comments that were not supportive of the proposed determination suggested changes to the underlying risk assessment methodology. One comment specific to the source category stated that the EPA's National Emissions Inventory (NEI) data from 2014 documented 1,447.25 tons of polycyclic aromatic hydrocarbons (PAH) emitted by the source category, yet PAH emission data were not included in Table 3.1–1, ''Summary of Emissions from the Portland Cement Manufacturing Source Category and Dose-Response Values Used in the Residual Risk Assessment'' (Docket ID No. EPA–HQ–OAR–2016–0442–0153), nor were PAH quantitatively assessed elsewhere in the risk assessment.

The EPA disagrees with the commenter that the risk assessment did not address PAH. The Portland Cement Manufacturing Industry NESHAP regulates organic HAP emissions indirectly with an emissions limit for THC. As an alternative, the EPA established an emissions limit for non-dioxin organic HAP. In developing the MACT standard, the EPA reviewed the results of 18 test reports where organic HAP were measured (Docket ID No. EPA–HQ–OAR–2002–0051–3429). Naphthalene was the only PAH reported. Based on a review of emissions test data where organic HAP were measured simultaneously with THC, the EPA found that, on average, organic HAP emissions comprise about 35 percent of the THC. In the test data reviewed for the 2009 proposed rule (74 FR 21136), nine specific organic HAP were identified and are the pollutants that must be tested for when choosing to comply with the organic HAP limit. One of the nine organic HAP identified was the PAH naphthalene. No other PAH species were present in measurable amounts in the test data reviewed. Naphthalene is one of the PAH listed in Table 3.1–1 of the risk assessment report. Based on our review of the test data for organic HAP, the only PAH emitted above detection limits is naphthalene.

The EPA also disputes the commenter's claim that PAH emissions, as reported in the 2014 NEI, totaled over 1,400 tons. Our inspection of the 2014 NEI data for total PAH from the cement sector showed annual emissions of 1,449 pounds, not tons. That is less than 1 tpy for total PAH, whereas our risk assessment used total naphthalene emissions of 38 tpy from the Portland Cement Manufacturing Industry source category. Furthermore, no additional PAH emissions data were submitted to the EPA by the commenter or other commenters to support their claims.

EPA also received comments and information from representatives of portland cement manufacturing facilities who, while supportive of EPA's residual risk determination, stated that the EPA's risk estimates were based on flawed data, such that emission rates were overestimated for several pollutants. In response, the EPA acknowledges that our risk assessment results for the Portland Cement Manufacturing Industry source category are dependent on the emission rates used in the assessment. If we were to lower emission rates based on more accurate data, we expect lower risk estimates. Because the EPA has determined that the risk is acceptable, and that the existing standards provide an ample margin of safety to protect public health, using the emissions data provided by the commenters would potentially reduce risk further but would not change our determinations under the risk review. Accordingly, we concluded that it was reasonable to not update the risk assessment following proposal. We, therefore, finalized the risk assessment report and re-submitted it to the docket as ''Residual Risk Assessment for the Portland Cement Manufacturing Source Category in Support of the July 2018 Final Rule.''

4. What is the rationale for our final approach and final decisions for the risk review?

For the reasons explained in the proposed rule, the Agency determined that the risks from the Portland Cement