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40 CFR Part 261

Expansion of RCRA Comparable Fuel Exclusion; Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 261

[EPA–HQ–RCRA–2005–0017; FRL–8324–2]

RIN 2050–AG24

Expansion of RCRA Comparable Fuel Exclusion

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: EPA is proposing to expand the comparable fuel exclusion under the rules implementing subtitle C of the Resource Conservation and Recovery Act (RCRA) for fuels that are produced from hazardous waste but which generate emissions that are comparable to emissions from burning fuel oil when such fuels are burned in an industrial boiler. Such excluded fuel would be called emission-comparable fuel (ECF). ECF would be subject to the same specifications that currently apply to comparable fuels, except that the specifications for certain hydrocarbons and oxygenates would not apply. The ECF exclusion would be conditioned on requirements including: Design and operating conditions for the ECF boiler to ensure that the ECF is burned under the good combustion conditions typical for oil-fired industrial boilers; and conditions for tanks storing ECF which conditions are typical of those for storage of commercial fuels, and are tailored for the hazards that ECF may pose.

DATES: Comments must be received on or before August 14, 2007. Under the Paperwork Reduction Act, comments on the information collection provisions must be received by OMB on or before July 16, 2007.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–HQ–RCRA–2005–0017, by one of the following methods:

- *http://www.regulations.gov:* Follow the on-line instructions for submitting comments.
- *E-mail: rcra-docket@epa.gov.*
- *Fax:* 202–566–9744.
- *Mail:* RCRA Docket, Environmental Protection Agency, Mailcode: 2822T, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Please include a total of two copies. We request that you also send a separate copy of your comments to the contact person listed below (see **FOR FURTHER INFORMATION CONTACT**). In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17th St., NW., Washington, DC 20503.
- *Hand Delivery:* RCRA Docket, EPA Docket Center (2822T), EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information. Please include a total of two copies. We request that you also send a separate copy of each comment to the contact person listed below (see **FOR FURTHER INFORMATION CONTACT**).

Instructions: Direct your comments to Docket ID No. EPA–HQ–RCRA–2005–0017. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *http://www.regulations.gov*, including any personal information provided, unless the comments include information claimed to be Confidential Business Information (CBI) or other information the disclosure of which is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *http://www.regulations.gov* or e-mail. Send or deliver information identified as CBI to the following address: Ms. LaShan Haynes, RCRA Document Control Officer, EPA (Mail Code 5305P), Attention Docket ID No. EPA–HQ–RCRA–2005–0017, 1200 Pennsylvania Avenue, NW., Washington, DC 20460. Clearly mark the part or all of the information that you claim to be CBI. The *http://www.regulations.gov* Web site is an ''anonymous access'' system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through *http://www.regulations.gov*, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD–ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket, visit the EPA Docket Center homepage at *http://www.epa.gov/epahome/dockets.htm.* We also request that interested parties who would like information they previously submitted to EPA to be considered as part of this action identify the relevant information by docket entry numbers and page numbers.

Docket: All documents in the docket are listed in the *http://www.regulations.gov* index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in *http://www.regulations.gov* or in hard copy at the RCRA Docket, EPA/DC, EPA West, Room 3334, 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 RCRA Docket is (202) 566–0270.

FOR FURTHER INFORMATION CONTACT: Mary Jackson, Hazardous Waste Minimization and Management Division, Office of Solid Waste, Mailcode: 5302P, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460; telephone number: (703) 308–8453; fax number: (703) 308–8433; e-mail address: *jackson.mary@epa.gov.*

SUPPLEMENTARY INFORMATION:

General Information

A. Does This Action Apply to Me?

Categories and entities potentially affected by this action include:

Category	NAICS code	SIC code	Examples of potentially regulated entities
Any industry that generates or combusts hazardous waste as defined in the proposed rule.	562	49	Waste Management and Remediation Services.
	327	32	Non-metallic Mineral Products Manufacturing.

Category	NAICS code	SIC code	Examples of potentially regulated entities
	325	28	Chemical Manufacturing.
	324	29	Petroleum and Coal Products Manufacturing.
	331	33	Primary Metals Manufacturing.
	333	38	Machinery Manufacturing.
	326	306	Plastic and Rubber Products Manufacturing.
	488, 561	49	Administration and Support Services.
	421	50	Scrap and waste materials.
	422	51	Wholesale Trade, Non-durable Goods, N.E.C.
	512, 541, 812	73	Business Services, N.E.C.
	512, 514, 541, 711	89	Services, N.E.C.
	924	95	Air, Water and Solid Waste Management.
	336	37	Transportation Equipment Manufacturing.
	928	97	National Security.
	334	35	Computer and Electronic Products Manufacturing.
	339	38	Miscellaneous Manufacturing.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be impacted by this action. This table lists examples of the types of entities EPA is now aware could potentially be regulated by this action. Other types of entities not listed could also be affected. To determine whether your facility, company, business, organization, etc., is affected by this action, you should examine the applicability criteria in this proposed rule. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

B. What Should I Consider as I Prepare My Comments for EPA?

1. Submitting CBI. Do not submit this information to EPA through *http://www.regulations.gov* or e-mail. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD ROM that you mail to EPA, mark the outside of the disk or CD ROM as CBI and then identify electronically within the disk or CD ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

2. Tips for Preparing Your Comments. When submitting comments, remember to:

- Identify the rulemaking by docket number and other identifying information (subject heading, **Federal Register** date and page number).
- Follow directions—The agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
- Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.
- Describe any assumptions and provide any technical information and/or data that you used.
- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- Provide specific examples to illustrate your concerns, and suggest alternatives.
- Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
- Make sure to submit your comments by the comment period deadline identified.

3. Docket Copying Costs:

You may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies are 15 cents/page.

4. How Do I Obtain a Copy of This Document and Other Related Information?

In addition to being available in the docket, an electronic copy of today's proposed rule will also be available on the Worldwide Web (WWW). Following the Administrator's signature, a copy of this document will be posted on the WWW at *http://www.epa.gov/hwcmact.* This Web site also provides other information related to the NESHAP for hazardous waste combustors.

5. Index of Contents

The information presented in this preamble is organized as follows:

Part One: Background and Summary

I. Statutory Authority

These regulations are proposed under the authority of sections 2002, 3001, 3002, 3003, and 3004 of the Solid Waste Disposal Act of 1970, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), 42 U.S.C. 6921, 6922, 6923, and 6924.

II. Background

A. What Is the Intent of This Proposed Rule?

Section 40 CFR 261.38 states that secondary materials (*i.e.*, materials that otherwise would be hazardous wastes) which have fuel value and whose hazardous constituent levels are comparable to those found in the fossil fuels which would be burned in their place are not solid wastes, and hence not hazardous wastes. We are proposing to amend the comparable fuel exclusion by expanding the exclusion to include fuels that are produced from a hazardous waste but which generate emissions when burned in an industrial boiler that are comparable to emissions from burning fuel oil. In other words, the fuels would be comparable from an emissions standpoint but not a physical standpoint. The revised rule would establish a new category of excluded waste-derived fuel called emission-comparable fuel (ECF).

The quantity of waste fuels excluded under this approach would increase substantially the amount of hazardous waste fuels that would eligible for exclusion from the RCRA hazardous waste regulations. Specifically, we estimate that approximately 13,000 tons per year of waste fuels are currently excluded under the existing comparable fuel exclusion, while we project that up to an additional 107,000 tons per year may be excluded under the exclusion being proposed today.

These additional hazardous secondary materials could be burned for energy recovery without imposing unnecessary regulatory costs on generators, primarily the manufacturing sector. However, the expanded comparable fuel exclusion may not substantially increase the amount of hazardous waste burned for energy recovery because high Btu wastes, even though not currently excluded from RCRA, are currently burned in industrial furnaces and incinerators for their fuel value. Nonetheless, continuing to regulate these waste-derived fuels as hazardous wastes would treat a potentially valuable fuel commodity (especially considering the increasing value of fuels) as a waste without a compelling basis.

B. Who Would Be Affected by This Proposed Rule?

Entities that generate, burn, and store ECF are potentially affected by this proposal. The basic structure of the proposal is that ECF is no longer a solid (and hazardous) waste, and hence that each of these entities would not be subject to subtitle C regulation when managing ECF. Thus, generators of hazardous waste fuels that meet the conditions of the ECF exclusion could manage these fuels without being subject to subtitle C regulation assuming that the management conditions are satisfied. Burners, which are limited to certain industrial boilers (including utility boilers), could burn ECF provided the boilers meet the design and operating conditions in the proposed rule, as discussed in Part II, Section II. Generators would benefit from lower operating costs because of lower (or eliminated) waste management fees and because these fuels would substitute for fuels which would otherwise be purchased. In addition, entities storing ECF would not be subject to subtitle C standards provided they satisfy the management conditions tailored to ECF, as discussed in Part Two, Section IV.

Commercial hazardous waste combustors that are currently managing waste fuels that qualify as ECF, on the other hand, might find themselves unable to continue to charge hazardous waste management fees for the excluded waste fuels. Consequently, commercial hazardous waste combustors might lose the waste management revenues for those diverted fuels and may need to meet their heat input requirements by using other waste fuels or fossil fuels.

C. What Is the Relationship Between the Proposed Rule and the Existing Exclusion for Comparable Fuel?

On June 19, 1998 (63 FR 33782 and § 261.38), EPA promulgated standards to exclude from the regulatory definition of solid waste certain hazardous waste-derived fuels that meet specification levels for hazardous constituents and physical properties that affect burning which are comparable to the same levels in fossil fuels. EPA's goal was to develop a comparable fuel specification which is useable by the regulated community, but assures that an excluded waste-derived fuel is similar in composition to commercially available fuel and therefore poses no greater risk than burning fossil fuel.

During the eight years that the comparable fuel exclusion has been part of the hazardous waste regulations, several stakeholders have pointed out that many hazardous wastes with fuel value do not satisfy the terms of the exclusion. Independently, in 2003, EPA began examining the effectiveness of the current comparable fuel program as part of an effort to promote the energy conservation component of the Resource Conservation Challenge [1] to determine whether other hazardous wastes could be appropriately excluded as comparable fuel.

As part of this effort, we contacted the American Chemistry Council (ACC) in early 2003 to determine how much waste is currently excluded as comparable fuel and whether there were additional quantities of other high Btu wastes that could potentially be considered comparable fuel. ACC conducted a survey of its members and provided results to EPA in late 2003 indicating that approximately 13,000 tons per year of waste fuels are currently excluded, but that approximately 190,000 tons per year of additional waste fuels could potentially be excluded under revisions to the exclusion.[2]

Therefore, ACC recommended that EPA consider approaches to address the following barriers perceived as excluding additional quantities of waste fuels:

- *Analytic Issues:* High analysis cost and matrix interferences hamper meeting the detection limit requirements for nondetected analytes in many waste fuel matrices.
- *Over-Rigid Specifications:* Wastes containing nonhalogenated organics and oxygenates do not result in emissions greater than burning waste fuel meeting the specification if the combustor operates under good combustion conditions.
- *Blending:* The current exclusion bans blending to meet hazard constituent specifications. Flexibility is needed on blending of streams containing low levels of constituents, such as chromium and manganese attributable to corrosion from stainless steel vessels and pipes.

1. What Modifications to the Comparable Fuel Exclusion May Be Warranted?

We are proposing in this action to expand the exclusion for comparable fuel to establish a new category of excluded fuel—emission-comparable fuel (ECF). This proposal would exclude waste fuels that generate emissions, when burned in an industrial boiler, which are comparable to emissions from burning fuel oil. ECF would be subject to the same hazardous constituent and other specifications in Table 1 to § 261.38 that currently apply to comparable fuels, except that the specifications for certain hydrocarbons and oxygenates would not apply. The exclusion would be based on the rationale that ECF has substantial fuel value, that the hydrocarbon and oxygenate constituents no longer subject to a specification add fuel value, and that emissions from burning ECF in an industrial boiler operating under good combustion conditions are likely not to differ from emissions from burning fossil fuels under those same conditions. As a result, the current specifications limiting the hydrocarbons and oxygenates appear to be unnecessary.

The exclusion would be conditioned on the ECF being burned and stored under certain conditions, including: (1) Design and operating conditions for the ECF boiler that ensure that the ECF is burned under the good combustion conditions typical for oil-fired industrial boilers; and (2) conditions for storage in tanks which are comparable to those for storage of fuels and organic liquids and which are tailored for the hazards that ECF may pose given that ECF can have higher concentrations of certain hydrocarbons and oxygenates than fuel oil and gasoline.

We are not proposing revisions to the comparable fuel exclusion to address the analytical and blending recommendations raised by ACC.

a. Why Are We Not Proposing Revisions To Address Analytic Concerns? The specifications in Table 1 to § 261.38 for volatile organic compounds that were not detected in fuel oil or gasoline were based on the low levels of detection achievable for fuel oil rather than the much higher levels of detection achievable for gasoline. Given that only benzene, toluene, and naphthalene were detected, EPA used this approach for most of the volatile organic compounds. EPA acknowledged this deviation from establishing the specification for nondetected compounds as the highest level of detection in a benchmark fuel and explained that the levels of detection for volatile compounds in gasoline were inflated because of matrix effects. ACC suggested that EPA consider the fact that many waste fuels may pose the same matrix effects as gasoline, such that the fuel oil-based specifications would not be reasonably achievable.

We believe that it would not be appropriate to consider increasing the specifications for all volatile organic compounds and base them on the higher levels of detection in gasoline rather than fuel oil levels of detection because most of the compounds would simply not be expected to be found in fuel oil or gasoline. Rather, only certain hydrocarbons would be expected to be in these fuels. We could potentially also consider oxygenates, however, because they are within a class of compounds that are added to fuels to enhance combustion. It appeared, however, that this revision would not likely result in additional hazardous waste fuel being conditionally excluded. There were very few, if any, waste fuels that meet the specifications for all volatile compounds, except for the enumerated hydrocarbons and oxygenates, and that also could meet revised, higher specifications for the hydrocarbons and oxygenates based on the levels of detection in gasoline. Consequently, we are not pursuing this approach further but, nonetheless, solicit comment on such an approach.

b. Why Are We Not Proposing Revisions To Address Blending Concerns? A condition of the existing comparable fuel exclusion is that blending to meet the specification (except for viscosity) is prohibited to preclude dilution to avoid treatment.[3] ACC noted that waste fuels often contain incidental contamination of metals, such as chromium and manganese from corrosion of stainless steel vessels and pipes, and that blending to meet the specifications for

[1] *See http://www.epa.gov/epaoswer/osw/conserve/strat-plan/strat-plan.htm#rccplan.*

[2] Letter from American Chemistry Council (Carter Lee Kelly, Leader, Waste Issues Team, and Robert A. Elam, Director, Regulatory Affairs, Waste Issues Team) to Robert Springer and Matt Hale, USEPA, dated November 24, 2003.

[3] See 63 FR at 33795, and existing § 261.38(c)(3–4).

low levels of metals appears reasonable. We believe that blending to meet the specifications for metals is explicitly prohibited because it would be inconsistent with the section 3004(m) hazardous waste treatment provisions (which, although not directly applicable, articulate important overall statutory objectives) which require hazardous constituents to be removed or destroyed by treatment, not diluted. See 63 FR at 33795.

We believe, however, that blending to meet the specification for organic compounds that may be present in fuel oil or gasoline—hydrocarbons—or that are within a class of compounds that are added to fuels to enhance combustion—oxygenates—could be considered. These compounds would not be diluted to avoid treatment; they would still be treated by combustion. However, it appears that there were very few, if any, additional waste fuels that would be excluded under such a blending provision. Nonetheless, we solicit comment on such an approach and its applicability to additional waste fuels.

2. How Has EPA Involved Stakeholders in Discussions Regarding Potential Revisions to the Comparable Fuel Exclusion?

On December 15, 2005, EPA convened a public meeting of stakeholders to discuss potential revisions to the comparable fuel exclusion under 40 CFR 261.38.[4] Meeting notes are available in the docket for this rulemaking.[5] Participants in the stakeholder meeting raised several issues during the meeting and our responses are included in the meeting notes. In addition, several participants submitted written comments after the meeting. These comments and our responses are available in the docket to today's proposal.[6]

III. Summary of the Proposed Rule

Today's proposed rule would expand the comparable fuel exclusion by conditionally waiving the specifications for certain hydrocarbons and oxygenates listed in Table 1 to § 261.38. This excluded waste fuel would be called emission-comparable fuel. We are also proposing to clarify the regulatory status of existing comparable fuel that no longer meets the conditions of the exclusion.

A. What Are the Conditions for Exclusion of Emission-Comparable Fuel (ECF)?

ECF is a fuel derived from hazardous waste but which would be excluded from the RCRA hazardous waste regulations if it meets prescribed specifications and management conditions. The ECF specifications would be the same as those that are applicable to comparable fuel, except the specifications for particular hydrocarbons and oxygenates would not apply. See proposed § 261.38(a)(2). The exclusion would apply from the point that ECF meets the specifications.

Special conditions of the exclusion specific to ECF would include the following design and operating conditions for the ECF burner: (1) The burner must be a watertube steam boiler other than a stoker-fired boiler; (2) carbon monoxide (CO) must be monitored continuously, must be linked to an automatic ECF feed cutoff system, and must not exceed 100 ppmv on an hourly rolling average (corrected to 7% oxygen); (3) the boiler must fire at least 50% primary fuel on a heating value or volume basis, whichever results in a higher volume of primary fuel, and the primary fuel must be fossil fuel or tall oil with a heating value not less than 8,000 Btu/lb; (4) the boiler load must be 40% or greater; (5) the ECF must have an as-fired heating value of 8,000 Btu/lb or greater; (6) ECF must be fired into the primary fuel flame zone; (7) the ECF firing system must provide proper atomization; and (8) if the boiler is equipped with an electrostatic precipitator (ESP) or fabric filter (FF) and does not fire coal as the primary fuel, the combustion gas temperature at the inlet to the ESP or FF must be continuously monitored, must be linked to the automatic ECF feed cutoff system, and must not exceed 400 °F on an hourly rolling average. See proposed § 261.38(c)(2). (Please note that we specifically request comment on these proposed conditions, as discussed later.) The principal conditions that would apply to ECF boilers—waterwall steam boiler, low CO, burning high Btu primary fuel that is properly atomized, operating at boiler loads above 40%—reflect design and operating conditions typical for oil-fired industrial boilers that operate under good combustion conditions.

In addition, ECF must be stored in tanks, tank cars, or tank trucks. See proposed § 261.38(c)(1). These tank systems, tank cars, and tank trucks would be excluded from regulation if they meet conditions similar to those which apply to fuel oil (the product most analogous to ECF), along with additional conditions necessary to minimize the potential for releases to the environment accounting for the differences between ECF and fuel oil. These include: (1) Certain provisions of the Spill Prevention, Control, and Countermeasures (SPCC) requirements applicable to oil under §§ 112.2, 112.5, 112.7, and 112.8; (2) secondary containment and leak detection requirements for tank systems, including use of liners, vaults, or double-walled tanks; (3) preparedness and prevention, emergency procedures, and response to release provisions adopted from requirements applicable to tank systems that store hazardous waste, and (4) fugitive air emission technical controls adopted from Subpart EEEE, Part 63, for organic liquids distribution (which would apply not only to any hazardous air pollutants among the oxygenates and hydrocarbons, but also would apply to the 11 oxygenates for which there would be no specification in this proposed rule and which are hazardous constituents under RCRA having significant vapor pressure but which are not hazardous air pollutants under the CAA). Underground tanks storing ECF are subject to the applicable requirements of 40 CFR Part 280. A further condition of the exclusion is that the generator must document in the waste analysis plan how precautions will be taken to prevent mixing of ECF and other materials which could result in adverse consequences from incompatible materials. In addition, to be excluded, ECF would need to meet all of the conditions applicable to existing comparable fuel, including: (1) The specifications under Table 1 to 261.38, except for the specifications for certain hydrocarbons and oxygenates; (2) prohibition on blending to meet the specifications, except for viscosity; [7] (3) notifications to state RCRA and Clean Air Act (CAA) Directors and public notification; (4) waste analysis plans; (5) sampling and analysis conditions; (6) prohibition on speculative accumulation; (7) recordkeeping; (8)

[4] See e-mail from Jim Berlow, USEPA, to Jim Pew, Earthjustice; Melvin Keener, Coalition for Responsible Waste Incineration; David Case, Environmental Technology Council; Michael Benoit, Cement Kiln Recycling Coalition; Barbara Simcoe, Association of State and Territorial Solid Waste Management Officials; and Robert Elam, American Chemistry Council, dated November 23, 2005.

[5] See memorandum from Bob Holloway, USEPA, to Docket Number RCRA 2005–0017, entitled ''Meeting Notes—Comparable Fuel Stakeholder Meeting on Dec. 15, 2005,'' dated January 4, 2006.

[6] USEPA, ''Response to Comments on the December 15, 2005 Stakeholder Meeting Regarding Expanding the Comparable Fuel Exclusion,'' May 2007.

[7] ECF must have a heating value of 5,000 Btu/lb or greater as-generated (or after bona fide treatment), but must have a heating value of 8,000 Btu/lb, as fired. Thus, ECF with an as-generated heating value below 8,000 Btu/lb may be blended with other fuels to achieve a heating value of 8,000 Btu/lb.

burner certification to the generator; and (9) ineligible waste codes.

ECF that has lost its exclusion because of failure to satisfy a condition of the exclusion must be managed as a hazardous waste from the point of ECF generation.[8] In addition, ECF that is spilled or leaked and cannot be burned under the conditions of the exclusion is a waste (it is a hazardous waste if it exhibits a characteristic of hazardous waste or if the ECF were derived from a listed hazardous waste) and must be managed in accordance with existing federal and state regulations. Furthermore, if an ECF tank system ceases to be operated to store ECF product, but has not been cleaned by removing all liquids and accumulated solids within 90 days of cessation of ECF storage operations, the tank system would become subject to the RCRA subtitle C hazardous waste regulations.[9] (This is the same principle that applies to any product storage unit when it goes out of service. See § 261.4(c).) Liquids and accumulated solids removed from a tank system that ceases to be operated for storage of ECF product are waste (they are hazardous wastes if they exhibit a characteristic of hazardous waste or if the ECF were derived from a listed hazardous waste).

B. What Changes Is EPA Proposing to the Conditions for Existing Comparable Fuel?

The proposed rule would restructure the current conditions for comparable fuel (and syngas fuel) to make the regulatory language more readable given that the regulation must accommodate the proposed exclusion for ECF. Consequently, we are redrafting the entire section for clarity. In addition, we are making technical corrections to several provisions of the rule.[10] We regard these language changes as purely technical, and thus will accept comment only on whether the suggested language change expresses the current meaning of the provision. We are not reexamining, reconsidering, or otherwise reopening these provisions for comment.

We are, however, proposing to amend several provisions that apply to comparable fuel for the same reasons that we are proposing to apply the amended provisions to ECF. We specifically request comment on whether these clarifications and conforming amendments are appropriate:

- We are proposing to clarify the consequences of failure to satisfy the conditions of the existing comparable fuel exclusion. The material must be managed as hazardous waste from the point of generation. In addition, we are proposing to clarify that excluded fuel that is spilled or leaked and that no longer meets the conditions of the exclusion must be managed as a hazardous waste if it exhibits a characteristic of hazardous waste or if it was derived from a listed hazardous waste when the exclusion was claimed. See proposed § 261.38(d).

- We are proposing to clarify the status of tanks that cease to be operated as comparable fuel storage tanks. The tank system becomes subject to the RCRA hazardous waste facility standards if not cleaned of liquids and accumulated solids within 90 days of ceasing operations as a comparable fuel tank. In addition, we are proposing to clarify that liquids and accumulated solids removed from the tank after the tank ceases to be operated as a comparable fuel product tank must be managed as hazardous waste if they exhibit a characteristic of hazardous waste or if they were derived from a listed hazardous waste when the exclusion was claimed. See proposed § 261.38(b)(13).

- We are proposing to waive the RCRA closure requirements for tank systems that are used only to store hazardous wastes that are subsequently excluded as comparable fuel. See proposed § 261.38(b)(14).

- We are proposing to clarify the regulatory status of boiler residues, including bottom ash and emission control residue. Burning excluded fuel that was derived from a listed hazardous waste does not subject boiler residues to regulation as derived-from hazardous waste. See § 261.38(b)(12).

- We are proposing that the one-time notice by the generator to regulatory officials include an estimate of the average and maximum monthly and annual quantity of waste for which an exclusion would be claimed.[11] See proposed § 261.38(b)(2)(i)(D).

Part Two: Rationale for the Proposed Rule

I. What Is the Rationale for Excluding Emission-Comparable Fuel From the Definition of Solid Waste?

Emission-comparable fuel (ECF) is a fuel derived from hazardous waste, but which would be excluded from RCRA hazardous waste regulation if it meets prescribed specifications and management conditions. The ECF specifications would be the same as those that currently apply to existing comparable fuel, except the specifications for particular hydrocarbons and oxygenates would not apply. See proposed § 261.38(a)(2).[12]

The exclusion would be based on the rationale that ECF has fuel value, that the hydrocarbon and oxygenate constituents no longer subject to a specification themselves have fuel value, and that emissions from burning ECF in an industrial boiler operating under good combustion conditions are likely not to differ from emissions from burning fossil fuels under those same conditions. Emissions from burning ECF in an industrial boiler operating under good combustion conditions would be comparable to emissions from burning fuel oil in an industrial boiler operating under the same good combustion conditions because operating a boiler under good combustion conditions, evidenced by carbon monoxide (CO) emissions below 100 ppmv (on an hourly rolling average), assures the destruction of organic compounds generally to trace levels, irrespective of the type or concentration of the organic compound in the feed.[13] As

[8] Please note that we request comment on whether the final rule should include a ''reasonable efforts'' provision that would provide that the failure of an off-site, unaffiliated burner to meet the proposed conditions or restrictions of the exclusion would not mean the material was considered waste when handled by the generator, as long as the generator can adequately demonstrate that he has made reasonable efforts to ensure that the material will be managed by the burner under the conditions of the exclusion. See discussion in Part Two, Section V.B of the preamble.

[9] If the tank is used to actively accumulate hazardous waste after being taken out of service as an ECF product tank, the tank may be eligible for the provisions under § 262.34 that waive the permit requirements for generator tanks that accumulate hazardous waste for not more than 90 days.

[10] See memorandum from Bob Holloway, USEPA, to Docket ID No. EPA–HQ–RCRA–2005–0017, dated January 10, 2007.

[11] Providing an estimate of excluded quantities would help regulatory officials establish inspection and monitoring priorities. This requirement was an oversight when the exclusion was initially promulgated. We required the burner to issue a public notice that included this information (see existing § 261.38(c)(1)(ii)(D)), but we inadvertently did not require the generator who claims the exclusion to provide this information in his notice to regulatory officials.

[12] Table 1 to § 261.38 provides specifications for 37 hydrocarbons and oxygenates. For ECF, the specifications would not apply for those compounds, except for PAHs and naphthalene, as discussed in Part Two, Section III, of the text. In addition, there would be firing rate restrictions for ECF that contained more than 2% benzene or acrolein.

[13] This assumes that fuels are fired into the flame zone, thus avoiding total ignition failure. If a waste fuel were inadvertently fired out of the flame zone, the fuel may not even partially combust. If this were to happen, CO levels could be low even though organic emissions could be high. ECF boilers would be required to fire ECF into the primary fuel flame zone. Also see USEPA, ''Draft Technical Support

Continued

hydrocarbons are oxidized during combustion, eventually (ideally) to carbon dioxide and water, CO is formed just prior to complete oxidation to carbon dioxide. Because CO is difficult to oxidize, it is the rate-limiting step in the oxidation process. Thus, low CO levels indicate good combustion and low levels of organic compounds.

EPA has discretion to classify such material as a fuel product, and not as a waste. See generally *Safe Foods and Fertilizer* v. *EPA*, 350 F. 3d 1263, 1269–71 (D.C. Cir. 2004) (secondary materials physically comparable to virgin products which would be used in their place, or which pose similar or otherwise low risks when used in the same manner as the virgin product, need not be considered ''discarded'' and hence need not be classified as solid wastes). Given that ECF (including the hydrocarbon and oxygenate portion) would have legitimate energy value and that emissions from burning ECF are comparable to fuel oil when burned in an industrial boiler under the good combustion conditions typical of such boilers, classifying such material as a fuel product and not as a waste promotes RCRA's resource recovery goals without creating a risk from burning greater than those posed by fossil fuel. Under these circumstances, EPA can permissibly classify ECF as a non-waste.

The conditional exclusion would be an exclusion only from the RCRA subtitle C regulations, and not from the emergency, remediation and information-gathering sections of the RCRA statute [sections 3007, 3013, and 7003]. This is consistent with the principle already codified for other excluded hazardous secondary materials—that the exclusion is only from the RCRA regulatory provisions, and not from these statutory authorities. See § 261.1(b). We are restating this principle here in the interest of clarity, not to reopen the issue. The legal basis for the distinction of the Agency's authority under these provisions is that they use the broader statutory definition of solid waste (and hazardous waste, as well) and so need not (and should not) be read as being limited by the regulatory definition. See, for example, 50 FR at 627. See also *Connecticut Coastal Fishermen's Assn.* v. *Remington Arms*, 989 F. 2d 1305, 1313–15 (2d Cir. 1993) (EPA may permissibly ascribe different definitions to the term ''solid waste'' for regulatory and statutory purposes).

Although ECF could have higher concentrations of particular hydrocarbons and oxygenates than the benchmark fossil fuels—fuel oil and gasoline—that EPA used to establish the specifications in Table 1 to § 261.38, higher levels of hydrocarbons and oxygenates in ECF do not imply that burning ECF for energy recovery constitutes waste management because: (1) Hydrocarbons naturally occur in virgin fuels [14] and oxygenates are a class of compounds that are added to virgin fuels to enhance combustion; [15] (2) the hydrocarbons and oxygenates have a heating value of 10,000 Btu/lb to 18,500 Btu/lb,[16] which is comparable to the range for virgin fuels (e.g., coal and fuel oil); and (3) the hydrocarbons and oxygenates produce emissions comparable to virgin fuels when burned under conditions typical of those under which virgin fuels are burned.

We note, however, that ECF can pose a greater hazard during storage than fuel oil given that ECF can contain higher concentrations of certain hazardous, volatile hydrocarbons and oxygenates. We are consequently proposing to condition the exclusion on certain storage conditions similar to those applicable to commercial products and commodities analogous to ECF, namely fuel oil and other commercial organic liquids. See discussion below in Part Two, Section IV.

In addition, we are proposing to condition the exclusion on requirements for the design and operation of the ECF burner to ensure that ECF is burned under the good combustion conditions typical of most fossil fuel boilers. See discussion below in Part Two, Section II. These conditions should ensure that emissions from burning ECF remain comparable to emissions from burning fossil fuels.

A. Why Would the Specifications Be Waived Only for Hydrocarbons and Oxygenates?

We are proposing not to apply the specifications for certain hydrocarbons and oxygenates, but are proposing to retain the specifications for metals and the other categories of organic compounds for which specifications are provided under § 261.38. We would not apply the specifications for these hydrocarbons [17] because: (1) It is reasonable to assume that these compounds may be present in fossil fuels (see 63 FR at 33791); and (2) when they are burned under the good combustion conditions typical for fossil fuel-fired boilers, emissions from burning these compounds would be comparable to emissions from burning fuel oil.

We also would not apply the specifications for the listed oxygenates because they are a class of organic compounds that are added to fuels to enhance combustion.[18] These compounds would burn cleanly under the good combustion conditions typical of a fuel oil-fired industrial boiler and would generate only trace or comparable levels of emissions.

It is appropriate to retain the specifications for metals since they do not contribute energy and are not destroyed during the combustion process. Given that the metal specifications in Table 1 to § 261.38 reflect levels that can be present in fuel oil, excess, noncontributing metals are ''along for the ride,'' suggesting discarding. Moreover, metals emissions would necessarily be higher than emissions from fuel oil if the metals specifications do not apply because oil-fired boilers typically lack optimized particulate control due to low metal content of commercially available fuel oils.

Also, it is appropriate to retain the specifications for the other categories of organic compounds listed under Table 1 to § 261.38—sulfonated organics, nitrogenated organics, and halogenated organic compounds. These organic compounds, for the most part, are not likely to be found in the benchmark fuels—fuel oil and gasoline—we used to establish the specifications. And, unlike oxygenates, these organic compounds are not within a class of compounds that are added to fossil fuels to enhance combustion. These hazardous compounds also would appear to be along for the ride when present at concentrations higher than benchmark

Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Section 5.

[14] We explained in the final comparable fuel rule that it is reasonable to assume that the Table 1 hydrocarbons that we did not detect in fuel oil or gasoline could in fact be present at levels up to the detection limit. See 63 FR at 33791.

[15] Examples of fuel oxygenates are: Ethanol; methyl tert-butyl ether (MTBE), tert-amyl methyl ether (TAME); diisopropyl ether (DIPE); ethyl tert-butyl ether (ETBE); tert-amyl alcohol (TAA); and tert-butyl alcohol (TBA). For further discussion, see USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Section 3.1.

[16] USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Section 2.2.

[17] Please note, however, that we are proposing to retain the specifications for certain hydrocarbons: PAHs (polycyclic aromatic hydrocarbons) and naphthalene. See discussion in the text in Part Two, Section III.

[18] We acknowledge that oxygenates are added to fuels burned in internal combustion engines rather than fuels burned in industrial boilers. However, oxygenates burn cleanly—they do not contain halogens, sulfur, or nitrogen that would result in emissions of halogen acids and sulfur and nitrogen oxides.

fuels, and consequently their destruction via combustion can be viewed as waste management.

B. Do Available Data and Information Support a Comparable Emissions Finding?

We investigated whether emissions from burning ECF in an industrial boiler operating under prescribed good combustion conditions would be comparable to emissions from burning fuel oil in an industrial boiler operating under good combustion conditions. We evaluated organic emissions data from watertube steam boilers (other than stoker-fired boilers) burning hazardous waste and compared those emissions against emissions from oil-fired industrial boilers. In addition, we conducted two qualitative analyses of the risk that ECF emissions may pose: (1) Evaluation of RCRA risk assessments for watertube steam boilers burning hazardous waste to determine if organic emissions had been found to pose a hazard to human health and the environment; and (2) a limited comparative risk assessment for dioxin/furan emissions.

As discussed below, we believe that available data and information indicate that emissions from burning ECF under the proposed, prescribed conditions would be comparable to emissions from an oil-fired industrial watertube steam boiler operating under good combustion conditions.

1. Evaluation of Organic Emissions Data for Hazardous Waste Boilers

In the absence of emissions data from boilers burning ECF, we evaluated organic emissions data from watertube steam boilers burning hazardous waste and compared those emissions against emissions from oil-fired industrial boilers. Using hazardous waste boiler emissions as a surrogate for ECF boiler emissions is a reasonable worst-case because the exclusion would be conditioned on the ECF boiler operating under conditions relating to assuring good combustion conditions that are at least as stringent as those required of boilers burning hazardous waste.[19]

We obtained organic emissions data for 26 hazardous waste watertube steam boilers which data were generated during risk-burn testing required under RCRA omnibus authority codified at § 270.32(b)(2). EPA requires this testing as necessary on a site-specific basis to ensure that emissions are protective of human health and the environment. We have data for 28 test conditions for the 26 boilers that provide 175 detected measurements of organic compounds, where a measurement is a three-run set.[20] We also have data for hazardous organic compounds emitted from oil-fired industrial boilers. Those data were compiled in support of the NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters promulgated under Part 63, Subpart DDDDD. See 69 FR 55218 (Sept. 13, 2004). We use oil-fired industrial boiler emissions data for comparison because fuel oil is the closest analogous fuel to ECF, and ECF could be burned only in industrial or utility boilers. See discussion below in Section II.B.1.

We have emissions data for both hazardous waste boilers and oil-fired industrial boilers for 26 hazardous organic compounds. We also have hazardous waste boiler emissions data for another 33 hazardous organic compounds for which we do not have oil-fired boiler emissions data for comparison. We discuss our investigation of these data below.

a. Hazardous Organic Compounds for Which We Have Both Hazardous Waste Boiler and Fuel Oil Boiler Emissions Data. We have both hazardous waste boiler and fuel-oil boiler emissions data for 26 hazardous organic compounds. The great majority of the hazardous waste boiler test condition averages for these compounds (150, or greater than 85%) were unequivocally comparable to fuel oil emissions—the hazardous waste emissions were below the oil emissions 95th percentile level. There were 24 test condition averages, however, that exceeded the oil emissions 95th percentile level for 10 compounds.[21] Nonetheless, we do not believe that these exceedances indicate that ECF emissions would be higher than oil-fired boiler emissions, as discussed below.

For 12 of the 24 exceedances, laboratory contamination of the sample was known or suspected. Specifically, for nine exceedances—six for dichloromethane, two for benzene, and one for toluene—the constituent being measured was found in the blank, while there were three additional exceedances for dichloromethane, a common lab contaminant that is frequently found in laboratory samples and in the environment. For one of these test conditions, the report indicated that dichloromethane is a common laboratory contaminant, implying that the data may be suspect. For the other two test conditions, laboratory contamination was not discussed in the test reports. Even if laboratory contamination were not an issue for these two tests, however, we note that these hazardous waste boilers were not operating under the conditions that are proposed for an ECF boiler. Both boilers were burning waste fuels with a heating value below the 8,000 Btu/lb minimum heating value that is proposed for ECF. In addition, it is unclear if one boiler was burning vent gas or natural gas as the primary fuel. ECF must be burned with at least 50% primary fuel that is fossil fuel. Operating under conditions less stringent than proposed for ECF boilers could result in higher emissions of organic compounds.

For seven exceedances, hazardous waste boiler emissions were at trace levels[22]—there was a *de minimis* increase in emissions. Test condition averages were below 8 µg/dscm for the exceedances for anthracene, benzo[a]pyrene, ethylbenzene, fluorine, 2-methlynaphthalene, and phenanthrene.

In addition, an exceedance for acetaldehyde was at an emissions level of 100 µg/dscm, while oil emission levels for acetaldehyde are virtually comparable at 70 µg/dscm. However, the hazardous waste boiler emissions for acetaldehyde were well below the 95th percentile emissions for natural gas boilers, 635 µg/dscm. This is relevant because ECF may be burned with natural gas as the primary fuel. Further,

[19] See discussion in Part Two, Section II, of the text describing the ECF boiler conditions. The CO controls for ECF boilers plus the requirement to fire ECF into the primary fuel flame zone are equivalent to the controls on organic emissions for hazardous waste boilers—CO controls and compliance with the 99.99% destruction and removal efficiency (DRE) standard. The other ECF boiler controls are more restrictive than controls that apply to hazardous waste boilers, but are appropriate to help assure that an ECF boiler operates under good combustion conditions given that ECF would be burned under a conditional exclusion absent a RCRA permit and the regulatory oversight typical for a RCRA hazardous waste combustor, and absent the extensive operating limits (e.g., combustion chamber temperature, maximum load) that are established subsequent to emissions testing to demonstrate compliance with a destruction and removal efficiency (DRE) standard.

[20] A test condition is normally comprised of three test runs conducted under identical (controllable) operating conditions.

[21] Please note that we have reanalyzed the oil-fired boiler emissions data to identify the 95th percentile benchmarks based on test condition averages, rather than test runs, based on comments submitted by one of the peer reviewers. As discussed in Part Two, Section VII, although the reanalysis resulted in several additional exceedances of the oil emissions benchmarks, our conclusion remains unchanged. It is reasonable to conclude that ECF emissions will be either generally comparable to oil emissions or at *de minimis* levels.

[22] Emissions of 8 µg/dscm for high molecular weight compounds such as these are equivalent to approximately 0.005 ppmv expressed as propane equivalents. Thus, these are *de minimis* concentrations considering that the hydrocarbon emission limit for boilers burning hazardous waste is 10 ppmv, expressed as propane equivalents. See § 63.1217(a)(5)(ii).

we note that the hazardous waste boiler was operating under conditions less stringent than proposed for ECF boilers—it was burning only 20% natural gas as the primary fuel, while it is proposed that ECF boilers fire at least 50% primary fuel. Thus, acetaldehyde emissions may be higher than they would have been if the boiler had the hot, stable flame that burning 50% natural gas (or fuel oil) would provide.

Finally, there were four exceedances for benzene that we nonetheless believe are comparable to fuel oil emissions. Three of the exceedances were below the highest fuel oil emission test run level of 200 µg/dscm, while the fourth exceedance was at a level of 260 µg/dscm, just somewhat higher. More importantly, for all four exceedances, the hazardous waste boiler was not operating under the conditions proposed for an ECF boiler. For all four exceedances, the hazardous waste fuel had a heating value below 2,000 Btu/lb compared to 8,000 Btu/lb that is proposed for ECF. And, for one of the exceedances, the hazardous waste fuel had a viscosity of 165 cSt, while the maximum viscosity for ECF would be 50 cSt. To reiterate, operating under conditions less stringent than proposed for ECF boilers could result in higher emissions of organic compounds.

Notwithstanding this analysis of available emissions data, we acknowledge that, when ECF with higher concentrations of certain hydrocarbons and oxygenates than fuel oil is burned even under good combustion conditions, emissions of hazardous organics may be somewhat higher than those from burning fossil fuel. This is because combustion is generally a percent-reduction process. Thus, even though good combustion conditions may ensure a very high destruction efficiency (e.g., 99.9999% reduction), emission concentrations may nonetheless increase as the feedrate of an organic compound increases. We believe, however, that these increases would be *de minimis* because operating under the good combustion conditions proposed for ECF boilers ensures that emissions of hazardous organic compounds would generally be at trace levels, and, as discussed below, protective of human health and the environment.[23]

b. Compounds for Which We Only Have Hazardous Waste Boiler Emissions Data. We have hazardous waste boiler emissions data for 33 hazardous organic compounds for which we do not have oil-fired boiler emissions data for comparison. Average hazardous waste boiler emissions for each of these compounds are at trace levels—below 11 µg/dscm[24]—except for bis(2-ethylhexyl)phthalate and chloroform.

We have bis(2-ethylhexyl)phthalate emissions data for 15 test conditions (generally comprised of three runs) representing 15 different boilers. Test condition average emissions ranged from 0.34 µg/dscm to 600 µg/dscm for the boilers, with an average of 69 µg/dscm. Although the highest test condition average—600 µg/dscm—appeared to be an outlier given that the second highest average was 130 µg/dscm and 12 test conditions were below 42 µg/dscm, we determined that it is not a statistical outlier.[25] Nonetheless, we note that: (1) The boiler with the highest emissions—600 µg/dscm—was not operating under the conditions that are proposed for an ECF boiler (which could result in higher emissions)—the primary fuel firing rate was approximately 30% rather than a minimum of 50%, and boiler load was approximately 30% rather than a minimum of 40%; and (2) bis(2-ethylhexyl)phthalate is known to be a common lab contaminant, and thus the reported emissions levels may be suspect.

For chloroform, we have emissions data for 9 test conditions (generally comprised of three runs) representing 9 different boilers. Test condition average emissions ranged from 0.28 µg/dscm to 270 µg/dscm for the boilers, with an average of 45 µg/dscm. Although the highest test condition average—270 µg/dscm—appeared to be an outlier given that the second highest average was 85 µg/dscm and the remaining test conditions did not exceed 16 µg/dscm, we determined that it is not a statistical outlier. We note, however, that the boiler with the highest emissions—270 µg/dscm—was not operating under the conditions that are proposed for an ECF boiler—it burned a waste fuel with a heating value below 8,000 Btu/lb and it is not clear whether the boiler burned process vent gas or natural gas as primary fuel.

2. Evaluation of RCRA Risk Assessments

In addition to the analysis of emission concentrations discussed above, we reviewed the RCRA risk assessments[26] that had been completed by June 2006 for hazardous waste watertube steam boilers other than stoker-fired boilers to determine if organic emissions under the good combustion conditions required by the standards under Part 266, Subpart H, may result in unacceptable risk to human health and the environment. We determined that such risk assessments had been conducted at 13 facilities and decisions on whether omnibus/additional permit conditions are needed to ensure emissions are protective have been made for nine of those facilities. A decision to include an omnibus permit condition to address organic emissions has been made for only two of the nine facilities, however.

The first facility operated several boilers equipped with a common electrostatic precipitator. Risk-based dioxin emission limitations and associated testing and temperature monitoring requirements were established in the permit based upon a finding that dioxin/furan emissions during an isolated test event exceeded risk levels of concern. During that test event, artificial chlorine spiking into the waste feed was conducted. During subsequent testing under the permit terms, chlorine spiking did not take place and compliance with the risk-based dioxin/furan emission limitations was demonstrated. Electrostatic precipitator operating temperatures during the subsequent tests ranged from 396 °F to 418 °F. We note, however, that the chlorine specification proposed for ECF would prohibit chlorine concentrations from approaching the levels present during the instances of chlorine spiking at this facility. In addition, we also note that today's proposal would require that ECF boilers (other than coal-fired boilers) equipped with an ESP or FF maintain a gas temperature below 400 °F as a condition of the exclusion. See discussion in Section II below.

For the second facility where omnibus permit conditions were imposed, there was no finding of excess risk associated with any organic constituents. Rather, the omnibus permit conditions serve as a trigger for a reassessment of risk if emissions levels higher than those considered in the initial risk assessment were measured.

This analysis confirms our view that organic emissions from hazardous waste

[23] Please note that a peer reviewer questioned whether ECF emissions could, in fact, be expected to be comparable to oil-fired boiler emissions given the unlimited concentrations of the listed hazardous compounds (i.e., benzene, toluene, and the oxygenates) that may be present in ECF. We respond to this comment in Part Two, Section VII of the preamble.

[24] As discussed in footnote 22, emissions at this low concentration are in the *de minimis* range.

[25] USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Appendix C.

[26] See § 270.32(b)(2).

boilers operating under good combustion conditions required under §§ 266.104 and 63.1217 are generally protective. It also confirms our view that organic emissions from ECF boilers operating under the good combustion conditions discussed in Section II below should be protective.

3. Comparative Risk Assessment for Dioxin/Furan

Finally, we also conducted an abbreviated comparative risk assessment for dioxin/furan emissions from boilers burning hazardous waste and that meet the design conditions for an ECF boiler discussed below in Section II—a watertube steam boiler that is not stoker-fired. The abbreviated evaluation used one component of the comparative risk evaluation used to support the Phase II hazardous waste combustor MACT for boilers [27]—the Margin of Exposure (MOE) analysis.[28] The emission-adjusted MOE analysis uses the risk ''safety margins'' (i.e., modeled MOEs) determined from the MACT Phase I comprehensive risk assessment for hazardous waste incinerators [29] to determine whether, considering emissions alone, risks for a second universe, here, the ECF boilers, could rise to a level of concern.[30] Smaller MOEs correspond to a greater potential for risk beyond the level of concern (i.e., 1E–05 lifetime cancer risk). In this analysis, we: (1) Revised the dioxin/furan emissions data base for Phase II hazardous waste boilers to establish a data base of boilers that meet the ECF boiler design conditions (i.e., by eliminating boilers other than watertube steam boilers that are not stoker-fired) and by adding dioxin/furan emissions data obtained during the evaluation of risk burns for hazardous waste boilers, as discussed above; (2) calculated point estimates and confidence intervals for the revised emissions data base; (3) combined the Phase I incinerator data base with the revised (i.e., ECF) boiler data base and conducted tests for common generalized percentiles; and (4) adjusted the MOE, if appropriate.[31] The analysis indicates that the emissions-adjusted MOEs representing the ECF boilers are higher than the MOEs for the Phase I incinerators. This suggests a lower potential for risk for the ECF boilers compared to hazardous waste incinerators. This means that, within the limitations of the analyses, dioxin/furan emissions from ECF boilers pose no greater hazard than the emissions from hazardous waste incinerators, and therefore, should remain within levels that are protective.

Based on this information—comparison of emissions concentrations from hazardous waste boilers and oil-fired boilers; evaluation of omnibus risk assessments; and evaluation of dioxin/furan risk—we conclude that emissions from burning ECF in a boiler under the conditions proposed today would be comparable to fuel oil emissions and would be generally protective of human health and the environment. We specifically request additional data and comment on our analyses and conclusions.

II. What Conditions Would Apply to Burners of Emission-Comparable Fuel?

The ECF exclusion proposed today would be conditioned on burning ECF under conditions typical of a fuel oil-fired industrial boiler operating under good combustion conditions. The ECF conditions would ensure that the boiler maintains a hot, stable flame, and that ECF is properly atomized and fired into that flame. In addition, post-combustion conditions would minimize the potential for dioxin/furan formation by controlling the combustion gas temperature at the inlet to a dry particulate matter control device for boilers so-equipped. Accordingly, we propose the following conditions: (1) The burner must be a watertube steam boiler other than a stoker-fired boiler; (2) carbon monoxide (CO) must be monitored continuously, must be linked to an automatic ECF feed cutoff system, and must not exceed 100 ppmv on an hourly rolling average (corrected to 7% oxygen); (3) the boiler must fire at least 50% primary fuel on a heat input or volume basis, whichever results in a higher volume of primary fuel, and the primary fuel must be fossil fuel or tall oil with a heating value not less than 8,000 Btu/lb; (4) the boiler load must be 40% or greater; (5) the ECF must have an as-fired heating value of 8,000 Btu/lb or greater; (6) ECF must be fired into the primary fuel flame zone; (7) the ECF firing system must provide proper atomization; and (8) if the boiler is equipped with an electrostatic precipitator (ESP) or fabric filter (FF) and does not fire coal as the primary fuel, the combustion gas temperature at the inlet to the ESP or FF must be continuously monitored, must be linked to the automatic ECF feed cutoff system, and must not exceed 400 °F on an hourly rolling average. These conditions are consistent with oil-fired industrial boiler design and operating conditions that ensure good combustion (and post-combustion control of dioxin/furan) and ensure that emissions from burning ECF are comparable to fuel oil emissions.[32] In addition, as discussed in the previous section, such emissions would be at levels which are protective of human health and the environment.

The boiler design and operating conditions that ensure a hot, stable flame and good combustion of ECF (i.e., all of the conditions, except the condition to minimize post-combustion formation of dioxin/furan by limiting the gas temperature at the inlet to the ESP or FF) derive from extensive testing that EPA conducted in the mid-1980's to identify design and operating parameters that affect the combustion of hazardous organic compounds in waste fuels fired as supplementary fuel in boilers. See 52 FR at 16995–96 (May 6, 1987). EPA used the results of that testing to identify design and operating conditions that would ensure that waste fuel is properly atomized and fired into a hot, stable flame to ensure destruction of hazardous organics in the waste fuel to trace levels and to minimize formation of products of incomplete combustion (PICs) to levels that would not pose a hazard to human health or the environment.

Those operating conditions also reflect typical operations for an oil-fired industrial boiler operating under good combustion conditions: (1) As discussed below, CO levels below 100 ppmv are typically achieved by oil-fired industrial boilers; (2) the oil fuel provides a hot, stable flame; and (3) boilers generally operate at loads greater than 40% and can experience poor combustion conditions at lower loads. The design conditions—the boiler must be a watertube steam boiler that is not stoker-fired—also reflect industrial

[27] See 70 FR at 59536–37 (October 12, 2005).

[28] USEPA, ''Assessment of the Potential Costs, Benefits, & Other Impacts of the Hazardous Waste Combustion MACT Final Rule Standards,'' September 2005, Chapter 6.

[29] RTI International, ''Inferential Risk Analysis in Support of Standards for Hazardous Air Pollutant Emissions from Hazardous Waste Combustion,'' June 2005, Section 1.

[30] It must be emphasized that emission-adjusted MOEs should not be construed as predictions of the level of risk. Instead, they are only intended to provide an indication of whether risks could exceed a level of concern based on simplifying assumptions and as such, are subject to some level of uncertainty.

[31] See USEPA, USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Section 5.3.4.

[32] Given that burning ECF under the proposed conditions will destroy toxic organic compounds in the ECF generally to trace levels, we are proposing that burning excluded fuel that was derived from a hazardous waste listed under §§ 261.31–261.33 does not subject boiler residues, including bottom ash and emission control residues, to regulation as derived-from hazardous waste. See proposed § 261.38(b)(12).

boiler designs that help ensure optimum combustion efficiency. See discussion below in Section B.1.

A. Why Isn't a DRE Performance Test a Critical Requirement To Ensure Good Combustion Conditions?

EPA concluded from the boiler testing discussed above that: (1) Boilers cofiring hazardous waste fuels with fossil fuels where the hazardous waste provides less than 50 percent of the boiler's fuel requirements can achieve 99.99 percent destruction and removal efficiency (DRE) of POHCs (principal organic hazardous constituents) under a wide range of operating conditions (e.g., load changes, waste feed rate changes, excess air rate changes); (2) when boilers are operated at high combustion efficiency, as evidenced by flue gas carbon monoxide (CO) levels of less than 100 ppmv, DRE exceeds 99.99 percent; (3) boilers clearly operating under poor combustion conditions, as evidenced, for example, by smoke emissions, still achieved 99.99 percent DRE: (4) emissions of PICs appeared generally to increase as combustion efficiency decreased as evidenced by increased flue gas CO levels; and (5) emission of total unburned hydrocarbons (i.e., quantified Part 261, Appendix VIII pollutants, as well as unburned POHCs and other unburned organic compounds) may increase as combustion efficiency decreases as evidenced by an increase in flue gas CO levels. See 52 FR at 16995.

These results confirm that a 99.99% DRE regulatory requirement (coupled with compliance with limits on operating conditions established during the DRE performance test) has limited utility for ensuring that a combustor operates under the good combustion conditions necessary to destroy both hazardous organics in the fuel feed and PICs to levels that are protective of human health.[33] EPA has explained, however, why a limit on carbon monoxide emissions (i.e., 100 ppmv, hourly rolling average) is a conservative indicator of good combustion conditions for boilers (and other combustors) that will result in destruction of both POHCs and PICs. See 52 FR at 16998; 70 FR at 59461–463. Of the four combustion failure modes that EPA has identified—total ignition failure, partial ignition failure, combustion air failure, and rapid quench failure—only a total ignition failure could result in low CO and poor combustion of POHCs and PICs.[34] Total ignition failure could potentially occur in a boiler if the fuel firing gun inadvertently directed the fuel to a location in the combustion chamber away from the flame zone—i.e., if the fuel were not fired into the flame zone. The other combustion failure modes result in high CO and potentially high unburned organics:[35] partial ignition failure; combustion air failure; and rapid quench failure. Thus, it is important to ensure that waste fuels are fired into the flame zone of a boiler when relying on CO emission levels to ensure good combustion conditions (and that 99.99% DRE is achieved), as proposed for ECF boilers.

B. What Is the Rationale for the Proposed Burner Conditions?

From the discussion above, it could be argued that the only controls needed to ensure good combustion conditions and destruction of hazardous organics in ECF would be continuous monitoring of carbon monoxide and a requirement to fire ECF into the flame zone to avoid total ignition failure. Notwithstanding this view, we believe it is appropriate to apply additional controls to help ensure that an ECF boiler operates under the good combustion conditions typical of an oil-fired industrial boiler given that ECF would be burned under a conditional exclusion absent a RCRA permit and the regulatory oversight typical for a RCRA hazardous waste combustor. The proposed conditions would help ensure good combustion conditions by requiring that ECF has substantial heating value and that it is fired into a hot, stable flame. There are many industrial boilers that meet the design criteria (i.e., watertube steam boiler that is not stoker-fired) and the operating conditions generally reflect standard operating practice. The proposed conditions consequently are analogous to conditions under which fuel oil, the commercial product for which ECF substitutes, are burned. Furthermore, more than 90% of the candidate waste fuel streams identified by generators had heating values greater than 8,000 Btu/lb.[36]

The rationale for each of the proposed burner conditions is discussed below. We specifically request comment on each of these proposed conditions.

1. ECF Must Be Burned in a Watertube Steam Industrial or Utility Boiler That Is Not Stoker-Fired

A condition of the proposed exclusion would require the ECF burner to be a watertube steam boiler that does not fire fuels using a stoker or spreader-stoker feed system.[37] ECF also must be burned in a boiler rather than in an industrial furnace, such as a cement kiln, because the Agency conducted nonsteady-state emissions tests (as part of the boiler testing program discussed above) to identify the parameters that affect combustion efficiency only for boilers. Industrial furnaces have a primary purpose other than burning fuels most efficiently and we have not determined the operating conditions that would ensure good combustion conditions absent the regulatory oversight provided by the RCRA hazardous waste permit program.

The boiler must be a watertube, nonstoker boiler because there is a greater potential for poor distribution of combustion gases and localized cold spots in firetube and stoker boilers that can result in poor combustion conditions. In particular, stoker and spreader-stoker boilers generally burn solid fuels with a relatively large particle size on a bed, thus making even distribution of combustion air difficult. See 56 FR at 7148.

The boiler must be a steam boiler rather than a process heater because process heaters can have a primary purpose other than to burn fuels under optimum combustion conditions. An example is a process heater that quenches combustion gases to reduce gas temperatures to avoid overheating a process fluid. Such operating conditions could adversely affect combustion efficiency by interrupting the complete combustion of organic compounds.

Finally, the boiler must be an industrial or utility boiler as currently

[33] We note that, for this reason, hazardous waste boilers are currently exempt from the requirement to demonstrate 99.99% DRE if the boiler complies with specific design and operating conditions, including the principal organic emission control requirement of continuously monitoring CO and compliance with a limit of 100 ppmv. See § 266.110. We note further that the ECF boiler conditions proposed today are at least as stringent as the conditions provided by § 266.110.

[34] See USEPA, USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Appendix A.

[35] Because CO is more thermally stable than other intermediate combustion products, high CO emissions may or may not be indicative of high PIC emissions. If CO is low, however, combustion has progressed to the point that PIC emissions will be low (assuming total ignition failure is avoided). Thus, CO is considered a conservative indicator of good combustion. See 52 FR at 16998.

[36] Letter from American Chemistry Council (Carter Lee Kelly, Leader, Waste Issues Team, and Robert A. Elam, Director, Regulatory Affairs, Waste Issues Team) to Robert Springer and Matt Hale, USEPA, dated November 24, 2003.

[37] Stoker-fired boilers are designed to burn solid fuels (including coal, wood, municipal wastes, etc.) on a bed. Stokers are mechanical or pneumatic devices that feed solid fuels onto a grate at the bottom of the furnace and remove the ash residue after combustion. See USEPA, USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Section 3.3.2.

required under the comparable fuel exclusion. See proposed § 261.38(c)(2)(i). This would ensure that ECF is burned in boilers that are capable of handling this type of fuel (e.g., rather than boilers at schools, apartments, or hospitals) and that would be subject to Federal, state, or local air emission requirements.

We request comment on whether there are other types of combustors (e.g., thermal oxidizer) that may be able to burn ECF under the good combustion conditions comparable to an industrial watertube steam boiler (that is not of stoker design). Any suggestions for other types of combustors must include supporting information in order for the Agency to be able to consider it for final action.

2. CO Monitoring

A condition of the proposed exclusion would require that combustion gas CO be monitored continuously, that the CO recordings be linked to an automatic ECF feed cutoff system, and that CO emissions not exceed 100 ppmv on an hourly rolling average (corrected to 7% oxygen). As discussed above, low CO emissions, coupled with firing ECF in the primary fuel flame zone, are the primary controls for ensuring that the boiler is operating under good combustion conditions.

EPA has used continuous CO monitoring as an indicator of good combustion for various types of combustors, including boilers that burn hazardous waste and boilers that do not burn hazardous waste. See 70 FR at 59463–64 for a discussion of using CO to control organic HAP under the NESHAP for hazardous waste boilers,[38] and 68 FR at 1671 for a similar discussion in the context of the NESHAP for boilers that do not burn hazardous waste. We note that the NESHAP for boilers that do not burn hazardous waste (i.e., Industrial Boiler NESHAP) requires continuous CO monitoring only for new solid, liquid, or gas boilers with a capacity greater than 100 MM Btu/hr. The CO limit is 400 ppmv corrected to 3% oxygen for oil and gas boilers and 400 ppmv corrected to 7% oxygen for solid fuel boilers, and is based on a 30-day average. Boilers with a capacity in the range of 10 MM Btu/hr to 100 MM Btu/hr comply with the CO limit based on a 3-run average during periodic performance testing. See Table 1 to Subpart DDDDD, Part 63. EPA did not establish a CO limit for existing boilers that do not burn hazardous waste because: (1) CO monitoring was not floor control given that inadequate information was available to conclude that 6% of the sources were equipped with CO monitors or that 6% of the sources were subject to state standards for CO monitoring; and (2) CO monitoring did not appear to be cost-effective as a beyond-the-floor control technique. For new sources where MACT floor is based on the performance of the single best performing source within a category or subcategory, EPA established CO monitoring requirements based on the most stringent state standards for CO monitoring that applied to all large boilers (i.e., greater than 10 MM Btu/hr) in a subcategory (i.e., solid fuel, liquid, and gas boilers) and to all fuel types burned by boilers within the subcategory (e.g., for solid fuel boilers, coal, wood, and other biomass).[39]

Notwithstanding the 400 ppmv CO limit (based on a 30-day average or periodic performance testing[40]) applicable to new industrial boilers that do not burn hazardous waste, a 100 ppmv limit (based on an hourly rolling average) is appropriate for ECF burners because: (1) The limited CO data in the Industrial Boiler NESHAP data base indicate that oil-fired boilers, the boiler subcategory most analogous to a boiler burning ECF, are achieving CO levels below 100 ppmv;[41] (2) hazardous waste fuels that are proposed to be excluded as ECF are currently burned in boilers subject to a 100 ppmv (hourly rolling average) CO standard under RCRA § 266.104, also indicating that a CO limit of 100 ppmv is readily achievable; and (3) a tighter CO limit for ECF than the CO limit that applies to industrial boilers burning fossil fuels and nonhazardous waste fuels is appropriate given the greater potential for ECF emissions to pose a hazard to human health and the environment (i.e., it is reasonable and appropriate to tailor the management controls that apply to the most analogous product, fuel oil, to address the greater hazards posed by potentially high concentrations of hazardous organic compounds in ECF).[42]

We similarly do not believe that periodic rather than continuous CO monitoring would be appropriate for ECF boilers, even though periodic CO monitoring is allowed under the Industrial Boiler NESHAP to boilers in the size range of 10 MM Btu/hr to 100 MM Btu/hr. As discussed above, low CO emissions, combined with the requirement to fire ECF into the primary fuel flame zone, is the principal indicator of good combustion conditions. Periodic CO monitoring would ensure good combustion conditions only periodically—combustion conditions could deteriorate an hour, day, or week after the periodic performance test. Given the potential hazards that burning ECF under poor combustion conditions can pose compared to fossil fuels and nonhazardous waste fuels, and given the variability in combustion characteristics that ECF may have over time relative to the primary fuel, it is reasonable to condition the exclusion on continuous CO monitoring.[43] Nonetheless, we specifically request comment on whether periodic rather than continuous

[38] The NESHAP for hazardous waste boilers allow sources to continuously monitor total hydrocarbons and comply with a limit of 10 ppmv in lieu of continuously monitoring CO and complying with a limit of 100 ppmv. See §§ 63.1216(a)(5) and 63.1217(a)(5). We are not proposing a total hydrocarbon alternative for ECF boilers, however, because very few, if any, hazardous waste boilers elect that alternative given the complexity of maintaining a continuous hydrocarbon monitor. In addition, boilers that are designed to rapidly quench the combustion gas temperature and thus cannot achieve CO levels below 100 ppmv have no choice other than to monitor hydrocarbons if they burn hazardous waste fuels. But, these boilers may not be appropriate candidates for burning ECF even if they achieve hydrocarbon levels below 10 ppmv absent the regulatory oversight of a RCRA or Title V permit given that they are not designed to achieve optimum combustion efficiency. Nonetheless, we request comment on whether the rule, if finalized, should allow ECF boilers the option of continuously monitoring hydrocarbons and complying with a limit of 10 ppmv as an alternative to CO monitoring.

[39] See 68 FR at 1673 and the memorandum from Jim Eddinger, EPA, to Docket No. OAR–2002–0058 entitled, ''Revised MACT Floor Analysis for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants Based on Public Comments,'' dated February 2004, pp. 18–19.

[40] The 30-day averaging period for the Industrial Boiler NESHAP was adopted because boilers burning biomass under certain conditions (e.g., wet wood after a rain event) could not achieve the CO limit over a shorter averaging period. This situation is not relevant here. ECF boilers that burn fuel oil or natural gas as primary fuel can readily achieve a 100 ppmv CO limit over an hourly rolling average.

[41] See USEPA, USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Section 3.4. Also, we note that EPA adopted the 400 ppmv CO limit for boilers that do not burn hazardous waste to accommodate the higher CO levels that can result from burning solids, particularly wet biomass after rain events. That scenario would not be applicable to a boiler burning ECF. ECF boilers can readily achieve CO levels below 100 ppmv.

[42] The hazardous waste boiler emissions data we analyzed as a surrogate for ECF emissions data to determine if emission concentrations were comparable to fuel oil emissions were derived from hazardous waste boilers operating under a CO limit of 100 ppmv. If those boilers operated at higher CO levels and thus at lower combustion efficiency, emissions of toxic organic compounds may have been higher.

[43] The Industrial Boiler NESHAP requires CO monitoring, albeit periodic monitoring, for all new boilers in the size range of 10 MM Btu/hr to 100 MM Btu/hr. The proposed continuous CO monitoring conditions for ECF boilers, irrespective of size, would apply only to those boilers that elect to burn ECF.

CO monitoring should be allowed for ECF boilers in the size range of 10 MM Btu/hr to 100 MM Btu/hr, consistent with the Industrial Boiler NESHAP CO monitoring provisions for new boilers. Commenters must explain and provide supporting information why periodic monitoring is sufficient, including how the owner or operator would ensure that the boiler is operating under ''good combustion conditions'' during those times that the boiler is not being monitored for CO in order for the Agency to be able to consider it for final action.

Finally, we propose to specify that the CO monitor must be linked to an automatic ECF feed cutoff system to ensure that ECF is fired only when the boiler is operating under good combustion conditions—when CO levels are below 100 ppmv on an hourly rolling average. Linking the CO monitor to an automatic ECF feed cutoff system is appropriate given that emissions may be neither comparable to fuel oil nor protective if the boiler is not operating under good combustion conditions. An automatic feed cutoff system does not appear to be cost-prohibitive and would help assure effective combustion. We propose to adopt the provisions for automatic feed cutoff systems that apply to boilers that burn hazardous waste—§ 63.1206(c)(3)—and for the same reasons. See USEPA, ''Technical Support Document for HWC MACT Standards, Volume IV: Compliance with the HWC MACT Standards,'' July 1999, Chapter 11.

3. The Boiler Must Fire at Least 50% Primary Fuel

A condition of the proposed exclusion would require an ECF boiler to fire at least 50% primary fuel on a heat input or volume basis, whichever results in a higher volume of primary fuel, and the primary fuel must be fossil fuel or tall oil with a heating value not less than 8,000 Btu/lb. These conditions would ensure that a hot, stable flame is provided to help ensure optimum combustion conditions. Although a primary fuel firing rate of 50% is at the lower end of the range of reasonable values—50% to 75% primary fuel—that could have been selected, we believe it is a reasonable condition because it would ensure that the boiler is burning primarily fossil fuel (or equivalent) and so ensures a hot, stable flame.[44] We also note that this condition would be consistent with the primary fuel requirement for hazardous waste boilers under § 266.110 that elect to waive the DRE performance standard under operating conditions that ensure optimum combustion efficiency.

The primary fuel would be required to have a minimum heating value of 8,000 Btu/lb to reflect the low end of the range of heating values for fossil fuels normally fired in industrial boilers. Most coal-fired industrial boilers burn either subbituminous coal (with heating values ranging from 8,300–11,500 Btu/lb) or bituminous coal (with heating values ranging from 10,500 to 14,000 Btu/lb). Lignite, a low-rank coal that typically has a heating value below 8,000 Btu/lb, is not commonly burned in industrial boilers.

Although we believe that the primary fuel would generally be fossil fuel—oil, natural gas, or coal (i.e., pulverized coal burned in suspension)—it is reasonable to allow other high-quality fuels as the primary fuel. Consequently, tall oil would also be allowed as a primary fuel. Tall oil is fuel derived from vegetable and rosin fatty acids and has a heating value comparable to fuel oil.

We specifically request comment on whether a condition to require a minimum of 50% primary (generally fossil) fuel is appropriate to maintain a hot, stable flame to ensure good combustion of ECF. Any comments recommending an alternative minimum limit for the primary fuel firing rate must include supporting information in order for the Agency to be able to consider it for final action.

4. The Boiler Load Must Be 40% or Greater

A condition of the proposed exclusion would require the ECF boiler to operate at 40% load (i.e., the heat input at any time when ECF is fired must be at least 40% of the maximum rated boiler heat input) or greater to ensure a hot, stable flame. At low loads, higher excess air rates are used to improve fuel/air mixing. The increased excess air rates, however, can also cool the flame zone and even make the flame unstable (e.g., as a candle flame flickers in a breeze), thereby increasing the likelihood of flameout. These conditions can result in reduced combustion efficiency. Although a lower boiler load could have been selected within the reasonable range of 25% to 40% of maximum load, we believe it is appropriate to adopt a value at the high end of the range to be conservative given that ECF can contain concentrations of certain hydrocarbons and oxygenates higher than the specifications listed in Table 1 to § 261.38. We also note that a minimum load requirement of 40% would be consistent with the requirement for hazardous waste boilers under § 266.110 that elect to waive the DRE performance standard under operating conditions that ensure optimum combustion efficiency.

We specifically request comment on whether a condition on minimum boiler load of 40 percent is appropriate to maintain a hot, stable flame and thus ensure good combustion conditions. Any comments recommending an alternative minimum boiler load must include supporting information in order for the Agency to be able to consider it for final action.

5. The ECF Must Have an As-Fired Heating Value of 8,000 Btu/lb or Greater

A condition of the proposed exclusion would require the ECF to have an as-fired heating value of 8,000 Btu/lb or greater. This is a reasonable minimum heating value that could have been selected within the range of 5,000 Btu/lb to 10,000 Btu/lb because: (1) It is the minimum heating value of fossil fuels normally fired in industrial boilers (i.e., subbituminous coal); and (2) it would help ensure that a hot, stable primary fuel flame is maintained. We also note that more than 90% of the candidate waste fuel streams identified by generators had heating values greater than 8,000 Btu/lb.[45]

Although ECF, like comparable fuel, would need to have a heating value of 5,000 Btu/lb as-generated (or after bona fide treatment as a hazardous waste), it must have a minimum heating value of 8,000 Btu/lb as-fired. Accordingly, ECF may be blended with fuels (including comparable fuel) other than hazardous waste to achieve an as-fired heating value of at least 8,000 Btu/lb. However, any fossil fuel used to blend ECF to achieve the minimum 8,000 Btu/lb heating value requirement could not be counted to achieve the proposed condition that the boiler must have a minimum firing rate of 50% primary fuel.

We specifically request comment on whether a condition to require that ECF have an as-fired heating value of 8,000 Btu/lb or greater is appropriate to help ensure that the hazardous compounds that may be present in the ECF at high concentrations are destroyed to levels comparable to oil-fired boiler emissions. Any such comments on alternative ECF heating values must include supporting

[44] ECF could be cofired with other fuels, including waste fuels, that may not have combustion characteristics comparable to fuel oil, natural gas, or ECF. Thus, absent a condition that at least 50% of the fuel must have a heating value of 8,000 Btu/lb or greater, a hot, stable flame into which ECF would be fired could not be assured.

[45] Letter from American Chemistry Council (Carter Lee Kelly, Leader, Waste Issues Team, and Robert A. Elam, Director, Regulatory Affairs, Waste Issues Team) to Robert Springer and Matt Hale, USEPA, dated November 24, 2003.

information in order for the Agency to be able to consider it for final action.

6. ECF Must Be Fired Into the Primary Fuel Flame Zone

As a condition of the proposed exclusion, ECF must be fired into the primary fuel flame zone to avoid, potentially, total ignition failure—a combustion failure mode characterized by poor combustion, high emissions of unburned organic compounds, but potentially low CO emissions. Under this combustion failure mode, organic compounds in ECF would not be exposed to the hot flame zone and may be simply volatilized absent combustion. Thus, under this failure mode, low CO emissions may not be indicative of good combustion conditions.

As a practical matter, firing waste fuels (or any fuels) directly into the flame zone of the boiler is standard operating practice. Directing the fuel burner in a direction that avoided the flame zone would normally occur only inadvertently. Nonetheless, we believe it is prudent to propose this condition to highlight its importance in achieving good combustion conditions.

We specifically request comment on whether a condition to require that ECF be fired into the primary fuel flame zone is appropriate to help ensure that the hazardous compounds that may be present in the ECF at high concentrations are destroyed to levels comparable to oil-fired boiler emissions. Any such comments must include supporting information in order for the Agency to be able to consider it for final action.[46]

7. The ECF Firing System Must Provide Proper Atomization

As a condition of the proposed exclusion, the ECF firing system must provide proper atomization to ensure that the ECF droplets are not too large for optimum volatilization. An organic compound must be vaporized and mixed with air before combustion can occur. The quicker ECF and its constituents are vaporized and the more completely the volatilized compounds are mixed with air, the more rapid and efficient the combustion and destruction of organic constituents. Firing systems that atomize liquid fuels to form small droplets increase the rate of vaporization by providing a larger surface area per volume of fuel to absorb heat from the flame.

We are proposing to allow the use of virtually all atomization systems commonly used to fire liquid fuels.[47] We are, however, proposing to restrict the maximum size of solids that may be present in liquid fuels that meet the viscosity specification of 50 cSt—the as-fired ECF must pass through a 200 mesh screen. This would ensure that the appropriate droplet size is achieved (to ensure volatilization and destruction of organic compounds) and minimize plugging of the firing nozzle. The acceptable atomization systems are air, steam, mechanical, or rotary cup atomization systems.[48]

a. Air or steam atomization. Air or steam atomization systems use air or steam to break up the fuel into small droplets. Under ordinary operations, high pressure steam or air provided at 30 to 150 psig produces much smaller droplets than other atomization systems. Because of the cost of providing high pressure air and where steam is not readily available, low pressure (1–5 psig) burners are sometimes used.

b. Mechanical atomization. Mechanical atomizers break up the fuel into small droplets by forcing it through a small, fixed orifice. A strong cyclonic or whirling velocity is imparted to the fuel before it is released through the orifice. Combustion air is provided around the periphery of the conical spray of fuel. The combination of combustion air introduced tangentially into the burner and the action of the swirling fuel produces effective atomization.

The size of the droplets produced by mechanical atomization is a function principally of the fuel viscosity and the fuel pressure at the atomizing nozzle. The pressure required to produce a droplet size conducive to optimum combustion efficiency depends on the volatility of the fuel. Highly volatile materials can volatilize rapidly, even from larger droplets, and, thus, can be fired at pressures of 75 to 150 psig. Less volatile fuels may require an atomization pressure as high as 1,000 psig to form droplets small enough to rapidly volatilize.

Given that fuel pressure is an important factor in determining droplet size, we considered whether it would be appropriate to propose to limit the minimum fuel pressure as a condition of the exclusion.[49] Optimum fuel pressure to produce an optimum droplet size, however, is a function of fuel volatility and fuel/air mixing. Thus, it is not practicable to propose specific limits on minimum fuel pressure. Rather, we are proposing that the boiler owner or operator be required to maintain fuel pressure within the atomization system design range considering the viscosity and volatility of the waste fuel, the fuel/air mixing system, and other appropriate parameters. This approach would allow the atomization system manufacturer or designer (e.g., if designed and fabricated on-site) the necessary flexibility to determine an acceptable fuel pressure considering the specifics of the situation. If fuel pressure is not maintained at appropriate levels to ensure small droplet size and optimum combustion efficiency or, if for any other reason the boiler does not achieve maximum combustion efficiency, the boiler may not be able to achieve CO levels below 100 ppmv.

c. Rotary cup atomization. The rotary cup atomizer uses centrifugal force to break up the fuel into droplets. It consists of an open cup mounted on a hollow shaft. The fuel is pumped at low pressure through the hollow shaft to the cup which is rotating at several thousand revolutions per minute. A thin film of the fuel is centrifugally torn from the tip of the cup. As centrifugal force drives the fuel off the cup, combustion air is admitted in a rotation counter to the direction of the cup. This counter motion of the air breaks up the conical sheets of fuel into droplets and provides turbulence for mixing the droplets with air.

Rotary cup atomizers are typically used on smaller boilers (e.g., less than 30 MM Btu/hr heat input) because the maximum capacity of the largest unit is about 1,400 pounds of fuel per hour. In addition, rotary cup atomizers are not often installed on new boilers because it is difficult to achieve optimum fuel/air mixing over a wide range of fuel flow rates. Rotary cup atomizers are used because they are relatively inexpensive, they can handle fuels with relative high viscosities ranging up to 40 to 72 cSt,[50]

[46] Please note that we also request comment on conditions (other than proper atomization) that may be appropriate for the ECF firing system in Part Two, Section VII, in response to comments from a peer reviewer.

[47] A simple lance (essentially an open pipe without any means of atomization), however, could not be used to fire ECF.

[48] Engineering Science, ''Background Information Document for the Development of Regulations to Control the Burning of Hazardous Waste in Boilers and Industrial Furnaces, Volume I: Industrial Boilers,'' January 1987, pp. 4–89 to 4–96.

[49] Mechanical atomizers are susceptible to erosion of the orifices in the firing nozzle. Erosion can increase the size of the orifice resulting in decreased fuel pressure and increased droplet size. Limits on minimum fuel pressure, thus, would ensure that droplet size remains optimized during the course of operations by either increasing fuel pressure as the nozzle erodes and, more likely, replacing an eroded firing nozzle.

[50] ECF could not have a viscosity exceeding 50 cSt given that it would be subject to the same specifications that apply to existing comparable fuel, except that the specifications for certain hydrocarbons and oxygenates would not apply.

and they are relatively insensitive to solid impurities in the fuel and can handle waste fuels with solids that can pass through a 34 to 100 mesh screen.[51]

Droplet size is related primarily to the viscosity and flow rate of the fuel and rotational speed of the cup. Resulting combustion efficiency is related to volatility of the fuel and fuel/air mixing. Although it is impracticable to control these variables in a regulatory context, manufacturers and boiler owners and operators have ample experience with rotary cup atomizers to design units that achieve efficient combustion. Thus, we are proposing that owners and operators demonstrate that the as-fired fuel has a volatility within the design parameters of the firing system and limit fuel flow rates consistent with the design parameters of the firing system. As discussed above, relative to mechanical atomization systems, if, in fact, the device does not produce droplet sizes and fuel/air ratios conducive to maintaining high combustion efficiency, the boiler may not be able to achieve CO levels below 100 ppmv.

We specifically request comment on whether these conditions for atomization of ECF are appropriate to help ensure that the hazardous compounds that may be present in the ECF at high concentrations are destroyed to levels comparable to oil-fired boiler emissions. Any such comments must include supporting information in order for the Agency to be able to consider it for final action.[52]

8. Dioxin/Furan Controls for Boilers Equipped With an ESP or FF

If a boiler is equipped with an electrostatic precipitator (ESP) or fabric filter (FF) and does not fire coal as the primary fuel,[53] we are proposing that the combustion gas temperature at the inlet to the ESP or FF be continuously monitored, be linked to the automatic ECF feed cutoff system, and not exceed 400 °F on an hourly rolling average. These proposed conditions would ensure that the post-combustion, heterogeneous surface-catalyzed formation of dioxin/furan in an ESP or FF is minimized so that emissions from burning ECF remain at least comparable to those from burning fossil fuels and remain at levels that are protective of human health and the environment.

We are basing these proposed conditions on information and data gathered from the recently promulgated NESHAP standards for hazardous waste combustors. See 70 FR 59402. Specifically, we have determined that the surface-catalyzed formation of dioxins/furans across an ESP or FF can be significant when gas temperatures exceed 400 °F.[54] When gas temperatures are below 400 °F (and the combustor is operating under good combustion conditions as evidenced by CO below 100 ppmv), however, dioxin/furan emissions are generally below 0.40 ng TEQ/dscm, the emission standard for most hazardous waste combustors.[55]

Boilers burning coal as the primary fuel would not be required to monitor combustion gas temperature at the inlet to an ESP or FF as a condition of the exclusion, however. We determined during development of the NESHAP for coal-fired boilers that burn hazardous waste that sulfur contributed by the coal is a dominant control mechanism because the sulfur inhibits formation of dioxins/furans.[56] Please note, however, that a peer reviewer questioned whether the low sulfur coal that some ECF boilers may burn would also inhibit formation of dioxins/furans. We believe that low sulfur coals would also inhibit formation of dioxins/furans (and, thus, a condition to limit the gas temperature at the inlet to the ESP or FF would not be needed), but request comment and supporting information on opposing views. See discussion in Section VII below.

We are further proposing an hourly averaging period for the temperature limit, rather than a longer averaging period, because there is a nonlinear relationship between gas temperature at the ESP or FF and dioxin/furan emissions. Consequently, a longer averaging period would allow higher temperatures to be offset by lower temperatures, even though dioxin/furan emissions at the higher temperatures could be exponentially higher than emissions at the lower temperatures, and, thus, average dioxin/furan emissions would be substantially higher than if temperatures had been maintained at the average temperature.[57]

We also believe that there are factors other than high gas temperature at the inlet to an ESP or FF that may contribute to the post-combustion formation of dioxin/furan in boilers, but these situations would not occur for boilers burning ECF under the proposed conditions. For example, we have dioxin/furan emissions data for nine three-run test conditions for eight boilers burning liquid hazardous waste fuel and equipped with wet scrubbers, and two of the boilers have emissions exceeding 0.40 ng TEQ/dscm.[58] Although the wet scrubbers on these boilers preclude surface-catalyzed dioxin/furan formation across the emission control device, the boilers nonetheless have high dioxin/furan emissions—1.4 ng TEQ/dscm and 0.44 ng TEQ/dscm. We note, however, that both of these boilers are firetube boilers and one burns waste fuel containing 60% by weight chlorine. Firetube boilers would not be allowed to burn ECF under the conditions proposed today for reasons discussed above and, in addition, the chlorine level in the waste fuel for one of the boilers is orders of magnitude higher than the specification for chlorine in Table 1 to § 261.38.[59] It is speculated that the higher tube surface to combustion gas

[51] We propose that ECF must be able to pass through a 200 mesh (74 micron) sieve to ensure that particles are small enough to ensure volatilization and destruction of organic compounds.

[52] Please note that we also request comment on conditions that may be appropriate for the ECF firing system in Part Two, Section VII, in response to comments from a peer reviewer.

[53] Note that oil-fired boilers are generally not equipped with a particulate matter control device and that the fraction that are so-equipped are typically equipped with wet scrubbers rather than an ESP or FF. Thus, we would expect that this condition would only apply to a small percentage of boilers that choose to burn ECF. See the memorandum from Jim Eddinger, EPA, to EPA Docket No. OAR–2002–0058, entitled, ''Revised MACT Floor Analysis for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants Based on Public Comments,'' dated February 2004, Section 6.4.2.

[54] USEPA, ''Technical Support Document for HWC MACT Standards, Volume III: Selection of MACT Standards and Technologies,'' July 1999, Section 3.0; USEPA, ''Technical Support Document for HWC MACT Standards, Volume IV: Compliance with the HWC MACT Standards,'' September 2005, Section 3.2, and USEPA, ''Technical Support Document for HWC MACT Standards, Volume III: Selection of MACT Standards,'' September 2005, Section 13.3.1.1.

[55] See §§ 63.1217, 63.1219, and 63.1220. See also USEPA, USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Section 5.

[56] USEPA, ''Technical Support Document for HWC MACT Standards, Volume III: Selection of MACT Standards,'' September 2005, Section 14.1.1.

[57] USEPA, ''Technical Support Document for HWC MACT Standards, Volume IV: Compliance with the HWC MACT Standards,'' September 2005, Section 2.2.3.

[58] USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion, May 2007, Section 5.

[59] Although chlorine content of the feed is generally not considered a primary factor in formation of dioxin/furan (especially when other factors may predominate, such as high gas temperature at the inlet to the ESP or FF) because extremely small amounts of chlorine are sufficient to provide the chlorine for dioxin/furan formation, we are nonetheless concerned enough about chlorine content in the feed to require that hazardous waste combustors operate within the range of normal chlorine federate levels during performance testing to document compliance with the dioxin/furan emission standard. Thus, chlorine content of the feed may be a significant factor that could affect dioxin/furan formation. See USEPA, ''Technical Support Document for HWC MACT Standards, Volume IV: Compliance with the HWC MACT Standards,'' September 2005, Section 3.3.

volume ratio for a firetube boiler compared to a watertube boiler may increase the possibility of combustion gas flow over particulate matter that has adhered to the tubes within the 400–750 °F temperature window, which is conducive to surface-catalyzed formation of dioxins/furans.

We also have dioxin/furan emissions data for 11 three-run test conditions for six different boilers that burn hazardous waste and that are equipped with an ESP or FF. Gas temperatures at the ESP or FF were generally below 400 °F.[60] Only two test conditions (from two boilers) were above 0.4 ng TEQ/dscm. One boiler (which would be ineligible to burn ECF because it is a firetube boiler) had emissions of 0.66 ngTEQ/dscm during one test condition. This unit burns mixed waste with levels of chlorine and metals above the specifications in Table 1 to § 261.38. The second boiler (a watertube boiler), however, had average emissions of 2.4 ng TEQ/dscm. Although the FF for this boiler was operated slightly above 400 °F, we note that this boiler burned waste fuel containing nickel at levels orders of magnitude higher than the specification identified in Table 1 to § 261.38. Nickel, as well as copper and iron, have been suggested to be responsible for the catalytic reactions that lead to post-combustion formation of dioxins/furans.[61]

Therefore, based on the data described above, we believe that the scenarios that resulted in high dioxin/furan emissions when burning hazardous waste fuels would not occur for ECF boilers and that a proposed condition that would limit the gas temperatures at the inlet to a dry particulate matter control device to 400 °F should control dioxin/furan emissions generally to below 0.40 ng TEQ/dscm.[62] Moreover, we note that we have dioxin/furan emissions data for 38 three-run test conditions representing 32 different boilers burning hazardous waste fuel and not equipped with an emissions control device where the test condition average emissions were quite low—below 0.10 ng TEQ/dscm. In addition, we have dioxin/furan emissions data for 15 runs for oil-fired industrial boilers (i.e., not burning hazardous waste), and the average emissions were 0.013 ng TEQ/dscm and the maximum emissions were 0.042 ng TEQ/dscm.[63] This is further confirmation indicating that dioxin/furan emissions from boilers burning ECF under the proposed conditions should be quite low.

III. What Restrictions Would Apply to Particular Hydrocarbons and Oxygenates?

The toxicity, persistence and bioaccumulation potential for the 37 hydrocarbons and oxygenates for which specifications have been established in Table 1 to § 261.38 varies over a wide range. In addition, we acknowledge that when ECF with potentially higher concentrations of certain hydrocarbons and oxygenates than fuel oil is burned, even under good combustion conditions, emissions of hazardous organics maybe somewhat higher than those from burning fossil fuel because combustion is generally a percent-reduction process. Therefore, to ensure that the emissions from burning ECF as a fuel under the conditions proposed today remain protective, we propose to retain the specifications for compounds that can pose a high hazard—naphthalene and PAHs—and to restrict the firing rate of ECF containing concentrations of compounds that can pose a lower, but substantial hazard—benzene and acrolein. See *Safe Food and Fertilizers*, 353 F. 3d at 1271 (exclusion from the definition of solid waste can be justified by low risk posed by the recycling practice).

We explain below the rationale for the approach we use to categorize the 37 hydrocarbons and oxygenates for which specifications are established in Table 1 to § 261.38, according to their relative hazard to human health and the environment.

A. What Is the Rationale for the Relative Hazard Characterization Scheme?

We categorized the 37 hydrocarbons and oxygenates for which specifications have been established in Table 1 to § 261.38 as to their relative hazard.[64] We assigned the highest hazard constituents to Category A, the constituents that pose intermediate hazard to Category B, and the other constituents to Category C. As mentioned above, we are proposing to retain the specifications for the Category A constituents, restrict the feedrate of the Category B constituents, and not apply the specifications in Table 1 to the Category C constituents. We discuss below the procedure for categorizing the constituents.

First, we used the Waste Minimization Prioritization Tool (WMPT)[65] to rank the 37 hydrocarbons and oxygenates. The WMPT is a peer-reviewed methodology which provides a screening-level assessment of potential chronic (i.e., long-term) risks to human health and the environment, considering the chemicals' toxicity, persistence and bioaccumulation potential.[66]

The WMPT scoring method produces chemical-specific scores for a screening-level risk-based ranking of chemicals.[67] The scoring method was designed to generate an overall chemical score that reflects the potential of a chemical to pose risk to either human health or ecological systems. A measure of human health concern is derived, consistent with the risk assessment paradigm, by jointly assessing the chemical's human toxicity and potential for exposure. Similarly, a measure of the ecological concern is derived by jointly assessing the chemical's ecological toxicity and potential for exposure. The WMPT uses a small number of relatively simple measures to represent the toxicity (e.g., oral Cancer Slope Factor) and exposure potential (e.g., Bioaccumulation Factor) of each chemical, consistent with a screening-level approach and with other systems of this type.

We then applied the procedures the Agency used to develop the Priority

[60] USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion, May 2007, Section 5.3.3.

[61] USEPA, ''Technical Support Document for HWC MACT Standards, Volume IV: Compliance with the HWC MACT Standards,'' September 2005, p. 3–17.

[62] We discussed previously in the text in Part Two, Section I.B, that an abbreviated comparative risk assessment for dioxin/furan emissions from hazardous waste boilers that meet the design conditions (i.e., watertube steam boiler that is not stoker-fired) for an ECF boiler indicates that dioxin/furan emissions from such a boiler are not likely to pose a hazard to human health or the environment.

[63] USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion, May 2007, Section 3.4.

[64] Please note that we have conducted an independent peer review of our ranking procedures. See discussion in Part Two, Section VII, of the preamble.

[65] USEPA, ''Waste Minimization Prioritization Tool Background Document for the Tier III PBT Chemical List,'' 2000.

[66] After several rounds of internal expert and public comments, EPA used the current version of the WMPT as the initial step in the process of identifying the initial pool of priority chemicals that are national priorities for voluntary pollution prevention activities across the agency. EPA determined the initial pool of priority chemical candidates based on their rank. The rankings are based on the higher of available scores for human health concern (i.e., the sum of the scores for persistence, bioaccumulation, and human toxicity) and ecological concern (i.e., the sum of the scores for persistence, bioaccumulation, and ecological toxicity). The priority chemical candidate pool was limited to those chemicals with WMPT scores of 8 or 9 (on a scale of 3 to 9). For a more detailed description of the WMPT development process, see USEPA, ''Waste Minimization Prioritization Tool Background Document for the Tier III PBT Chemical List,'' 2000. The specific use of the current version of the WMPT rankings in developing the RCRA Prioirity Chemicals List is documented in the Tier III Chemical List Docket.

[67] USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Section 2.4.

Chemicals List[68] from the WMPT scoring. Thus, we assigned constituents that scored an eight or nine to the high hazard category—Category A.

Next, we considered whether any of the remaining constituents, those that did not receive a WMPT score of 8 or 9, present additional concerns for materials managed as comparable fuels. We did this by further analyzing the data that WMPT used to generate Human Toxicity scores for the remaining constituents. We first identified constituents that had WMPT human toxicity scores based on inhalation as the driving exposure pathway. This is an appropriate screening criterion given that the inhalation pathway is particularly important for evaluating the hazard posed by air emissions. For such constituents, we then determined whether they posed a relatively high human toxicity hazard or were a known human carcinogen. If so, we assigned the constituent to hazard Category B.

We assigned all other constituents to hazard Category C.[69]

B. What Are the Results of the Relative Hazard Ranking?

We assigned 11 constituents to Category A—the high hazard constituents. These are constituents that had WMPT scores of eight or nine, consistent with the Agency's procedures for identifying priority chemicals. Because the WMPT methodology assigns all PAHs the highest score for any PAH, we assigned a score of nine to all PAHs. Ten of the 11 Category A constituents are PAHs. The only Category A constituent that is not a PAH, but that scored an eight or nine, was naphthalene.

In evaluating constituents to assign to hazard Category B, we identified three constituents that have WMPT human toxicity scores based on inhalation as the driving exposure pathway: Benzene, acrolein, and phenol.

Benzene is a known human carcinogen via the inhalation exposure pathway. There are some chemicals with sufficiently robust toxicological databases that the Agency not only generates a carcinogenic slope factor, but also designates them ''known human carcinogens.'' Consequently, we believe it is reasonable to assign benzene to Category B to restrict the feedrate (and thus emissions) of this compound.

Acrolein has a WMPT human toxicity score of three because it has very high inhalation toxicity. Acrolein did not have a higher aggregate WMPT score because it had a low bioaccumulation score. Nonetheless, exposure via inhalation is of particular importance in the context of assessing the hazard posed by emissions from burning ECF. Consequently, we believe it is reasonable to assign acrolein to Category B.

We did not assign phenol to Category B because it has significantly lower toxicity than benzene and acrolein. Phenol has a WMPT human toxicity score of two, rather than the highest score of three. Further, phenol is not known to be a carcinogen. EPA has classified phenol as a Group D carcinogen—not classifiable as to human carcinogenicity, based on a lack of data concerning carcinogenic effects in humans and animals. Consequently, we do not believe that phenol should be assigned to hazard Category B even though its WMPT human toxicity score is based on the inhalation pathway. The remaining constituents were assigned to Category C.

C. What Firing Rate Restrictions Would Apply to Benzene and Acrolein?

As discussed above, we believe that benzene and acrolein pose a lower hazard than PAHs and naphthalene, but a greater hazard than the other hydrocarbons and oxygenates for which the specifications would not apply for ECF. Accordingly, we propose to restrict the firing rate of ECF that has benzene or acrolein concentrations exceeding 2% by weight, as-fired, to 25% of the heat input to the boiler (on a heat input or volume input basis, which ever results in the lower volume of ECF).

This ECF firing rate restriction would reduce the feedrate of benzene and acrolein and thus ensure that emissions of these compounds remain at levels comparable to emissions from burning fuel oil in industrial boilers and protective of human health and the environment. Absent this firing rate restriction, ECF with high concentrations of benzene or acrolein could be fired at a 50% firing rate—the remaining 50% of the fuel must be primary fossil fuel or equivalent. Thus, the 25% firing rate restriction would reduce the feedrate of benzene and acrolein by half.

We selected a 25% firing rate restriction because it is in the middle of the range of values that could have been reasonably considered—10% to 40%—given that the maximum firing rate for any ECF is 50%. We selected a 2% or greater benzene concentration as the criterion for applying the firing rate restriction because selecting a lower concentration cutpoint would restrict the composite benzene concentration in total fuels to levels lower than would be allowed if comparable fuel were burned as 100% of the boiler fuel. Specifically, we assumed that comparable fuel would generally have a heating value of at least 10,000 Btu/lb if it were to comprise 100% of the boiler's fuel. The comparable fuel specification would allow a benzene concentration of 4,100 mg/kg (or 0.41%) for a 10,000 Btu/lb fuel. We further assumed the upper range of heating values for the comparable fuel would be 18,000 Btu/lb. At that heating value, the comparable fuel could contain 7,400 mg/kg (or 0.74%) benzene.

We then determined the benzene concentration in ECF fired at a 25% firing rate as a supplement to fuel oil that would result in a composite fuel benzene concentration equivalent to the levels allowed if existing comparable fuel were 100% of the boiler fuel. Virtually all of the benzene would be contributed by the ECF because fuel oil contains negligible benzene.[70] At a 25% firing rate, the benzene concentration in a 10,000 Btu/lb ECF would need to exceed 1.6% for the benzene concentration in the composite fuels (i.e., ECF and fuel oil) to exceed 4,100 mg/kg, the benzene concentration in the fuel if 10,000 Btu/lb comparable fuel were fired as the sole fuel burned. Similarly, at a 25% firing rate, the benzene concentration in an 18,000 Btu/lb ECF would need to exceed 3% for the benzene concentration in the composite fuels to exceed 7,400 mg/kg, the benzene concentration in the fuel if 18,000 Btu/lb comparable fuel were fired as the sole fuel burned.

Consequently, the reasonable range of ECF benzene concentrations for selecting the cutpoint to apply the 25% firing rate restriction is 1.6% to 3%.[71] We are proposing a cutpoint of 2% because it generally correlates to the average heating value of waste fuels—11,000 Btu/lb.[72]

[68] See: *http://www.epa.gov/epaoswer/hazwaste/minimize/chemlist.htm.*

[69] We also qualitatively assessed the five constituents with insufficient data to generate complete, aggregate WMPT scores. Even assuming worst-case values for their human toxicity score, none of these constituents would have qualified for Category A or B. Thus, we assigned them to Category C.

[70] The comp fuel benzene spec in 261.38 (4,100 mg/kg at 10,000 Btu/lb) is based on levels of benzene in gasoline. Benzene in crude oil is concentrated in refined fractions, such as gasoline.

[71] Expanding the fuel heating value range from 8,000 Btu/lb (the lowest heating value allowed for ECF) to 20,000 Btu/lb (the highest heating value known for waste fuels that may qualify as ECF) would expand the benzene concentration cutpoint range to 1.3% to 3.3%.

[72] If we assumed comparable fuel has the average heating value in our data base—11,200 Btu/lb—the benzene concentration cutpoint would be 1.8%.

We then considered what cutpoint we should propose for acrolein. We are proposing a 2% concentration cutpoint for acrolein as well because: (1) Acrolein poses hazards similar to benzene and there is no basis for being more or less stringent on the allowable composite fuel concentrations; and (2) a 2% cutpoint would not control acrolein in ECF more stringently than it is controlled in comparable fuel (i.e., ECF fired at a 25% firing rate as a supplement to fuel oil and with an acrolein concentration of 2% would not result in a composite fuel acrolein concentration lower than that allowed if the boiler burned 100% existing comparable fuel at the maximum allowable acrolein concentration).

We specifically request comment on whether ECF firing rate restrictions are warranted for benzene and acrolein, and if so, whether the proposed restrictions are appropriate. Any such comment must include an appropriate rationale and supporting information in order for the Agency to be able to consider it for final action.

IV. What Conditions Would Apply to Storage of ECF?

A. What Are the Proposed Storage Conditions?

The proposed exclusion for ECF would also be conditioned on meeting the storage controls applicable to the closest analogous raw material/product—fuel oil—plus a few additional controls considered appropriate to minimize the potential for releases to the environment. The additional controls would include ''engineered'' secondary containment and fugitive air emission controls.

Although we are proposing generally to apply storage controls applicable to the closest analogous raw material/product—fuel oil, the exclusion would be conditioned on more substantial ''engineered'' secondary containment than several of the permissible secondary containment methods for oil under the Spill Prevention, Control, and Countermeasure (SPCC) provisions. Examples of SPCC secondary containment provisions applicable to oil include the use of dikes, berms, retaining walls, spill diversion ponds and sorbent materials. We are proposing to apply a more substantial ''engineered'' secondary containment condition, such as double-walled tanks because we believe it important that such secondary containment address potential releases to groundwater. Today's proposed controls on air releases are based on those applicable to another comparable product, organic liquids at the chemical plants which often generate ECF.

These controls are appropriate considering that ECF can contain higher concentrations of certain hazardous, volatile hydrocarbons and oxygenates than fuel oil, and so though product-like, is not precisely analogous. Consequently, ECF has a higher potential for releases to the environment and a higher potential for those releases to cause environmental harm. Therefore, we are proposing storage and recordkeeping controls to ensure that ECF is not managed so as to become ''part of the waste disposal problem''. *American Mining Congress* v. *EPA*, 907 F. 2d 1179, 1186 (D.C. Cir. 1990).

We are also proposing that ECF be stored only in tanks (including USTs), tank cars, and tank trucks. ECF could not be stored in other containers (e.g., portable devices, such as 55 gallon drums) because: (1) We believe that ECF would be generated in quantities that would make storage in portable devices other than tank cars and tank trucks impractical; and (2) providing conditions to ensure adequate monitoring, inspections and air emission controls for storage in other containers would unnecessarily complicate the rule. Nonetheless, we request comment on whether ECF would likely be stored in vessels other than tanks, tank cars and tank trucks (e.g., drums positioned to collect process drippage that is eventually consolidated with ECF in acceptable tank, tank car, or tank truck). If so, and if a final rule were to allow storage in containers other than tank cars and tank trucks, we would subject those units to management conditions similar to those that apply to hazardous waste containers under subpart I, Part 265, control releases.

1. Tank Systems, Tank Cars and Tank Trucks

a. SPCC Discharge Prevention Requirements.[73] For ECF tank systems, tank cars, and tank trucks, we are proposing to condition the exclusion on meeting certain of the discharge prevention provisions which apply to fuel oil, or are adapted therefrom. These are from the Spill Prevention, Control, and Countermeasure (SPCC) provisions under 40 CFR Part 112 that apply to petroleum oils managed at onshore facilities. ECF generators and burners would comply with these conditions, as adopted under § 261.38(c)(1)(iii), as though ECF met the definition of oil under § 112.2.[74] These adopted SPCC provisions would apply to all owners and operators of ECF tanks with a capacity greater than 55 gallons.[75]

The SPCC requirements under Part 112 include both discharge prevention requirements and requirements to ensure effective responses to discharges. The discharge prevention requirements for onshore petroleum oil tanks are implemented under a SPCC Plan and associated requirements under §§ 112.1 through 112.8, and the discharge response requirements are implemented under a Facility Response Plan (FRP) and associated requirements under §§ 112.20 and 112.21. We propose to adopt specific provisions of the discharge prevention requirements—the SPCC Plan—under §§ 112.3, 112.5, 112.7, and 112.8 only. We are not proposing to adopt the FRP and associated requirements, as discussed below in Section IV.A.1.c. In lieu of the FRP requirements, we are proposing to adopt more appropriate provisions that apply to hazardous waste tank systems and that achieve the same objective as the FRP requirements—specifying proactive measures to respond to a release of ECF.

We propose to adopt the following SPCC Plan requirements under § 261.38(c)(1)(iii) to prevent ECF releases from tank systems:

- Section 112.2, Definitions.[76]
- Sections 112.3(d) and 112.3(e), Requirements to Prepare and Implement an SPCC Plan. Paragraph (d) requires that a licensed Professional Engineer must review and certify the Plan, and paragraph (e) requires that a copy of the Plan must be maintained at the facility and be available to the Regional

[73] The SPCC conditions we propose to adopt would apply to ECF tanks systems that are not hazardous substance underground storage tanks subject to § 280.42(b), as well as tank cars and tank trucks.

[74] This proposed rule would neither amend nor otherwise affect the SPCC provisions under 40 CFR Part 112. Substantive controls from the SPCC rules would merely be applied to tanks storing ECF as a condition of those fuels being excluded from RCRA subtitle C controls.

[75] We note that the SPCC requirements under Part 112 do not apply to facilities that have both an aggregate capacity for completely buried storage of 42,000 gallons or less of oil and an aggregate capacity for above ground storage of 1,320 gallons or less of oil. See § 112.1(d)(2). In addition, the SPCC requirements do not apply to containers with a storage capacity of less than 55 gallons of oil. We propose to adopt the 55 gallon capacity criterion for applicability of the adopted SPCC provisions to ECF tanks, but propose to apply those SPCC provisions to tanks with a capacity greater than 55 gallons at all facilities managing ECF, irrespective of whether the aggregate tank capacity for oil and ECF is below the threshold in § 112.1(d)(2). Applying the adopted SPCC provisions to all ECF tanks with a capacity greater than 55 gallons, irrespective of aggregate oil and ECF storage capacity at a facility, is appropriate because ECF can pose a greater storage hazard than petroleum oil, as discussed previously.

[76] These SPCC definitions would apply only to the adopted SPCC provisions.

Administrator for on-site review. We are not adopting paragraphs (a), (b), (c), (f), or (g), which pertain to compliance dates for plan preparation and implementation and self-certification of the plan. Because the ECF exclusion is optional and conditional, we are proposing that all conditions in § 261.38 must be met before ECF can be managed under the conditional exclusion being proposed today. Therefore we are not adopting any of the compliance dates provided in the SPCC regulations. Also, we propose not to allow self-certification of Plans in lieu of certification by a Professional Engineer, as allowed under § 112.6, for those facilities with an aggregate aboveground tank capacity of 10,000 gallons or less, a provision the Agency recently promulgated.[77] We are proposing not to adopt § 112.6 because of the greater hazard that a release of ECF may pose. We do not view certification of the Plan by a Professional Engineer as an unreasonable burden, and believe that the value added to ensure that the Plan is complete, accurate, and appropriate to prevent releases is warranted given the hazards that ECF may pose. A more important consideration is that we do not believe that facilities with ECF tanks would meet the primary eligibility criterion for self-certification: the aggregate oil and ECF tank capacity must be less than 10,000 gallons. Therefore, this provision would add complexity and burden for States and EPA in implementation and enforcement with little or no off-setting benefits. Nonetheless, we specifically request comment on whether there may be facilities that store ECF in tanks that could meet the eligibility criterion and whether self-certification of the SPCC Plan would be appropriate.

- Sections 112.5(a) and 112.5(b), Amendment of SPCC Plan by Owners or Operators. This section requires that the Plan be amended by the owner or operator in accordance with the general requirements in § 112.7 when there is a change in the facility design, construction, operation, or maintenance that materially affects its potential for a discharge. This section also states that owners or operators must complete a review and evaluation of the SPCC Plan at least once every five years from the date the facility becomes subject to this part, and that any technical amendments to the Plan must be certified by a Professional Engineer. We propose to adopt paragraphs (a) and (b), but not paragraph (c). Paragraph (c) requires certification of technical amendments to the Plan and references § 112.6 which allows self-certification in lieu of certification by a Professional Engineer. Given that we propose not to adopt § 112.6 as discussed above, we propose a condition that would require technical amendments to be certified by a Professional Engineer.
- Section 112.7, General Requirements for Spill Prevention, Control, and Countermeasure Plans. We propose to adopt § 112.7, except for paragraph (c) secondary containment, paragraph (d) alternative requirements in lieu of secondary containment, and paragraph (k) alternative requirements in lieu of secondary containment for qualified oil-filled operational equipment. These paragraphs would not be applicable because they pertain to secondary containment which we propose to require under separate conditions. See discussion below. The § 112.7 conditions we are proposing to adopt are paragraph (a) which requires a discussion of the facility's conformance with the requirements included in § 112.7, and development of the Plan; paragraph (b) which requires a prediction of the direction, rate of flow and total quantity of material which could be discharged when experience indicates a potential for equipment failure, overflow, rupture or leakage; paragraph (e) which addresses conducting inspections and tests and keeping records; paragraph (f) which addresses personnel, training, and discharge prevention procedures; paragraph (g) which addresses security requirements; paragraph (h) which addresses facility tank car and tank truck loading/unloading rack requirements; paragraph (i) which requires a brittle fracture evaluation [78] if a tank undergoes a change in service that might affect the risk of a discharge; and paragraph (j) which states that the Plan must include a complete discussion of conformance with the requirements in this part, as well as applicable more stringent State rules, regulations and guidelines.
- Section 112.8, Spill Prevention, Control, and Countermeasure Plan Requirements for Onshore Facilities (excluding production facilities). We are proposing to adopt § 112.8, except for: Paragraph (b), facility drainage; paragraph (c)(2), secondary containment for bulk storage containers; paragraph (c)(9), prevention of releases from effluent treatment facilities; and paragraph (c)(11), secondary containment for mobile and portable containers. These provisions are not warranted because we are proposing separate conditions for secondary containment, as discussed below. The conditions we are proposing to adopt from this section are paragraph (a) which states that the owner or operator meet the general requirements for the Plan listed under § 112.7, and the specific discharge prevention and containment procedures listed in this section; paragraph (c)(1) which states that a tank not be used for storage unless its material and construction are appropriate; paragraph (c)(3) which addresses the drainage of uncontaminated rainwater or effluent bypassing the facility treatment system; paragraph (c)(4) which states that any completely buried metallic storage tank installed on or after January 10, 1974 be protected from corrosion and regularly leak test such storage tanks;[79] paragraph (c)(5) which states that partially buried or bunkered metallic tanks not be used for storage unless you protect the buried section of the tank from corrosion; paragraph (c)(6) which states that each aboveground tank be tested for integrity on a regular schedule and whenever material repairs are made and that the outside of the tanks be inspected frequently for signs of deterioration, discharges, or accumulation of ECF inside diked areas; paragraph (c)(7) which states that leakage through defective internal heating coils be controlled by monitoring the steam return and exhaust lines for contamination from internal heating coils that discharge into an open watercourse, or pass the steam return or exhaust lines through a settling tank, skimmer, or other separation or retention system; paragraph (c)(8) which states that the tank system be engineered or updated in accordance with good engineering practice to avoid discharges (e.g., overfill prevention); paragraph (c)(10) which states that visible discharges from tanks, tank cars, and tank trucks be promptly corrected; and paragraph (d) which addresses provisions regarding facility transfer operation, pumping, and facility process. We are not proposing to adopt the provision which requires that buried piping be provided with a protective wrapping and coating only if the buried piping is installed or replaced on or after August 16, 2002. Rather, we propose to apply this provision to all buried piping. This is because ECF can pose a greater hazard than oil, and in particular, because leaks of the

[77] See 71 FR 77266, December 26, 2006.

[78] This requirement only applies to field erected aboveground storage tanks.

[79] We request comment on whether we should specify that completely buried metallic storage tanks installed prior to January 10, 1974 must be protected from corrosion and regularly leak checked.

hazardous organic compounds present in ECF are more likely than oil to sink into the ground and surrounding water, and therefore create a greater hazard.

We are not proposing to adopt § 112.4, Amendment of Spill Prevention, Control, and Countermeasure Plan by Regional Administrator. That section requires the owner/operator of a facility that has discharged more than 1000 gallons of oil in a single discharge or more than 42 gallons of oil in each of two discharges in any 12 month period to submit a report to the Regional Administrator (RA) that provides information including the corrective action and countermeasures taken, the cause of the discharge, and preventive measures to minimize the possibility of recurrence. That section also allows the RA to require the owner/operator to amend the Plan if the RA determines that the Plan does not meet the requirements of Part 112 or amendment is necessary to prevent and contain discharges from the facility. Finally, that section prescribes procedures that the owner/operator may use to appeal the RA's decision to require an amendment to the Plan. We are not proposing to adopt § 112.4 because: (1) Given that ECF tanks would be required to be equipped with engineered secondary containment (as discussed below), we would not expect releases from ECF tanks of the magnitude that would trigger a report under § 112.4; (2) the proposal already contains a provision that the owner/operator must amend the Plan upon a finding by the RA that amendment is necessary to prevent and contain releases of emission-comparable fuel (see proposed § 2613.8(c)(1)(iii)(B)(*3*)), and this provision would not include prescribed appeal provisions given that the ECF exclusion is elective [80]; and (3) the proposal already contains a provision that the owner/operator must submit a report to the RA within 24 hours of detection of any release of ECF to the environment, except de minimis leaks (i.e., less than or equal to one pound) that are immediately contained and cleaned-up (see Section IV.A.1 below, and proposed § 261.38(c)(1)(v)(C)).

b. Containment and detection of releases. Preventing the release of hazardous secondary materials, such as ECF, to groundwater is one of the primary exposure routes to be addressed under RCRA; the SPCC secondary containment requirements primarily address the release of oil to surface waters. In addition, because ECF can have higher concentrations of certain hazardous hydrocarbons and oxygenates, it can pose a greater hazard to human health and the environment than fossil fuel if released to the environment. Therefore, we believe that the secondary containment requirements in the SPCC rule are not adequate for ECF. Thus, we are proposing engineered secondary containment for the storage of ECF in tank systems.

Engineered secondary containment means the use of an external liner, vault, or double-walled tank. We note that two states—Florida and Minnesota—require some form of engineered secondary containment for fuel oil and do not allow the ''non-engineered'' options allowed by SPCC (e.g., ponds, weirs, and absorbent materials).[81] However, we have decided to propose the substantive engineered secondary containment provisions provided by the hazardous waste rules for tank systems under § 264.193(b–f). Although we recognize they are somewhat more prescriptive than those required by Florida and Minnesota, we believe that persons likely to use this exclusion are likely to use the same tanks in which the hazardous secondary material is currently stored and thus, the facility would not need to retrofit the design of these tanks. However, the Agency does solicit comments on whether an alternative ''engineered'' secondary containment system that may not provide containment equivalent to an external liner, vault, or double-walled tank would also be appropriate.

We propose to adopt the following requirements:

- Section 264.193(b), which prescribes general performance standards for secondary containment systems;
- Section 264.193(c), which prescribes minimum requirements for secondary containment systems;
- Sections 264.193(d)(1–3), which prescribe permissible secondary containment devices—external liner, vault, or double-walled tank. We are not proposing to adopt § 264.193(d)(4), which allows approval by the Regional Administrator of an equivalent device, because the exclusion is designed to be self-implementing. Nevertheless, we request comment on whether the final rule should allow approval of equivalent means of secondary containment to avoid stifling innovation (and potentially having to revise the rule to allow alternative means we believe are appropriate). In providing comments on this issue, we would ask that commenters specifically describe how this provision could work, considering that the rule is designed to be a self-implementing regulation;
- Section 264.193(e), which prescribes design and operating requirements for the permissible secondary containment devices; and
- Section 264.193(f), which prescribes secondary containment requirements for ancillary equipment.

To comply with the adopted hazardous waste tank secondary containment provisions, we propose that the term ''emission-comparable fuel'' be substituted for the term ''waste,'' and that the term ''document in the record'' be substituted for the term ''demonstrate to the Regional Administrator.'' Demonstrations to the Regional Administrator to obtain a waiver are allowed for hazardous waste tank systems in the following situations:

- Section 264.193(c)(3), where the owner or operator can demonstrate to the Regional Administrator that the leak detection system or site conditions will not allow detection of a release within 24 hours;
- Section 264.193(c)(4), where the owner or operator can demonstrate to the Regional Administrator that removal of released materials or accumulated precipitation cannot be accomplished within 24 hours; and
- Section 264.193(e)(3)(iii), where the owner or operator can demonstrate to the Regional Administrator that the leak detection technology for a double-walled tank or site conditions would not allow detection of a release within 24 hours.

As mentioned above, site-specific approval of an alternative provision is inconsistent with the self-implementing provisions of a regulatory exclusion. Consequently, we propose to require the owner or operator to document in the record the basis for not being able to comply with those provisions within 24 hours, as nominally required. This information will be available for review by the Regional Administrator.

We are not proposing to adopt §§ 264.193(g) and 264.193(h) because those provisions provide procedures to support and request a variance from secondary containment. Again, substantive variance provisions cannot be implemented under a self-implementing regulatory exclusion.

Finally, we are not proposing to adopt § 264.193(i) which allows for alternative secondary containment until a facility can comply with the requirements of §§ 264.193(b–f). We do not believe that § 264.193(i) is appropriate because the

[80] Even though we are not proposing prescribed appeal provisions, the owner/operator could certainly explain and clarify why the Plan already addresses concerns the RA may express in a requirement to amend the Plan.

[81] See Florida Administrative Code at 62-762.501, and Minn. R. Ch. at 7151.5400.

proposed ECF exclusion is not a mandated provision; owners and operators that elect to take advantage of the exclusion should be in compliance with all of the requirements necessary to protect human health and the environment before managing excluded ECF.

c. *Preparedness and Prevention, Emergency Procedures, and Response to Leaks or Spills.* We considered whether to adopt the Facility Response Plan (FRP) provisions applicable to fuel oil tanks under §§ 112.20 and 112.21 that require proactive responses to oil discharges, but believe that they are not appropriate for tanks that handle ECF. The FRP requirements are tailored to oil discharges and may not be appropriate for ECF, given that, for example, ECF may contain high concentrations of hazardous compounds that behave in the environment as a dense nonaqueous phase liquid and therefore do not float on the water surface. In addition, the FRP requirements are designed to respond to discharges of oil to navigable waters and adjoining shorelines (i.e., through the use of sorbents, booms, and skimmers). In contrast, today's proposed rule is designed to equip ECF tanks with engineered secondary containment (i.e., external liner, vault, or double-walled tank), as discussed above in order to control and prevent releases to the environment. Consequently, we believe it is appropriate to adopt certain hazardous waste tank provisions that provide proactive measures to respond to a release of ECF. We specifically request comment on our view that the Part 112 FRP requirements would not provide effective measures to respond to releases of ECF, and whether there may be release response provisions applicable to other products that may be more appropriate to adopt for ECF than the hazardous waste tank provisions that we discuss below.

We propose to adopt certain provisions of Subparts C and D of Part 264 and § 264.196 [82] to provide proactive measures to respond to a release of ECF: preparedness and prevention; emergency procedures; and response to leaks or spills. See proposed § 261.38(c)(1)(v).

The Part 64, Subpart C and D provisions are similar to some of the proactive requirements under the Part 112 FRP and in some cases are virtually identical to the FRP provisions. The specific Subpart C (Preparedness and Prevention) provisions we propose to adopt are discussed below. These are commonsense provisions that should represent standard operating practice for facilities that store liquid fuels:

- Section 264.32, Required Equipment. All provisions of this section are appropriate for ECF tank systems: requirements for an internal communications or alarm system capable of providing immediate emergency instruction to facility personnel; a device such as a telephone or two-way radio capable of summoning emergency assistance; portable fire extinguishers, fire control equipment, spill control equipment and decontamination equipment; and water at adequate volume and pressure, or foam producing equipment, or automatic sprinklers, or water spray systems.
- Section 264.33, Testing and Maintenance of Equipment. This section requires that all communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment must be tested and maintained as necessary to assure its proper operation in case of emergency.
- Section 264.34, Access to Communications or Alarm System. We propose to adopt this section to specify that, whenever ECF is distributed into or out of a tank system, all personnel involved in the operation must have access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee.
- Section 264.37, Arrangements with Local Authorities. We propose to adopt this section to specify that the owner or operator must attempt to make arrangements with the appropriate local authorities (fire departments, emergency response teams, police departments, hospitals, etc.) to familiarize the authorities with the layout of the facility, properties of the ECF being managed at the facility, possible evaluation routes, and types of injuries which could result from fires, explosions, or releases at the facility. If State or local authorities decline to enter into such arrangements, the owner or operator must document this refusal in the facility's record.

The specific Part 264, Subpart D (Contingency Plan and Emergency Procedures) provisions we propose to adopt are: [83]

- Section 264.55, Emergency Coordinator. We propose to adopt this provision to specify that, at all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's Spill Prevention, Control, and Countermeasures (SPCC) Plan, all ECF operations and activities at the facility, the location and characteristics of ECF handled, the location of all records within the facility pertaining to ECF, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the SPCC Plan.
- Section 264.56, Emergency Procedures. We propose to adopt this provision to specify that: (1) Whenever there is an imminent or actual emergency situation relating to the ECF tank system, the emergency coordinator must immediately activate internal facility alarms or communication systems, where applicable, to notify all facility personnel and notify appropriate State or local agencies with designated response roles if their help is needed; (2) whenever there is a release, fire, or explosion relating to the ECF tank system, the emergency coordinator must immediately identify the character, exact source, amount, and aerial extent of any released materials; (3) the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion; (4) if the emergency coordinator determines that the facility has had a release, fire, or explosion associated with the ECF tank system which could threaten human health, or the environment outside the facility, he must report his findings to the government official designated as the on-scene coordinator for that geographical area or the National Response Center; (5) if the emergency coordinator's assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities; (6) during an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other materials at the facility; (7) if the ECF tank system stops operations in response to a fire,

[82] As discussed later in the text, the § 264.196 provisions specifically address failures of the types of engineered secondary containment (i.e., external liner, vault, or double-walled tank) that we propose to specify for ECF tanks. Thus, adopting these provisions in lieu of the Part 112 RFP provisions, which address discharge countermeasures (e.g., absorbents, booms, skimmers, and dispersants) more appropriate for other types of secondary containment, is particularly appropriate.

[83] We are not proposing to adopt the Subpart D contingency plan provisions because the SPCC Plan that we propose to specify as a condition of the exclusion is equivalent to the contingency plan required for hazardous waste tank facilities.

explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate; (8) immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered ECF, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility;[84] (9) the emergency coordinator must ensure that, in the affected area(s) of the facility, materials that may be incompatible with the released ECF is treated, stored, or disposed of until cleanup procedures are completed and all emergency equipment listed in the SPCC Plan is cleaned and fit for its intended use before operations are resumed; and (10) the owner or operator must note in the record the time, date, and details of any incident that requires implementing the SPCC Plan for the ECF tank system and within 15 days after the incident, the owner or operator must submit a written report on the incident to the Regional Administrator.

We propose to adopt the provisions under § 264.196 (Response to Leaks or Spills and Disposition of Leaking or Unfit-for-Use Tank Systems), except for §§ 264.196(e)(1) and (e)(4), for all ECF tank systems not subject to the hazardous substance underground storage tank requirements of § 280.42(b). To comply with the adopted provisions of § 264.196, you would substitute the term ''emission-comparable fuel'' for the terms ''hazardous waste'' and ''waste,'' and the term ''record'' for the term ''operating record.'' The adopted provisions would specify that an ECF tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the owner or operator must satisfy the following conditions: (1) The owner or operator must immediately stop the flow of ECF into the tank system or secondary containment system and inspect the system to determine the cause of the release; (2) if the release was from the tank system, the owner/operator must, within 24 hours after detection of the leak or, if the owner/operator demonstrates that it is not possible, at the earliest practicable time, remove as much of the ECF as is necessary to prevent further release of ECF to the environment and to allow inspection and repair of the tank system to be performed; (3) if the ECF released was to a secondary containment system, all released ECF must be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment; (4) the owner/operator must immediately conduct a visual inspection of the release and, based upon that inspection prevent further migration of the leak or spill to soils or surface water and remove, and properly dispose of, any visible contamination of the soil or surface water; (5) any release to the environment, except de minimis leaks (i.e., less than or equal to one pound) that are immediately contained and cleaned-up must be reported to the Regional Administrator within 24 hours of its detection; (6) within 30 days of detection of a release to the environment, a report containing the following information must be submitted to the Regional Administrator—likely route of migration of the release, characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate), results of any monitoring or sampling conducted in connection with the release (if available), proximity to downgradient drinking water, surface water, and populated areas, and description of response actions taken or planned; (7) the tank system must be closed unless the cause of the release was a spill that has not damaged the integrity of the system and the released material is removed and repairs, if necessary, are made, or unless the cause of the release was a leak from the primary tank system into the secondary containment system and the system is repaired; and (8) if the owner/operator has repaired a tank system and the repair has been extensive (e.g., installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system must not be returned to service unless the owner/operator has obtained a certification by a qualified Professional Engineer that the repaired system is capable of handling ECF without release for the intended life of the system.

We are not proposing to adopt § 264.196(e)(1) because that paragraph would require the tank to be closed under the § 264.197 provisions for closure of a hazardous waste tank. Those provisions are inappropriate for closure of a tank that stored a product—ECF. As provided under proposed § 261.38(b)(13), when ECF operations cease, liquid and accumulated solid residues that remain in a tank system for more than 90 days after the tank system ceases to be operated for storage of ECF are subject to regulation under Parts 262 through 265, 268, 270, 271, and 124. In addition, liquid and accumulated solid residues that are removed from an ECF tank system after the tank system ceases to be operated for storage of ECF are solid wastes subject to regulation as hazardous waste if the waste exhibits a characteristic of hazardous waste under §§ 261.21–261.24 or if the ECF was derived from a hazardous waste listed under §§ 261.31–261.33 when the exclusion was claimed.

Finally, we are not proposing to adopt § 264.196(e)(4) because that paragraph addresses tanks that are not equipped with secondary containment. We are proposing that all ECF tanks must be equipped with secondary containment prior to managing ECF.

d. Air Emissions. As mentioned above, ECF can contain higher levels of certain hazardous, volatile hydrocarbons and oxygenates than found in fuel oil. In this regard, ECF is more analogous to organic liquids typically present in organic chemical production operations than they are to fuel oil. Therefore, we believe it appropriate to condition the exclusion on meeting air emission controls which apply to those organic liquids to prevent the release of one or more of these chemicals to the environment. To this end, we are proposing to adopt virtually all of the provisions of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Organic Liquids Distribution (OLD) under Subpart EEEE, Part 63 as RCRA § 261.38 conditions to control the fugitive air emissions from ECF tank systems.[85] Note that there are no provisions of this proposed rule that would impose new or additional CAA Title V obligations on ECF generators or burners.

ECF would already be subject to the OLD NESHAP if certain applicability requirements are met, including: (1) The facility must be a major source; (2) the ECF must contain greater than 5% of the organic HAP listed in Table 1 to Subpart EEEE; (3) the facility is not subject to another NESHAP;[86] and (4) certain tank size and HAP vapor pressure criteria are met. Thus, we are proposing not to

[84] ECF that is released from the tank system must generally be managed as hazardous waste. See proposed § 261.38(b)(15).

[85] This subpart establishes emission limitations, operating limits, and work practice standards for organic hazardous air pollutants (HAP) emitted from organic liquids distribution (OLD) (non-gasoline) operations at major sources of HAP emissions for facilities that are not subject to another NESHAP. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations, operating limits, and work practice standards.

[86] The subpart EEEE controls are intended to be generic, catch-all controls for air emissions from storage and transfer of organic liquids at facilities that are not already subject to a specific NESHAP.

apply the OLD controls—that we are proposing to adopt under § 261.38 [87]—to ECF tanks that are subject to the OLD controls under § 63.2346, with one exception. We are proposing to apply adopted conditions for any ECF tanks that would not be subject to the controls provided by item 6 in Table 2 to Subpart EEEE because the vapor pressure of the regulated organic HAP does not exceed 76.6 kPa. Specifically, item 6 in Table 2 provides controls for existing and new tanks with a capacity greater than 5,000 gallons if the organic liquid has an annual average true vapor pressure of the organic HAP listed in Table 1 to Subpart EEEE equal to or greater than 76.6 kilopascals (kPa). However, 16 RCRA oxygenates [88] for which comparable fuel specifications have been established in Table 1 to § 261.38 are not listed as CAA hazardous air pollutants in Table 1 to Subpart EEEE (reflection CAA section 112(b)(1)). Further, 11 of these oxygenates have vapor pressures that could contribute significantly to the total vapor pressure of hazardous organics in ECF.[89] Thus, these RCRA oxygenates could potentially increase the vapor pressure of the ECF so that it exceeds 76.6 kPa, the criterion for requiring more stringent controls under item 6 in Table 2 to Subpart EEEE. For this reason, we propose to specify that tanks which are subject to OLD but that are not subject to the requirements under item 6 in Table 2 to Subpart EEEE must consider the vapor pressure of the 11 RCRA oxygenates that have vapor pressures that could significantly contribute to the total vapor pressure, as well as the organic HAP listed in Table 1 to Subpart EEEE in determining whether the vapor pressure would be equal to or exceed 76.6 kPa. See proposed § 261.38(c)(1)(ii)(C)(*1*)(*ii*). If so, we are proposing that the tank must comply with the § 261.38 adopted OLD requirements for tanks storing organic liquids with a vapor pressure equal to, or exceeding, 76.6 kPa. We specifically request comment on this proposed condition. In addition, although we believe that there would be very few ECF tanks that would be placed in this circumstance, we specifically request comment on how to avoid dual CAA and RCRA regulation of any such tanks—tanks that are already subject to OLD as promulgated at Subpart EEEE, Part 63, but which would also need to comply with (more stringent) OLD requirements adopted under RCRA § 261.38 as a condition for the ECF exclusion.

For tanks that are not already subject to the OLD controls under § 63.2346, we are proposing to adopt appropriate Subpart EEEE provisions under § 261.38 as a condition of the ECF exclusion. See discussion below where we propose to adopt virtually all of the Subpart EEEE provisions. These adopted provisions would in no way affect Subpart EEEE and would be implemented and enforced under RCRA authority (e.g., controls under the adopted provisions would not be included in a facility's Title V permit, and a facility would not be required to obtain a Title V permit to comply with these provisions).[90] Our principles for proposing to adopt the OLD provisions under § 261.38 include: (1) Air emissions from ECF tanks should be controlled to a level comparable to levels currently required given that air emissions from storage and handling of ECF can pose the same hazards as storage and handling of the hazardous waste; and (2) the 11 hazardous RCRA oxygenates that have significant vapor pressure, as discussed above, should be considered as well as the organic HAP in Table 1 to Subpart EEEE in determining whether ECF meets the OLD definition of organic liquid and in determining the level of control specified by Table 2 to Subpart EEEE.

We discussed above that 11 of the hazardous RCRA oxygenates for which the comparable fuel specifications would no longer apply and that are not classified as CAA HAP can potentially contribute significantly to the vapor pressure of ECF. Given that vapor pressure of the hazardous organic constituents is a criterion for determining whether the ECF meets the OLD definition of organic liquid (which we propose to adopt in revised form under § 261.38(c)(1)(ii)(C) as discussed below) and the level of emission control required under § 63.2346 (which we also propose to adopt), it is appropriate to require owners and operators to consider these 11 RCRA oxygenates when complying with the adopted OLD provisions.

We also reviewed the OLD provisions to determine whether the controls would be comparable to those currently required for the hazardous waste from which the ECF will be derived. Assurance of comparable controls is warranted given that air emissions from storage and handling of ECF can pose the same hazards as storage and handling of the parent hazardous waste. We determined that adopting the OLD provisions would result in air emission controls comparable to current controls in most situations, with four exceptions: (1) ECF tanks at facilities that are area sources; (2) existing, reconstructed, or new ECF tanks with a capacity less than 5,000 gallons handling ECF with a RCRA oxygenate and organic HAP vapor pressure equal to or greater than 76.6 kPa; (3) existing ECF tanks with a capacity in the range of 5,000 gallons to 50,000 gallons handling ECF with a RCRA oxygenate and organic HAP vapor pressure in the range of 5.2 kPa to 76.6 kPa; and (4) ECF tanks at facilities that are subject to a NESHAP other than Subpart EEEE, unless the tanks at these facilities have comparable air emission controls.[91] We are proposing to adopt the OLD provisions under § 261.38 in a manner that addresses these situations and thus ensures adequate control of air emissions from ECF tanks. We specifically request comment on these proposed conditions:

- The OLD provisions apply only to major sources.[92] Although we do not believe that many ECF tanks will be located at area sources given that we expect the manufacturing sector to generate and burn the majority of the ECF, controls should be maintained at facilities that may be area sources. Consequently, we propose to apply the adopted OLD controls to both area and

[87] As discussed later in the text in this section, we are proposing to adopt under § 261.38 for ECF tank systems virtually all of the Subpart EEEE OLD provisions.

[88] These compounds are Allyl alcohol (CAS No. 107–18–6), Bis(2-ethylhexyl)phthalate [Di-2-ethylhexyl phthalate] (CAS No.117–81–7), Butyl benzyl phthalate (CAS No. 85–68–7), Diethyl phthalate (CAS No. 84–66–2), 2,4-Dimethylphenol (CAS No. 105–67–9), Dimethyl phthalate (CAS No. 131–11–3), Di-n-octyl phthalate (CAS No. 117–84–0), Endothall (CAS No. 145–73–3), Ethyl methacrylate (CAS No. 97–63–2), 2-Ethoxyethanol [Ethylene glycol monoethyl ether] (CAS No. 110–80–5), Isobutyl alcohol (CAS No. 78–83–1), Iosafrole (CAS No. 120–58–1), Methyl ethyl ketone [2-Butanone] (CAS No. 78–93–3), 1,4-Naphthoquinone (CAS No. 130–15–4), Propargyl alcohol [2-Propyn-1-ol] (CAS No. 107–19–7), and Safrole (CAS No. 94–59–7).

[89] Five oxygenates—butyl benzyl phthalate, diethyl phthalate, dimethyl phthalate, di-n-octyl phthalate, and endothall—have vapor pressures in the range of 0.0000002 to 0.001 kPa at 25 C and would not likely contribute significantly to exceeding the 0.7 kPa threshold defining an organic liquid, or to changing the vapor pressure category for the organic liquid that could result in more stringent controls. See USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Section 2.2.

[90] Moreover, there are no provisions of this proposed rule that would impose new CAA Title V obligations.

[91] Also, as discussed previously in this section, we may regulate, in certain instances, tanks that store or handle ECF that would not be subject to the controls provided by item 6 in Table 2 to Subpart EEEE because the vapor pressure of the regulated organic HAP does not exceed 76.6 kPa.

[92] A major source is a facility that emits, facility wide, more than 10 tons per year of any single HAP or 25 tons per year of HAP in the aggregate. An affected source is an area source if it is located at a facility that is not a major source.

major sources. See proposed § 261.38(c)(1)(ii)(C)(*2*)(*i*);

• OLD does not require controls for the two tank size/vapor pressure scenarios listed above, while substantive tank air emission controls (under § 264.1084) are required for the hazardous waste from which the ECF is derived. Consequently, we propose to apply the adopted OLD controls as conditions for ECF tanks with those two tank size/vapor pressure scenarios so that they comply with the same OLD controls applicable to tanks with a capacity greater than 5,000 gallons and a vapor pressure below 76.6 kPa. See proposed § 261.38(c)(1)(ii)(C)(*2*)*(vii*); and

• As mentioned above, the OLD provisions do not apply to storage and handling of organic liquids at facilities that are subject to another NESHAP. This is the case irrespective of whether the other NESHAP establishes controls for air emissions from organic liquid distribution. Consequently, we propose to apply the adopted OLD controls to tanks (and associated equipment) at ECF tanks at a facility subject to another NESHAP, unless the owner/operator documents that the controls (on tanks that store or handle ECF) provided by the other NESHAP are at least equivalent to the controls adopted from OLD for ECF. See proposed § 261.38(c)(1)(ii)(C).

In addition, we are proposing conforming changes to implement the provisions discussed above, and specifically request comment on these proposed provisions. Specifically:

• To implement consideration of the RCRA oxygenates, substitute the term ''RCRA oxygenates as well as organic HAP'' for each occurrence of the term ''organic HAP''; the term ''RCRA oxygenates as well as organic HAP listed in Table 1'' for each occurrence of the term ''organic HAP listed in Table 1''; and the term ''RCRA oxygenates as well as Table 1 organic HAP'' for each occurrence of the term ''Table 1 organic HAP.'' See proposed § 261.38(c)(1)(ii)(C)(*2*)(*ii*).

• To implement consideration of RCRA oxygenates, we are proposing to adopt the following definition of organic liquid—Organic liquid means emission-comparable fuel that: (1) Contains 5 percent by weight or greater of the RCRA oxygenates as well as organic HAP listed in Table 1 to this subpart, as determined using the procedures specified in § 63.2354(c); and (2) has an annual average true vapor pressure of 0.7 kilopascals (0.1 psia) or greater. See proposed § 261.38(c)(1)(ii)(C)(*2*)(*iv*).

• Defining an affected source as the collection of activities and equipment used to distribute emission-comparable fuel into, out of, or within a facility. This would simplify the Part 63 definition of affected source for purposes of the OLD provisions we propose to adopt under § 261.38. See proposed § 261.38(c)(1)(ii)(C)(*2*)*(v*); and

• Substituting the term ''subject to § 261.38(c)(1)(ii)(C)(*3*) of this chapter'' for the term ''subject to this subpart'' to facilitate implementation of the adopted OLD provisions. See proposed § 261.38(c)(1)(ii)(C)(*2*)(*vi*).

Finally, we are proposing that all notifications, reports, and communications required to implement the OLD provisions that we adopt under § 261.38 be submitted to the RCRA regulatory authority rather than the CAA regulatory authority. This is because the conditions for air emission controls are RCRA provisions adopted from the CAA OLD NESHAP. As such, they should be implemented (and enforced) under RCRA authority. We specifically request comment on this proposed provision.

As mentioned above, we propose to adopt virtually all of the provisions of the OLD NESHAP as RCRA conditions to control air emissions from storage and handling of ECF.[93] See proposed § 261.38(c)(1)(ii)(C)(*3*). We believe the implementation requirements (e.g., notifications, reports, testing) are integral to the substantive emission controls and are necessary for compliance assurance.

We acknowledge that this attempt to adopt the provisions of the OLD NESHAP to cover ECF tanks substantially complicates the conditions of the ECF exclusion. This is primarily because the OLD NESHAP does not address hazardous RCRA oxygenates that have significant vapor pressure, and the OLD NESHAP does not address ECF tanks that are currently subject to hazardous waste tank air emission controls that address hazards that remain after the ECF exclusion is claimed. In retrospect, stakeholders may conclude it is less problematic to simply comply with the controls provided for hazardous waste tanks under Subparts AA, BB, and CC of Part 264 or 265. We specifically request comment on: (1) Whether adopting provisions of the OLD NESHAP as conditions of the ECF exclusion is appropriate to address the hazards posed by fugitive air emissions from storage and handling of ECF; (2) whether adopting the OLD NESHAP provisions in the manner proposed is appropriate; and (3) whether it would be equally protective, but less problematic, to simply comply with the air emission controls for hazardous waste tanks in lieu of the adopted OLD NESHAP provisions. Any such comments must include an appropriate rationale and supporting information in order for the Agency to be able to consider it for final action.

2. Underground Storage Tank Systems

ECF storage tank systems that are subject to the requirements under 40 CFR Part 280, Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks would not be subject to the proposed ECF storage tank conditions.[94] The Part 280 requirements are self-implementing and apply to hazardous substances listed in 40 CFR Part 302.4 which are not hazardous wastes. All of the hydrocarbons and oxygenates for which the comparable fuel specifications would be waived for ECF are included on this list of hazardous substances. Thus, the Part 280 requirements would apply to all ECF storage tank systems that meet the § 280.12 definition of underground storage tank. However, the Agency does request information on whether ECF is or would be stored in underground storage tanks or whether, because of the size of these tanks or other factors, ECF would only be stored in above ground storage tanks, tank cars and tank trucks. If so, the Agency solicits comment on a condition that would prohibit the storage of ECF in underground storage tanks.

3. Closure of Tank Systems

If an ECF tank system, tank car, or tank truck ceases to be operated to store ECF product, but has not been cleaned by removing all liquids and accumulated solids within 90 days of cessation of ECF storage operations, the tank system, tank car, and tank truck would become subject to the RCRA

[93] Note that we are not proposing to adopt § 63.2343, What Are My Requirements for Emission Sources Not Requiring Control? This section establishes notification, recordkeeping, and reporting requirements for emissions sources not currently subject to control under Subpart EEE. We do not believe those controls are necessary given that ECF burners and generators must comply with the conditions of the exclusion (and thus the adopted OLD provisions) when they first manage ECF in a tank, tank car, or tank truck.

[94] We request comment, however, on whether owners and operators of ECF tanks subject to the Part 280 requirements for underground storage tanks should also need to control fugitive air emissions as proposed as a condition of the ECF exclusion for storage in other tank systems. Similarly, we request comment on whether owners and operators of such tanks should also need to comply with the preparedness and prevention and emergency procedures provisions we propose as a condition of the ECF exclusion for storage in other tanks.

Subtitle C regulation.[95] [96] See proposed § 261.38(b)(13). This provision is modeled on § 261.4(c) which states:

> A hazardous waste which is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste-treatment-manufacturing unit, is not subject to regulation under parts 262 through 265, 268, 270, 271 and 124 of this chapter or to the notification requirements of section 3010 of RCRA until it exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing, or for storage or transportation of product or raw materials.

Thus, like any other product storage unit which goes out of service, tank systems, tank cars or tank trucks that store or transport ECF would not be required to undergo closure according to the RCRA hazardous waste regulations (unless liquids or accumulated solids were not cleaned from the tank system within 90 days of cessation of operation as an ECF storage/transportation unit), when the unit ceases operation as a product storage/transportation unit. However, the Agency expects that the owner/operators will take common-sense steps to decontaminate and decommission the ECF storage unit if and when it goes out of service. We also encourage the owner/operators in these situations to consult with the regulatory authority as to the best way to ensure that the unit is cleaned properly.

Liquids and accumulated solids removed from a tank system, tank car, or tank truck that ceases to be operated for storage/transport of ECF product are solid wastes. They are hazardous waste if they exhibit a characteristic of hazardous waste or if the ECF were derived from a listed hazardous waste because the ECF is no longer meeting the conditions of the exclusion.

4. Waiver of RCRA Closure for RCRA Tanks That Become ECF Tanks

Interim status and permitted storage units, and generator accumulation units exempt from permit requirements under § 262.34 of this chapter, are currently subject to the closure requirements in 40 CFR Parts 264 and 265, including the requirement to close the unit within 90 days of receiving the final volume of hazardous waste (see 264.113(a) and 265.113(a)). However, we are proposing in this rulemaking not to subject these units to these closure requirements provided that the storage units have been used to store only hazardous waste that is subsequently excluded under the conditions of § 261.38, and that afterward will be used only to store fuel excluded under § 261.38. See proposed § 261.38(b)(14).[97]

This provision is intended to address situations where units such as tanks that have been used to store hazardous wastes, would be required under the existing regulations to go through RCRA closure before storage of the excluded material could commence. In the case of facilities that would be affected by today's proposed rule, this would mean that, for tanks that have been storing hazardous waste for which the generator claims an ECF exclusion, the owner/operator would need to remove all waste residues and other contamination from the tank system in order for the unit to then commence storing the identical material under the terms of the conditional exclusion for ECF. We believe that requiring closure under these circumstances would serve little, if any, environmental purpose, and so propose to explicitly provide in these situations that the storage tank system would not be subject to RCRA closure requirements. As discussed above, however, although an ECF tank system would not be required to undergo closure according to the RCRA hazardous waste regulations, the Agency expects that the owner/operators will take common-sense steps to decontaminate and decommission the tank system if and when it ultimately ceases to operate as an ECF storage tank system. We also note that tank cars/trucks need not meet the definition of an empty HW container before managing the same material as ECF (if that is the only material the container has managed).

5. Management of Incompatible Waste Fuels and Other Materials

In today's proposal, ECF generators would need to take precautions to prevent the mixing of ECF and other materials which could result in reactions which could: (1) Generate extreme heat or pressure, fire or explosions, or violent reactions; (2) produce uncontrolled hazardous mists, fumes, dusts, or gases; (3) produce uncontrolled flammable fumes or gases; or (4) damage the structural integrity of the storage unit or facility. See proposed § 261.38(c)(1)(iv). Appropriate documentation is also proposed to be kept by ECF generators to document how they will take precautions to avoid these situations. This documentation must be kept on-site for three years. Tanks, tank cars and tank trucks holding incompatible materials should be separated by means of a dike, berm, wall or other device.

B. What Other Options Did We Consider?

1. Other Options We Considered To Establish Storage Conditions for ECF

In evaluating possible storage controls for ECF, we considered two other options. One option would impose no specific new controls, but rather would rely on currently applicable controls for commercial products. The other option would apply full RCRA Subtitle C provisions until the ECF leaves the burner storage system—that is, the waste would remain hazardous until it was fed into the boiler.

In considering the first option, we determined that it would be difficult to assure the safe management of ECF because it is not clear what, if any, existing controls would apply to a hazardous waste that becomes an excluded product/fuel. There is a patchwork of Federal and State controls that apply to various products and fuels, but no one set of controls that we would be confident would apply across the board and ensure that ECF would be properly managed, particularly given that ECF can contain higher concentrations of particular hazardous, volatile hydrocarbons and oxygenates. We also believe it would complicate the implementation of this rule, and persons who handled ECF would not necessarily know what conditions must be followed to assure exclusion of the ECF. Consequently, we did not consider this option further.

The other option we considered, applying RCRA Subtitle C provisions until the ECF leaves the burner storage system, would in effect, move the point of exclusion to the ECF boiler. Storage and transportation of ECF would be subject to Subtitle C standards (which could include permits for burner storage units and for those generators that accumulate ECF for more than 90 days). We believe this option would be inappropriate because it would overregulate a material that has substantial fuel value and is inconsistent with the idea that ECF is an

[95] We are also proposing today to clarify that this provision currently applies to currently excluded comparable fuel.

[96] If the tank is used to actively accumulate hazardous waste after being taken out of service as an ECF (or comparable fuel) product tank, the tank may be eligible for the provisions under § 262.34 that waive the permit requirements for generator tanks that accumulate hazardous waste for not more than 90 days.

[97] This proposed provision mirrors the parallel provision for storage units managing zinc-bearing hazardous wastes where the wastes were subsequently excluded as zinc fertilizer. See § 261.4(a)(20)(v) and 67 FR at 48400 (July 24, 2002).

excluded product, rather than a waste material. See *Safe Food and Fertilizer*, 350 F. 3d at 1269 (exclusion based on comparability can extend back to encompass exclusion of the material when stored). We believe that our tailored management conditions adopted from the SPCC requirements, and engineered secondary containment, along with the conditions related to control of fugitive air emissions, are more appropriate for ECF because they reflect requirements to which analogous commercial products are subject.

2. Consideration of Storage Controls for Currently Excluded Comparable Fuels

As a separate issue, we considered whether to propose storage conditions for the currently excluded comparable fuel. The existing comparable fuel exclusion was promulgated in June 1998 and was not conditioned on meeting any particular storage controls. The comparable fuel exclusion was based on the principle that the excluded fuel would be comparable to fuel oil in concentration of hazardous constituents and physical properties that affect combustion, and thus can pose the same hazards as fuel oil during storage.

Comparable fuel does not meet the definition of oil, however, and so is not subject to the SPCC requirements applicable to fuel oil. See 40 CFR Part 112. Consequently, we considered whether to propose to apply the SPCC requirements to comparable fuel. We do not believe that applying the SPCC controls is warranted at this time because we are not aware of evidence of improper storage of these comparable fuels. Nonetheless, we request comment on whether there is evidence of improper storage of comparable fuel and whether the SPCC controls (or other storage controls) should be included as a condition for the existing comparable fuel exclusion.

V. How Would We Assure That the Conditions Are Being Satisfied?

A. What Recordkeeping, Notification and Certificate Conditions Would Apply to Generators and Burners?

We believe it is appropriate to propose that ECF generators and burners satisfy the same recordkeeping, notification and certification conditions that apply to existing comparable fuel generators and burners, as well as additional conditions that reflect that ECF is not physically identical to comparable fuels. In today's preamble, we provide a brief description of our rationale for proposing these provisions as part of the exclusion. However, persons should also refer to the proposed rule for comparable fuels (see 61 FR 17358) and the final rule (see 63 FR 33782) for further discussion.

1. Waste Analysis Plans

We are proposing the same waste analysis plan conditions for ECF as existing comparable fuel because ECF must also meet all of the specifications for comparable fuel, except the specifications for particular hydrocarbons and oxygenates. See existing § 261.38(c)(7) renumbered as proposed § 261.38(b)(4). These conditions require that generators develop a waste analysis plan prior to sampling and analysis of their ECF to determine if the waste fuel meets the exclusion specifications.

In addition, burners of ECF would need to address a number of the other conditions to ensure that the ECF is in compliance with the exclusion. Specifically, burners would need to ensure that the heating value of the fuel, as-fired, is 8,000 Btu/lb, as well as whether the concentration of benzene or acrolein exceeds two percent, the cutpoint for firing rate restrictions on the ECF. If the generator does not provide this information to the burner for each shipment of ECF, today's proposal would require the burner to develop and implement an ECF waste analysis plan to obtain the information. In addition, if a burner blends or treats ECF to achieve an as-fired heating value of 8,000 Btu/lb or greater or an as-fired concentration of benzene or acrolein of two percent or lower, we are proposing that the burner must analyze the fuel as received from the generator and again after blending or treatment to determine the heating value, benzene concentration, or acrolein concentration, as relevant. See proposed § 261.38(b)(5).

The generator (and burners required to develop a sampling and analysis plan) also must have documentation of the: (1) Sampling, analysis, and statistical analysis protocols that were employed; (2) sensitivity and bias of the measurement process; (3) precision of the analytical results for each batch of waste/fuel tested; and (4) results of the statistical analysis. More information on developing these elements of a waste/fuel analysis plan is found in the SW–846 guidance document. These are the same requirements that exist in the existing comparable fuels exclusion waste analysis plans.

2. Sampling and Analysis

As discussed above, we are proposing that ECF must meet all of the specifications for comparable fuel, except the specifications for particular hydrocarbons and oxygenates. Therefore, we are proposing the same conditions regarding sampling and analysis for ECF that are part of the existing comparable fuel exclusion, except the condition to determine the concentrations of particular hydrocarbons and oxygenates.[98]

The sampling and analysis provisions allow process knowledge to be used under certain circumstances to determine which constituents to test for in the initial scan and any follow up testing. Generators of ECF should have adequate knowledge of this hazardous secondary material to allow the use of process knowledge in determining which constituents may and may not be present in their waste. The use of process knowledge may only be used by the original generator of the hazardous waste. We are proposing that testing be required for all constituents, except the particular hydrocarbons and oxygenates for which the specifications do not apply, and those compounds that the initial generator determines are not present in the waste. We are also proposing that the following cannot be determined to ''not be present'' in the waste: (1) A hazardous constituent that causes it to exhibit the toxicity characteristic for the waste or hazardous constituents that were the basis for the waste code in 40 CFR 268.40; (2) a hazardous constituent detected in previous analysis of the waste; (3) a hazardous constituent introduced into the process that generates the waste; or (4) a hazardous constituent that is a byproduct or side reaction to the process that generates the waste. This condition is also in the existing comparable fuels exclusion.

Furthermore, we are proposing that the original generator has the responsibility to document their claim that specific hazardous constituents meet the exclusion specifications based on process knowledge. Regardless of which method a generator uses, testing or process knowledge, the generator is responsible for ensuring that the ECF meets all constituent specifications at all times. If at any time the ECF fails to meet any of the specifications, or other conditions contained in the proposed exclusion, any facility that treats (including burning in a boiler), stores or disposes of the ECF is in violation of Subtitle C hazardous waste requirements.

[98] Although the specifications for benzene and acrolein would not apply, the generator (or the burner) must determine the concentration of these compounds because we propose ECF firing rate restrictions for ECF containing more than two percent of either of these compounds.

3. Speculative Accumulation

We are proposing to adopt for ECF the same speculative accumulation provisions that apply to existing comparable fuel and to any recycled hazardous waste under § 261.2(c)(4). See proposed § 261.38(b)(7). Generators and burners must actually put a given volume of the fuel to its intended use during a one-year period, namely 75 percent of what is on hand at the beginning of each calendar year commencing on January 1. See also the definition of ''accumulated speculatively'' in § 261.1(c)(8). Prohibiting speculative accumulation is warranted because over-accumulation of hazardous waste-derived recyclables has led to severe hazardous waste damage incidents. See 50 FR at 658–61 and 634–37 (January 4, 1985). There is no formal recordkeeping requirement associated with the speculative accumulation provision, but the burden of proof is on the generator and burner to demonstrate that the material has not been speculatively accumulated.[99]

4. Notifications

We are proposing the same notification requirements for ECF generators that comparable fuel generators must comply. Also, ECF burners would be subject to the same notification conditions as comparable fuel burners, as well as additional notification conditions.

a. ECF Generator Notification. The person claiming that a hazardous waste meets the exclusion criteria for ECF would be the ECF generator. The ECF generator need not be the person who originally generates the hazardous waste, but can be the first person who documents and certifies that a specific hazardous waste meets the exclusion criteria.

Just as for comparable fuel generators, we are proposing that an ECF generator submit a one-time notification to regulatory officials (i.e., State RCRA and CAA officials). To be excluded, the generator must send a notification to the EPA Regional RCRA and CAA Directors in States without final RCRA program authorization, and to the State RCRA and CAA Directors in authorized States. Notification of the RCRA and CAA Directors will provide notification of the exclusion and appropriate documentation to both the RCRA and CAA implementing officials. The Agency's intent is for the notification to be sent to both the RCRA and CAA implementing officials because of the nature of this exclusion—a RCRA excluded waste being burned in the CAA regulated unit. Also, if the ECF is burned in a State other than the generating State, then we are proposing that the ECF generator also provide notification to that State's or Region's RCRA and CAA Directors.

Since this would be a self-implementing exclusion, in order to ensure delivery, we are proposing that the notification be sent by certified mail, or other mail service that provides written confirmation of delivery and until the notification of exclusion is received and the ECF generator is informed of such receipt, the waste is still a hazardous waste and must be managed as such. Only after the receipt of such notification by the regulatory officials would the hazardous waste be excluded, provided it was managed in accordance with the conditions proposed today for ECF. If an ECF loses the exclusion, the waste fuel is subject to regulation as a hazardous waste until it returns to compliance with the conditions and a new notification is provided by the generator or another subsequent handler.

Just as for the one-time generator notification in the existing comparable fuels exclusion, we are proposing that the notification contain the following information: (1) The name, address, and RCRA ID number of the person/facility claiming the exclusion; (2) the applicable EPA Hazardous Waste Codes for the ECF if it were not excluded from the definition of solid waste; (3) the name and address of the units, meeting the requirements of proposed § 261.38(c)(2), that will burn the ECF; and (4) the following statement signed and submitted by the person claiming the exclusion or his authorized representative:

> Under penalty of criminal and civil prosecution for making or submitting false statements, representations, or omissions, I certify that the requirements of 40 CFR 261.38 have been met for all emission-comparable fuel/comparable fuel (specify which) identified in this notification. Copies of the records and information required at 40 CFR 261.38(b)(8) are available at the generator's facility. Based on my inquiry of the individuals immediately responsible for obtaining the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

b. ECF Burner Notifications. We are proposing that the ECF Burner would provide the same public notification as required for existing comparable fuel burners, as well as a one-time, initial notification to the regulatory authority. For the public notification, the burner must submit for publication in a major newspaper of general circulation local to the site where the ECF will be burned, a notice entitled ''Notification of Burning of Emission Comparable Fuel Excluded Under the Resource Conservation and Recovery Act'' containing the following information: (1) Name, address, and RCRA ID number of the generating facility; (2) name of the unit(s) that will burn the ECF; (3) a brief, general description of the manufacturing, treatment, or other process generating the emission comparable fuel; (4) an estimate of the average and maximum monthly and annual quantity of ECF that will be used as a fuel in such units; and (5) name and mailing address of the State or Regional Directors to whom the notification is being submitted. This notification must be published in the newspaper prior to the use of the ECF, and is only necessary once for each material. In addition, to be excluded, we are also proposing that the ECF burner submit a one-time initial notification to regulatory officials (proposed § 261.38(c)(4)(i)). The one-time notification would require that the burner certify that the excluded fuel will be stored under the conditions required by this rule and that the burner will comply with the design, operating, notification, reporting and recordkeeping requirements of this rule. This initial notification would facilitate compliance assurance by alerting the regulatory authority that the burner is subject to substantive conditions of the exclusion and by ensuring that the burner is aware of those conditions.

5. Burner Certification

We are proposing the same burner certification for ECF burners as exist for comparable fuel with a few additional conditions. This burner certification is intended to protect the generator by having the ECF burner certify to the generator that he will comply with all applicable storage and burning conditions. Specifically, generators intending to ship the ECF off site for burning would obtain a one-time written, signed statement from the burner that includes the following: A certification that the burner will comply with the storage conditions, burner conditions, and the notification, reporting, recordkeeping and other conditions of the exclusion of ECF under 40 CFR 261.38; the name and address of the facility that will use the ECF as a fuel; and a certification that the state in which the burner is located is authorized to exclude wastes as

[99] Consult § 261.2(f) and 50 FR at 636–37 placing the burden for documenting conformance with conditions of an exclusion on the person claiming the exclusion in an enforcement action.

excluded fuels under (proposed) 40 CFR 261.38(a)(2). This condition coupled with the condition to notify the State or Regional Directors will enable regulatory officials to take any measure that may be appropriate to ensure that excluded fuel is burned in conformance with the applicable regulations and so does not become part of the waste management problem.

6. Recordkeeping

a. General. We are proposing the same recordkeeping conditions for ECF generators that currently apply to comparable fuel generators. In addition, we are proposing a condition that ECF burners keep any records pertaining to the sampling and analysis of the ECF.[100] The Agency believes that because of the self-implementing nature of this exclusion, maintenance of proper information on-site is essential to the proper implementation of the conditional exclusion.

More specifically, we are proposing that ECF generators maintain the following files (see proposed § 261.38 (b)(8)) at the facility generating the fuel: (1) All information required to be submitted to the State RCRA and CAA Directors as part of the notification of the claim of exclusion; (2) a brief description of any process used to convert the hazardous waste to ECF; (3) an estimate of the average and maximum monthly and annual quantities of each hazardous waste claimed to be excluded; (4) documentation for any claim that a constituent is not present in the hazardous waste pursuant to § 261.38(b)(8)(iv); (5) the results of all fuel analyses with quantitation limits; (6) documentation as required for the treatment or blending of a waste to meet the exclusion specifications[101]; (7) a certification from the burner if the excluded fuel is to be shipped off-site; and (8) the certification signed by the person claiming the exclusion or his authorized representative. The ECF generator would also maintain documentation of the waste analysis plan and the results of the sampling and analysis that includes the following: (1) The dates and times waste samples were obtained, and the dates the samples were analyzed; (2) the names and qualifications of the person(s) who obtained the samples; (3) a description of the temporal and spatial locations of the samples; (4) the name and address of the laboratory facility at which analyses of the samples were performed; (5) a description of the analytical methods used, including any clean-up and sample preparation methods; (6) all quantitation limits achieved and all other quality control results for the analysis, (including method blanks, duplicate analyses, matrix spikes, etc.), laboratory quality assurance data, and a description of any deviations from analytical methods written in the plan or from any other activity written in the plan which occurred; (7) all laboratory analytical results demonstrating that the exclusion specifications have been met for the ECF; and (8) all laboratory documentation that support the analytical results, unless a contract between the claimant and the laboratory provides for the documentation to be maintained by the laboratory for the period specified in § 261.38(b)(9) and also provides for the availability of the documentation to the generator upon request. These records are to assist with compliance assurance with the required operating conditions. These records and those required for off-site shipments (discussed below) would have to be maintained for the period of three years. A generator (and ECF burner, as applicable) must maintain a current waste analysis plan during that three year period.

b. Off-Site Shipments. We are also proposing that, for each shipment of ECF a generator sends off-site for burning, a record of the shipment must be kept by the generator and by the burner. We note that a comparable fuel generator is currently subject to this condition, and the condition should apply to an ECF generator for the same reasons. The Agency believes that the generator keeping records of each shipment would help ensure that ECF is transported to the designated boiler. Therefore, we are proposing that ECF generators keep records of the following information for each off-site shipment, as currently required for comparable fuel generators: (1) The name and address of the facility receiving the ECF for burning; (2) the quantity of ECF delivered; (3) the date of shipment or delivery; (4) a cross-reference to the record of ECF analysis or other information used to make the determination that it meets the specifications; and (5) the one-time certification by the burner. These records are to facilitate tracking and to ensure that ECF is shipped to a designated burner.

In addition, we believe that an ECF burner should also keep a record of each shipment to assist with compliance assurance given that there are conditions on burning that relate to the heating value of the ECF and the concentration of benzene and acrolein. Accordingly, we are proposing that ECF burners keep records of the following information for each shipment received from an off-site generator: (1) The name, address, and RCRA ID number of the generator shipping the ECF; (2) the quantity of ECF delivered; and (3) the date of delivery.

Finally, we are proposing that ECF generators that ship ECF off-site must ship directly to the burner. ECF could not be handled by a broker or intermediate handler. This would help ensure that the ECF is received by the generator's designated burner and stored under the prescribed conditions prior to burning. This is important because ECF can pose greater hazard when stored than comparable fuel, and may not have emissions comparable to fossil fuel if not burned by the designated burner under the prescribed conditions. ECF must be burned under the specified burner conditions to ensure conformance with the basic principle of the exclusion—that emissions are comparable to those from burning fuel oil.

7. Transportation

We believe that the Department of Transportation (DOT) requirements, which govern the transportation of hazardous materials, will ensure the safe transportation of ECF. It should be noted that DOT requirements are self-implementing and ECF transporters are required to comply with all applicable requirements under the DOT regulations in 49 CFR parts 171 through 180.

8. Ineligible RCRA Hazardous Waste Codes

Consistent with the current comparable fuel exclusion, we are not proposing to restrict the ECF exclusion to particular waste codes, except that wastes listed for the presence of dioxins or furans would not be eligible for the ECF exclusion. See § 261.38(b)(11). However, we do not expect that corrosive or reactive wastes would be candidates for ECF because of the detrimental impacts on the burning unit that would occur.

[100] We are proposing that ECF burners who are required to sample and analyze ECF to determine the heating value of the ECF or the concentration of benzene or acrolein, if the generator has not provided that information for each shipment, must keep the same records as ECF generators regarding the sampling and analysis plan and the results of sampling and analysis.

[101] ECF can be blended in order to meet the viscosity specification. Records would have to be kept demonstrating that the ECF met all other specifications besides viscosity before blending. ECF can also be treated to meet the specifications. In that case, records would have to be kept that demonstrate bona fide treatment has occurred.

B. What If I Fail To Comply With Conditions of the Exclusion?

It is the responsibility of the generator claiming the exclusion to demonstrate eligibility.[102] More specifically, to be eligible for this exclusion, we are proposing that the person claiming the exclusion must meet the ECF specifications under proposed § 261.38(a)(2), as well as the other conditions of the exclusion: the provisions for achieving the specifications under proposed §§ 261.38(a)(4–7); the implementation requirements under proposed § 261.38(b), and the special requirements for managing ECF under proposed § 261.38(c).

After the exclusion for a waste has become effective, the conditions of the exclusion must continue to be met in order to maintain the exclusion.[103] If any person managing ECF fails to meet one or more of the proposed conditions of the exclusion under § 261.38, we are proposing that the ECF must be managed as a hazardous waste. Therefore, each person who manages ECF that loses its exclusion would have to manage it in accordance with the hazardous waste management requirements from the point when the material was first generated, regardless of whether the person is the one who actually causes the loss of the exclusion. EPA could choose to bring an enforcement action under RCRA section 3008(a) for all violations of RCRA subtitle C requirements occurring from the time the secondary material is generated through the time that it is ultimately disposed.

We request comment, however, on whether the final rule should include a ''reasonable efforts'' provision that would provide that the failure of an off-site, unaffiliated burner to meet the proposed conditions or restrictions of the exclusion would not mean the material was considered waste when handled by the generator, as long as the generator can adequately demonstrate that he has made reasonable efforts to ensure that the material will be managed by the burner under the conditions of the exclusion.[104] To achieve this benefit, the generator would have to exercise ''environmental due diligence'' in reviewing the operations of the burner in advance of transferring the hazardous secondary materials. We believe that a reasonable efforts provision might involve methods, such as audits (including site visits), that a number of generators of hazardous secondary materials now use to maintain their commitment to sound environmental stewardship, and to minimize their potential regulatory and liability exposures. These audits are frequently performed by third parties.

We also request comment on whether a reasonable efforts provision should include criteria that define reasonable efforts, and what those criteria should be. For example, a reasonable efforts provision could prescribe that the generator must evaluate by site visits, prior to the first shipment and every six months thereafter, the ECF storage and boiler design and operation at off-site unaffiliated facilities (e.g., an off-site facility that is not corporately affiliated with the generator) that they do business with.

In addition, we request comment on whether to require the generator to maintain records at the generating facility documenting the reasonable efforts made before transferring ECF to the burner. Such records would presumably include copies of audit reports, and/or other relevant information that was used as the basis for the generator's determination that the burner will manage the material under the conditions of the exclusion. Requiring specific documentation would help EPA or the authorized state to determine whether the generator did make reasonable efforts to ensure that his ECF was managed appropriately.

We also request comment on whether, as part of the documentation, the generator should also be required to maintain at the generating facility a certification statement, signed and dated by an authorized representative of the generator company, that for each burner to which the generator transferred ECF, that the generator made reasonable efforts to ensure that the ECF was properly managed. Such certification statement could, for example, be worded as follows: ''I hereby certify in good faith and to the best of my knowledge that, prior to arranging for transport of excluded hazardous secondary materials to [insert burner name], reasonable efforts were made to ensure that the ECF will be managed under the conditions of the exclusion found at 40 CFR 261.38, and that such efforts were based on current and accurate information.''

Finally, we also solicit comment on whether the frequency of periodic updates of the ''reasonable efforts'' should be identified in the regulations, or whether that question should be left to individual situations applying an objectively reasonable belief standard. Information on industry standards for facility audits of off-site activities, including how frequently they are conducted, would be especially helpful.

Under the reasonable efforts provision, a generator who met his reasonable efforts obligations might ship his ECF to an unaffiliated burner where, due to circumstances beyond the generator's control, the burner failed to comply with the conditions of the exclusion. In such situations, and where the generator's decision to ship to that burner is based on an objectively reasonable evaluation that the burner would manage the ECF under the conditions of the exclusion consistent with this proposed rule, the generator would not have violated the terms of the exclusion.

C. How Would Spills and Leaks Be Managed?

ECF that is spilled or leaked, not cleaned up immediately and no longer meets the conditions of the exclusion is ''discarded.'' Thus, it is a solid waste. In addition, spilled or leaked ECF is a hazardous waste if it exhibits a characteristic of hazardous waste or if the ECF were derived from a listed hazardous waste.

Furthermore, the exclusion would not affect the obligation to promptly respond to and remediate any releases of ECF that may occur. Management of the released material not in compliance with applicable Federal and State hazardous waste requirements could result in an enforcement action. For example, a person who spilled or released ECF and failed to immediately clean it up could potentially be subject to enforcement for illegal disposal of the waste. See, for example, 40 CFR 264.1(g)(8). In addition, the release could potentially be addressed through enforcement orders, such as orders under RCRA sections 3013 and 7003.

D. What Would Be the Time-Line for Meeting the Proposed Conditions?

Because this is an optional and conditional exclusion, we are proposing that all conditions in § 261.38 must be

[102] Consult § 261.2(f) placing the burden for documenting conformance with conditions of an exclusion on the person claiming the exclusion in an enforcement action.

[103] Separate and distinct from any requirement or condition that would be established under this proposed rule, all generators of a solid waste—including ECF generators under this exclusion—have a continuing obligation to conduct proper hazardous waste determinations, including notifying the appropriate government official if they are generating a hazardous waste. 40 CFR 262.11.

[104] Although a proposed condition of the ECF exclusion would require the generator to obtain a certification from the burner that the ECF will be stored and burned under the conditions of the exclusion, a ''reasonable efforts'' provision would require the generator to take reasonable independent and proactive measures to ensure that the burner will manage ECF under the conditions of the exclusion.

met before ECF may be managed outside of the Subtitle C hazardous waste regulations.

VI. What Clarifications and Revisions Are Proposed for the Existing Conditions for Exclusion of Comparable Fuel?

We are proposing to clarify the consequences of failure to maintain compliance with the conditions of the exclusion for comparable fuel and the status of tanks that cease to be operated as comparable fuel storage tanks.[105] We are also proposing to waive the RCRA closure requirements for tank systems that are used only to store hazardous wastes that are subsequently excluded as a comparable fuel.

As discussed in Section V in the context of ECF and for the same reasons, comparable fuel that has lost its exclusion because of failure to comply with one or more conditions of the exclusion must be managed as hazardous waste from the point of generation. See proposed § 261.38(d). As examples, comparable fuel that is spilled or leaked and cannot be burned under the conditions of the exclusion (i.e., in a burner listed under proposed § 261.3(b)(3)(i)), and comparable fuel that is speculatively accumulated must be managed as hazardous waste.

In addition, consistent with the discussion in Section IV.A.3 in the context of ECF and for the same reasons, we propose to clarify that, if a comparable fuel tank system, tank car or tank truck ceases to be used to store comparable fuel product, but has not been cleaned by removing all liquids and accumulated sludge within 90 days of cessation of comparable fuel storage operations, that such systems would become subject to the RCRA Subtitle C regulation as a hazardous waste storage unit.

Finally, we are proposing today that interim status and permitted storage units, and generator accumulation units exempt from permitting under § 262.34, are not subject to the closure requirements of 40 CFR Parts 264 and 265 provided that the storage units have been used to store only hazardous waste that is subsequently excluded under the conditions of § 261.38, and that afterward will be used only to store fuel excluded under § 261.38. This is consistent with the proposed waiver of RCRA closure requirements for ECF, as discussed in Section IV.A.4, and is based on the same rationale. See proposed § 261.38(b)(14). However, as we noted in Section IV.A.4, the Agency expects that the owner/operator take common-sense steps to decontaminate and decommission the units and encourage them to consult with the regulatory authority as to the best way to ensure that the tank system is cleaned properly. See proposed § 261.38(b)(13).

VII. What Are the Responses to Major Comments of the Peer Review Panel?

In April 2007, EPA assembled two panels of expert scientists to review the significant scientific information used to support the proposed rule. One panel addressed questions regarding support for the comparable emissions rationale, and the other panel addressed questions regarding support for the procedure we used to rank the relative hazard of the 37 hydrocarbons and oxygenates for which specifications have been established in Table 1 to existing § 261.38.

Syracuse Research Corporation, under contract to USEPA, selected reviewers for both independence and scientific/technical expertise. Each panel member was selected for his/her recognized technical expertise that bears on the subject matter under discussion. The evaluation of real or perceived bias or conflict of interest is an important consideration and every effort was made to avoid conflicts of interest and significant biases.

The peer review reports, which contain the resumes of the peer reviewers, are available in the docket to the proposed rule (Docket ID No. EPA–HQ–RCRA–2005–0017):

- Syracuse Research Corporation, ''Rationale for Exclusion of Emission-Comparable Fuel,'' April 2007; and
- Syracuse Research Corporation, ''Application of WMPT to Rank Comparable Fuels Constituents,'' April 2007.

In this section of the preamble, we summarize the major comments by the peer reviewers and provide responses. We respond to other comments in separate documents available in the docket to the proposed rule:

- USEPA, ''Response to Peer Review Comments on the Rationale for Exclusion of Emission-Comparable Fuel,'' May 2007; and
- USEPA, ''Response to Peer Review Comments on the Application of WMPT to Rank Comparable Fuels Constituents, May 2007.

A. What Are the Reponses to Major Comments Regarding the Comparable Emissions Rationale?

Comment: One cannot conclude that ECF boilers would be controlled at least as stringently as hazardous waste boilers.

Response: We disagree. As we explain in Section II.A in Part Two above,[106] ECF boilers would be required to: (1) Continuously monitor carbon monoxide (CO) to ensure that levels remain below 100 ppmv; and (2) fire the ECF into the flame zone of the primary fossil fuel, which must comprise at least 50% of the boiler's fuel requirements. These two conditions ensure good combustion and a 99.99% destruction and removal efficiency (DRE) of the hazardous compounds (i.e., benzene, toluene, and the listed oxygenates). In addition, these conditions—CO below 100 ppmv and ensuring 99.99% DRE—are the principal controls applicable to hazardous waste combustors to control non-dioxin/furan organic HAP. The remaining proposed ECF boiler conditions (e.g., the boiler must be of a watertube, nonstoker design; primary fuel must have a minimum heating value of 8,000 Btu/lb; boiler load must be greater than 40%; the ECF must have low viscosity) help ensure the good combustion conditions typical of an oil-fired industrial boiler and are appropriate given that ECF would be burned under a conditional exclusion without a RCRA permit and without the regulatory oversight typical for a RCRA hazardous waste combustor.

The reviewer notes that hazardous waste boilers are subject to operating requirements in addition to CO monitoring to control emissions of non-dioxin/furan organic HAP. Thus, the reviewer questions whether ECF boilers would be controlled as stringently as hazardous waste boilers. Those additional operating requirements (e.g., minimum combustion chamber temperature; maximum waste feedrate), however, are designed to ensure that a hazardous waste boiler maintains 99.99% DRE. Operating limits on those parameters are established during the DRE emissions test. For ECF boilers, the

[105] The proposed rule would also restructure the current requirements for comparable fuel (and syngas fuel) to make the regulatory language more readable given that the regulation must accommodate the proposed exclusion for ECF. We regard these language changes as purely technical, and thus, will accept comment only on whether the suggested language changes express the current meaning of the provision. We are not reexamining, reconsidering or otherwise reopening these provisions for comment.

[106] We explain in that discussion, that, of the four combustion failure modes that EPA has identified—total ignition failure, partial ignition failure, combustion air failure, and rapid quench failure—only a total ignition failure could result in low CO and poor destruction of organic compounds in the feed and combustion by-products. Total ignition failure could potentially occur in a boiler if the fuel firing gun inadvertently directed the fuel to a location in the combustion chamber away from the flame zone—i.e., if the fuel were not fired into the flame zone. The other combustion failure modes (i.e., partial ignition failure; combustion air failure; and rapid quench failure) would result in high CO and potentially high unburned organics.

conditions to fire ECF directly into a stable, primary fuel flame zone and maintain a CO limit of 100 ppmv or less ensure 99.99% DRE. Thus, those additional operating requirements that are established for hazardous waste boilers during the DRE emissions test are not needed to ensure that 99.99% DRE is maintained for ECF boilers.

Comment: To evaluate whether ECF boiler emissions are likely to be substantially higher than oil-fired boiler emissions, the Agency inappropriately compared test condition average emissions for hazardous waste boilers (as a surrogate for ECF boiler emissions, given that ECF boilers would be controlled at least as stringently as hazardous waste boilers) to the 95th percentile of run emissions for oil-fired boilers. The reviewer noted that, to compare apples-to-apples, hazardous waste boiler test condition averages should be compared to oil-fired boiler test condition averages.

Response: In conducting our initial analysis, we had not compared hazardous waste boiler test condition averages to oil-fired boiler test condition averages because we have limited oil-fired boiler data (test conditions) for several of the compounds. Given the general paucity of emissions data and considering the large number of oil-fired industrial boilers, we used the oil-fired boiler runs, rather than test condition averages, to help represent the range of values that such boilers may emit.

Nonetheless, in retrospect, we agree with the reviewer. In fact, we have substantial oil emissions data representing many test conditions for several compounds, such as benzene, formaldehyde, naphthalene, and toluene. And, although we have limited data for several other compounds that comprise only one to three test conditions, we also have hazardous waste boiler data for several compounds that comprise only a few test conditions.

We have reanalyzed our data base to compare hazardous waste boiler emission test condition averages to the 95th percentile oil-fired boiler emission test condition averages. The results of that reanalysis support the proposed rule. See Section I.B.1 in Part Two above.

The 95th percentile test condition average benchmark levels for oil-fired boiler emissions are lower than the 95th percentile run benchmark levels, as expected. This results in additional hazardous waste boiler emissions exceeding the oil-fired boiler emissions benchmark.[107] However, these additional exceedances do not affect our view that ECF boiler emissions would be generally comparable to oil-fired boiler emissions (e.g., they are directly comparable or exceedances are not of consequence because they are *de minimis*).

Specifically, there is one additional exceedance each for benz(a)anthracene and fluorine, and two additional exceedances for ethylbenzene. All of these are *de minimis* exceedances, however, with emissions below 1 µg/dscm.

There is also one additional exceedance for benzene, but the exceedance is *de minimis* given that the revised oil-fired boiler benchmark is 90 µg/dscm and the additional hazardous waste boiler exceedance is at an emission level of 91 µg/dscm.

Finally, there are three additional exceedances for methylene chloride. The revised oil emissions benchmark is 40 µg/dscm, rather than the previous benchmark of 58 µg/dscm based on run data, but is based on only two test conditions. Thus, we believe it is not representative of the range of oil-fired boiler emissions. The three additional hazardous waste boiler emissions exceedances are at 54 µg/dscm, 52 µg/dscm, and 50 µg/dscm. Test reports for two of the three boilers indicate that methylene chloride contamination is known or suspected. The third test report is silent on the potential for contamination, but methylene chloride is commonly recognized as a sample and lab contaminant. Thus, we do not consider the remaining exceedance an indication that hazardous waste boiler emissions of methylene chloride are not comparable to oil emissions, considering also the limited oil emissions data and the *de minimis* potential (but not likely) increase in emissions.

Comment: Given that combustion is a percent destruction process, residual emissions of organic compounds in the feed will increase as feedrate increases. The Agency should ensure that burning fuels with high concentrations of hazardous hydrocarbons and oxygenates will, in fact, result in trace levels of emissions. An approach would be to project emission levels for the ECF compounds assuming 99.99% or possibly 99.999% DRE (since most DRE testing has shown this result) to determine if emissions are within the range of benchmark levels.

Response: It is reasonable to question whether emissions of unburned ECF compounds could exceed the benchmark levels given that the ECF compounds (i.e., benzene, toluene, and the listed oxygenates) could be fed at high feedrates. These hazardous compounds could be present in ECF at any concentration and ECF could represent a substantial portion of the fuel fired to the boiler—25 percent of the heat input for benzene and acrolein, and 50 percent of the heat input for the remaining compounds.[108]

We believe, however, that the hazardous waste boiler emissions data that we use as a surrogate for ECF emissions [109] are likely to include emissions that would result from burning ECF. It is reasonable to assume that some of the 26 hazardous waste watertube steam boilers in our data base are burning waste fuels that are destined to become ECF.[110] As we have explained above in Part Two, Section I.B.1, those emissions are comparable to oil emissions.

Nonetheless, we acknowledge that the ECF exclusion would allow benzene, toluene, and the listed oxygenates to be fed into industrial boilers at much higher rates than they may be actually fired in practice. For example, the maximum concentrations of many of these compounds in waste fuels that have been identified as candidate fuels for exclusion are relatively low: 0.05% for acrolein; 10% for methyl ethyl ketone; 15% for isobutyl alcohol and acetophenone; and 25% for benzene.[111] Toluene can be present at much higher concentrations, however, including levels up to nearly 100%. (As a practical matter, although the ECF exclusion would allow unlimited concentrations, the concentration of hazardous

[107] See memorandum from Bob Holloway, USEPA, to Docket ID No. EPA–HQ–RCRA–2005–0017, entitled ''Reanalysis of Comparison of Oil-Fired Boiler Emissions to Hazardous Waste Boiler Emissions Considering Test Condition Averages for Oil Emissions Data,'' dated April 25, 2007.

[108] This is a simplification. The actual condition would be that the firing rate of ECF containing benzene and acrolein above the specification levels in Table 1 to § 261.38 would be restricted to 25% of the total fuel input to the boiler on a heat or volume input basis, whichever results in a lower volume input of ECF, if the concentration of benzene or acrolein in the ECF exceeds 2 percent by mass. For the other compounds, the ECF firing rate would be restricted to 50% of the total fuel input to the boiler on a heat or volume input basis, whichever results in a lower volume input of ECF.

[109] Hazardous waste boiler emissions are a reasonable surrogate for ECF boiler emissions because organic emissions from ECF boilers would be controlled at least as stringently as emissions from hazardous waste boilers, as discussed above in response to Comment 1.

[110] This is a reasonable assumption because waste fuels that would qualify as ECF are premium fuels that a facility would want to burn, if possible, in an on-site boiler or in an affiliated facility's boiler, rather than contracting with a commercial hazardous waste combustor to burn the fuel.

[111] See memorandum from Bob Holloway, USEPA, to Docket ID No. EPA–HQ–RCRA–2005–0017, entitled ''Potential Approach to Establish Firing Rate Restrictions on Emission-Comparable Fuel,'' dated May 21, 2007, Table 2.

compounds will be limited to the levels actually found in waste fuels.) In addition, ECF would only represent a portion of the fuel fed to the boiler since at least 50% of the fuel must be fossil fuel. Finally, actual firing rates (and thus the feedrate of the compound of concern) will depend on a number of other factors, including the quantity of ECF generated by a facility that burns ECF on-site, and the quantity of ECF in the vicinity of facilities that burn ECF from off-site sources.

Notwithstanding current actual practice regarding the concentrations of compounds in ECF and ECF firing rates, it is reasonable to question whether the exclusion would allow such high feedrates of the compounds of concern that ECF emissions may not meet the criterion of being comparable to the emissions from burning oil. For example, if we assumed that a DRE of only 99.99% were achieved when feeding ECF with a 90% concentration of a compound of concern at the maximum firing rate (i.e., 25% for benzene and acrolein and 50% for the other compounds), the residual emissions of the compound would far exceed the emissions from burning oil.

Consequently, we request comment on an approach that would limit the feedrate of benzene, toluene, and the listed oxygenates to ensure that ECF emissions are comparable to the emissions from burning oil. Under the approach, we would identify a target emission level for each of these hazardous compounds, estimate a destruction and removal efficiency (DRE) for the compound, and calculate a maximum ECF firing rate as a function of the concentration of the compound in the ECF.

We would identify the target emission levels as:

- For each hazardous compound for which we have emissions data from oil-fired industrial boilers, the target level would be the highest test condition average (after screening out high apparent outliers) or a *de minimis* level, whichever is higher;
- For each hazardous compound for which we have only hazardous waste boiler emissions data, the target level would be the highest test condition average (after screening out high statistical outliers) [112] or a *de minimis* level, whichever is higher; and
- For each hazardous compound for which we have neither oil-fired boiler nor hazardous waste boiler emissions data, the target level would be a *de minimis* level.

The target emission levels for the three hazardous compounds for which we have oil emissions data—acrolein, benzene, and toluene—would range from a *de minimis* level of 20 µg/dscm [113] to 160 µg/dscm.[114] The target emission levels for the seven hazardous compounds [115] for which we have only hazardous waste boiler emissions data would range from a *de minimis* level of 20 µg/dscm to 130 µg/dscm. And, the target emission level for hazardous compounds for which we do not have emissions data would be a *de minimis* level of 20 µg/dscm.

We specifically request comment on whether these target emission levels are appropriate.

We believe it is reasonable to estimate a default DRE (i.e., DRE achievable at low compound feedrates) of 99.99% for the hazardous compounds that have a Thermal Stability [116] ranking of Class I or Class 2 (i.e., benzene, toluene, and methyl methacrylate) and a DRE of 99.995% for the other hazardous compounds. The Thermal Stability ranking is a principal tool for selecting difficult to destroy compounds for DRE testing required to establish operating requirements for hazardous waste combustors. We have DRE data for hazardous waste watertube boilers indicating that boilers may achieve DREs below 99.995% for Class I and Class 2 compounds when they are fed at low feedrates, while these boilers achieve greater than 99.995% DRE for Class 3–7 compounds that are fed at low feedrates.[117]

It is also reasonable to conclude that DRE increases with an increase in feedrate of the target compound. It is common knowledge that feedrates of POHCs must be high enough to avoid DRE failures attributable to stack method or analytical method imprecision and the baseline level of products of incomplete combustion.[118] A recent paper by Brukh, et al, lends support to this view.[119] Moreover, a plot of hazardous waste boiler DRE run data versus feedrate MTEC [120] indicates a general trend toward higher DREs as feedrates increase for those hazardous compounds for which we have DRE data over a range of feedrates.[121]

It appears that, when MTECs exceed 1.0E+07 µg/dscm, DRE exceeds 99.999% for all compounds. Additionally, it appears that, for MTECs in the range of 5.0E+06 to 1.0E+07, DRE exceeds 99.995% for all hazardous compounds. Consequently, it may be appropriate to consider this feedrate/DRE relationship to identify potential ECF firing rate limits.

We specifically request comment on our views regarding the relationship between DRE and compound feedrate.

We also have considered the potential concentrations of the hazardous compounds in ECF to calculate potential ECF firing rate limits

[112] See USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Appendix C.

[113] It is reasonable to consider 20 µg/dscm a *de minimis* emission level because it is comparable to approximately 0.01 ppmv propane equivalents for the high molecular weight compounds of concern, and is 3 orders of magnitude lower than the 10 ppmv total hydrocarbon emission limit the Agency has established for liquid fuel boilers that burn hazardous waste. See § 63.1217(a)(5)(ii).

[114] See memorandum from Bob Holloway, USEPA, to Docket ID No. EPA–HQ–RCRA–2005–0017, entitled ''Potential Approach to Establish Firing Rate Restrictions on Emission-Comparable Fuel,'' dated May 21, 2007, Table 1.

[115] We have hazardous waste boiler emissions data for: acetophenone, biz(2-ethylhexyl)phthalate, diethyl phthalate, di-n-butyl phthalate, di-n-octyl phthalate, methyl ethyl ketone, and phenol.

[116] The Thermal Stability ranking classifies (generally) hazardous compounds according to their gas-phase thermal stability under oxygen-starved conditions. Compounds are ranked according to the temperature required to destroy 99% of the compound in 2 seconds under oxygen-starved conditions. See USEPA, ''Guidance on Setting Permit Conditions and Reporting Trial Burn Results, Volume II of the Hazardous Waste Incineration Guidance Series,'' January 1989, Table D–1.

[117] See memorandum from Bob Holloway, USEPA, to Docket ID No. EPA–HQ–RCRA–2005–0017, entitled ''Potential Approach to Establish Firing Rate Restrictions on Emission-Comparable Fuel,'' dated May 21, 2007.

[118] See USEPA, Operational Parameters for Hazardous Waste Combustion Devices,'' October 1993. Section 4.3.2.1.

[119] See R. Brukh, R. Baret, and S. Mitra, New Jersey Institute of Technology, ''The Effect of Waste Concentration on Destruction Efficiency During Incineration,'' Environmental Engineering Science, Vol. 23, No. 2, 2006. The authors conducted experiments in a small, well-stirred reactor involving the combustion of methylene chloride (CH_2Cl_2) with ethylene (C_2H_4) as the primary fuel at residence times of 5–12 ms and temperatures of 1400–1750 K (2050–2700 °F). Experiments were done at both fuel rich and fuel lean conditions. CH_2Cl_2 concentrations were low (2–1350 ppm by volume in the main feed.). The authors modeled the combustion of methylene chloride, methyl chloride (CH_3Cl), and benzene. They show limited experimental data for CH_3Cl and C_6H_6 from previous work. The authors' hypothesis is that higher concentrations of POHC contribute additional radical fractions and the overall result is a higher destruction efficiency. This work would support higher DREs at higher feedrates if the results can be extrapolated to the higher POHC concentrations of concern and the higher residence times for hazardous waste combustors. This paper is available in the docket to this rulemaking: Docket ID No. EPA–HQ–RCRA–2005–0017.

[120] MTEC means maximum theoretical emission concentration (µg/dscm) and is an approach to normalize the feedrate for various size boilers. It is calculated as the mass feedrate divided by the stack gas flowrate.

[121] See memorandum from Bob Holloway, USEPA, to Docket ID No. EPA–HQ–RCRA–2005–0017, entitled ''Potential Approach to Establish Firing Rate Restrictions on Emission-Comparable Fuel,'' dated May 21, 2007, Figure 2.

considering the estimated DREs and target emission levels discussed above. As expected, at low concentrations in the ECF, the ECF firing rate would not be limited (i.e., other than the limits that would apply as a basic condition of the exclusion—25% maximum firing rate if the benzene or acrolein concentration exceeds 2%, and 50% maximum firing rate for all other ECF).[122]

We noted an anomalous situation for most hazardous compounds, however, where the firing rate limit first decreased as feedrate increased (as expected), but then at higher feedrates, the firing rate limit began to increase. This was caused by our assumption that DRE increases in a step-wise function rather than, as likely, in a smooth progression as feedrate increases. For example, we estimated DRE at 99.995% when the MTEC is 9.9E+06, and at 99.999% when the MTEC is 10E+06 (1.0E+07).

Clearly, this is not a realistic representation of how DRE relates to MTEC. To address this concern, we could, for example, consider whether it is appropriate to use a best-fit curve of the benzene data to develop a relationship between DRE and MTEC. Benzene may be an appropriate hazardous compound to select to define the relationship because it ranks the highest on the thermal stability index of the compounds for which we have DREs over a range of feedrates, it has the highest ranking for the hazardous compounds, and it is the third highest ranking compound in the Thermal Stability index, ranking higher than 341 other compounds.

We specifically request comment on whether feedrate limits for the hazardous compounds may be necessary to ensure that the target emission levels are not exceeded, and on the approach described above for potentially establishing ECF firing rate limits.

Comment: EPA should be sure that all coal-fired boilers have enough sulfur to inhibit dioxin/furan formation and thus justify a waiver from gas temperature control at the inlet to the electrostatic precipitator (ESP) or fabric filter (FF).

Response: Although data are limited, it appears that coal-fired boilers equipped with an ESP or FF and burning low sulfur coal will have low dioxin/furan emissions irrespective of the gas temperature at the inlet to the ESP or FF.

We have dioxin/furan data for 17 coal-fired boilers that are equipped with an ESP or FF.[123] One of the boilers burns hazardous waste and the remaining boilers do not burn hazardous waste. All dioxin/furan emissions are below 0.35 ng TEQ/dscm, which is below the 0.40 ng TEQ/dscm generic MACT dioxin/furan emission standard for hazardous waste combustors. See 40 CFR Part 63, Subpart EEE.

Nine sources operate the ESP or FF above a (estimated) gas temperature of 400 F, with a range of 401 °F to 500 °F. All of these boilers have dioxin/furan emissions below 0.2 ng TEQ/dscm. At least one of these boilers burns low sulfur coal.

Nonetheless, given the limited data, we specifically request comment and supporting information on the potential for dioxin/furan formation across the ESP or FF of a coal-fired boiler when the APCD is operated above 400 F, and thus whether a temperature limit is warranted as a condition of the ECF exclusion for those boilers burning coal as the primary fuel.

Comment: If ECF is fired in a separate firing system at a low firing rate, potentially high levels of CO from poor combustion of the ECF may be masked by the low CO from the primary fuel. In addition, the method of mixing the ECF with the other fuel is extremely important and should be considered when developing conditions that ensure good combustion. The location and design of the ECF injector will also be critical to ensuring good combustion. The ECF injector may meet the proposed conditions, but nonetheless not provide good combustion.

Response: The proposed conditions for firing ECF to ensure good combustion (e.g., atomization conditions; firing ECF into the flame zone of the primary, fossil fuel which must represent at least 50% of the fuel input to the boiler; the boiler must operate at >40% load to ensure a stable flame and well-mixed fuels) are at least as stringent as those required for hazardous waste boilers under 40 CFR 266.110, which ensure good combustion conditions. Moreover, if the ECF is injected in a manner that may not ensure good combustion, the 100 ppmv CO limit could not be achieved.

Nonetheless, we request comment on whether additional conditions on the ECF burner design, location, or operation may be warranted to ensure good combustion of ECF. Any such comments must include supporting information in order for the Agency to be able to consider it for final action.

Comment: The Agency has few oil-fired boiler emissions data to determine whether ECF boiler emissions (using hazardous waste boiler emissions as a surrogate) are likely to be comparable. Including additional sources in the data base could increase or decrease the benchmark emissions levels EPA used for the comparison.

Response: Our oil-fired emissions data base was developed under a comprehensive effort to obtain available emissions data to develop MACT standards (i.e., under CAA Section 112(d)) for industrial, commercial, and institutional boilers that do not burn hazardous waste. We have emissions data for 26 compounds for comparison with hazardous waste boiler emissions, comprised of more than 500 runs representing more than 235 test conditions. Nonetheless, we have few emissions data for some compounds, as the reviewer notes—data for only 1 or 2 test conditions that cannot represent the range of emissions from oil-fired boilers.

We note, however, that if more data were available, the emissions benchmark levels would generally increase rather than decrease as the range of emission levels is better represented. Counter-balancing this, however, is the fact that if we had additional hazardous waste boiler emissions data, some data would likely be higher than those that are currently in our data base.

Comment: Because most watertube steam boilers operate at less than 4% oxygen, requiring that CO be corrected to 7% oxygen will dilute actual CO levels. This dilution effect could cause operators to miss operational problems.

Response: We do not understand how correcting CO to 7% oxygen rather than 4% oxygen would affect the ability of operators to detect degradation in combustion conditions. Nonetheless, we specifically request comment and supporting information on whether CO should be corrected to 4% oxygen, which more closely reflects actual stack oxygen concentrations for these types of boilers. On a 4% oxygen correction basis, the 100 ppmv CO limit (at 7% oxygen) would be 120 ppmv.

Comment: A peer reviewer provides cites for two reports that may provide additional information on emissions from coal-fired power plants and one report that provides emissions estimates for volatile organic compounds emitted by the combustion of coal, gas, and oil:

- PCDD/PCDF Emissions from Coal Fired Power Plants, Riggs, Karen B. et al., Battelle, Columbus, OH, 15th International Symposium on

[122] See memorandum from Bob Holloway, USEPA, to Docket ID No. EPA–HQ–RCRA–2005–0017, entitled ''Potential Approach to Establish Firing Rate Restrictions on Emission-Comparable Fuel,'' dated May 21, 2007, Table 3.

[123] USEPA, ''Response to Peer Review Comments on the Rationale for Exclusion of Emission-Comparable Fuel,'' May 2007, Section I, Comment 4.

Chlorinated Dioxins and Related Compounds, August 21–25, 1995, Edmonton, Canada, Volume 24, Pages 51–54.

• A Comprehensive Assessment of Toxic Emissions from Coal-Fired Power Plants, Phase 1 Results, from the U.S. Department of Energy Study. Prepared for Pittsburgh Energy Technology Center, U.S. Department of Energy. September 1996.

• The EPA National Air Quality and Emissions Trends Report, 2003 Special Study Edition, has Volatile Organic Compounds Emissions Estimates given in Table A–5 for coal, gas and oil. Later reports may be available.

Response: We appreciate the references and request comment on the significance and relevance of information in these reports on the proposed ECF exclusion. These documents are in the docket for this rulemaking: Docket ID No. EPA–HQ–RCRA–2005–0017.

B. What Are the Reponses to Major Comments Regarding the Application of the WMPT to Rank Comparable Fuel Constituents?

Comment: Because the 37 constituents are found in combustion (*i.e.* air) emissions, EPA should use air half-life data when generating Persistence scores for this effort, rather than half-life data from other media.

Response: We disagree. Information suggests that it's important to take into account the risks from indirect exposures (e.g. ingesting contaminated soil, food, or water) when considering the potential risk from combustor emissions. For example, Fradkin *et al.* (1988) [124] linked elevated levels of chemical pollutants in soils, lake sediments, and cow's milk to the atmospheric transport and deposition of pollutants from combustion sources.

The current effort is not a full quantitative risk assessment, but rather a screening-level ranking of chemicals based on potential chronic (i.e., long-term) risks to human health and the environment. As such, we consider it appropriate to make the protective assumption, as in the WMPT, of using the highest half-life data of the relevant media to derive Persistence scores for the 37 constituents.

Comment: When deriving a Persistence score for benzene, it would be more appropriate to use its half-life in air, rather than its half-life in sediment, as in the WMPT.

Response: For the reasons stated above, we consider it appropriate to use the highest half-life from all relevant environmental media. We also consider it appropriate to consistently apply the WMPT methodology across all 37 constituents whenever possible.

Interestingly, the peer reviewers did not agree on the implications of using the air half-life to derive benzene's Persistence score: One peer reviewer thought it would lower the Persistence score, while another peer reviewer saw it as grounds for a high Persistence score. Also, the three peer reviewers do not agree on the final disposition of benzene's ranking. One peer reviewer recommends moving benzene to Category C, another peer reviewer recommends leaving benzene in category B, while the third peer reviewer, due to benzene's toxicity, recommends elevating it to Category A.

Nevertheless, we recognize that as one peer reviewer puts it, ''* * * although the WMPT is a useful screening tool for evaluating the hazard of particular compounds, it should not be used blindly.'' We thus request public comment on this issue.

Comment: No toxicity data were available for five hazardous compounds (1,4 naphthoquinone, isosafrole, propargyl alcohol, safrole, dimethyl phthalate), and therefore complete scoring was not possible. Therefore, one of the peer reviewers thought that these compounds should have been removed from consideration as emission-comparable fuel constituents.

Response: While we recognize that no toxicity data were available for these five hazardous compounds, and therefore complete scoring was not possible, we do not agree that this should result in these compounds being removed from consideration as emission comparable fuel constituents. Specifically, there were sufficient data to derive the other two subscores (for Persistence and Bioaccumulation) required for final scores. Given their Persistence and Bioaccumulation scores, and assuming a worst-case toxicity score for each, none of the five hazardous compounds ranked higher than Category C. Therefore, we believe it appropriate to include them as emission-comparable fuel (ECF) constituents.

Comment: Little scientific justification is provided for grouping the PAHs and naphthalene into a common group.

Response: We made the policy decision to remain consistent with the pre-reviewed WMPT methodology, which classified constituents that scored 8 or 9 as high hazard. Naphthalene scored an 8, and thus is classified as a high hazard compound.

We also remained consistent with the WMPT methodology and the toxic release inventory (TRI) by grouping PAHs together, and classifying them as high hazard. Most PAHs scored an 8 or 9; benzo(a)anthracene and chrysene, however, scored 7.[125] In addition, we note that it is an EPA priority to reduce, whenever possible, the environmental release of any chemical found on EPA's list of Priority Chemicals. PAH's and naphthalene are members of EPA's list of priority chemicals. Consequently, we believe it is reasonable to classify PAHs and naphthalene as high hazard compounds.

We specifically request comment on adopting the WMPT (and TRI) policy of classifying PAHs as a group, and being consistent with the Agency's priority to reduce the environmental release of chemicals on EPA's list of priority chemicals. Any comment suggesting an alternative approach must include an appropriate rationale and supporting information in order for the Agency to be able to consider it for final action.

Comment: The Agency should consider the implications of the combustion process on the composition of potential emissions components in terms of the parent constituents, as well as the combustion by-products.

Response: This comment is not germane to the scope of this peer review. We discuss in Part Two, Sections I and II of the preamble why we believe that emissions from burning ECF under the proposed conditions would be comparable to emissions from burning oil in an industrial boiler operating under good combustion conditions.

Comment: The WMPT model uses many screening level values (e.g. ambient water quality criteria (AWQC)) that were developed for purposes other than that for which they are being used. Because the Agency used the data that were contained in the data base, there was little assessment of the quality of these data. The use of these values as ''numerical environmental benchmarks'' is inappropriate and will result in conservative estimates of risk.

Response: The ambient water quality criteria were not used to score any of the ECF constituents. Also, the WMPT methodology, including its hierarchy of data sources and data quality assurance procedures, went through peer and public review. Therefore, we disagree with the commenter that there was no

[124] Fradkin, L., R.J.. Bruins, C.H. Cleverly, 1988. ''Assessing the risk of incinerating municipal solid waste: The development and application of a methodology''. *Municipal Waste Combustion and Human Health*. CRC Press. Palm Beach, Florida.

[125] USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Section 2.4.

quality control on the data in the data base. Moreover, commenting on the basic structure of the WMPT methodology, beyond its applicability to the current application, is beyond the scope of this peer review.

Comment: Very conservative assumptions are employed in the assessment process (e.g., the use of anaerobic sediment degradation half-lifes as a measure of the chemicals environmental persistence).

Response: We believe it is appropriate to make reasonably conservative assumptions considering that the ECF would be burned under a conditional exclusion absent a RCRA Part B permit and the regulatory oversight typical for a RCRA hazardous waste combustor.

Comment: When applying the model to any particular use or situation, consideration must be given to exposure potential and to the data used to estimate exposure potential.

Response: As we discuss in Part Two, Section III, of the preamble, our hazard ranking effort was not a full quantitative risk assessment, but rather a screening-level ranking of hazardous compounds based on potential chronic (i.e., long-term) risks to human health and the environment. As such, we consider it appropriate to apply the WMPT's use of a small number of relatively simple measures (i.e. combination of bioaccumulation and persistence factors) to represent the exposure potential of each chemical.

Comment: No scientific basis is provided for why ecological toxicity data were not considered in the evaluation process. The WMPT requires information on both human and ecological toxicity concerns. As implemented here, only human concerns were considered.

Response: In developing the WMPT, the Agency decided to collect the toxicity data in phases, beginning with human toxicity. In Phase 2, we would collect ecological toxicity data only for those constituents which a high toxicity score might elevate to a different category. However, as a result of the human toxicity data collected in Phase 1, we found that in no instance would a high ecological toxicity score alter a chemical's score sufficiently to elevate the chemical into a category for which we recommend action.

Therefore, we disagree with the opinion that only human toxicity concerns were considered. As detailed in the technical support document, [126] some, but not all, of the 37 constituents are found in the WMPT chemical data base. We retained the eco-toxicity data (and scores) for those chemicals already in the data base. For those chemicals not already in the WMPT data base, high eco-toxicity subscores would not have had a meaningful impact on the final scores.

Comment: The justification for acrolein's ''special characterization'' is unclear. Acrolein's inhalation toxicity and its proclivity to accumulate in body tissues (i.e. bioaccumulation score) are unrelated.

Response: We have clarified our explanation for assigning acrolein to hazard Category B—moderate relative hazard—to explain that our concern is that acrolein's human toxicity is based on the inhalation pathway and that acrolein has the highest possible WMPT score (three) for toxicity. See discussion in Part Two, Section III of the preamble.

Comment: There are several potential issues with the way different health and ecotoxicological endpoints are scored. The authors of the WMPT appear to have relied on expert judgment to select consistent levels of concern within a particular endpoint, but the background document says little about comparison or weighting of different endpoints.

Response: As mentioned above, while the Agency appreciates this comment, it is beyond the scope of this peer review.

Comment: A basic limitation of the WMPT approach is the exclusion from the rankings of any consideration of the dose likely to be involved in practical exposure situations.

Response: The WMPT ranking procedure is not a full quantitative risk assessment, but rather a screening-level ranking of hazardous compounds based on potential chronic (i.e., long-term) risks to human health and the environment. As such, we consider it appropriate to make reasonably conservative assumptions, as opposed to the consideration of the dose likely to be involved in practical exposure situations.

Comment: There is no explicit statement that the tables used in this application have been checked against the latest iterations of the various references.

Response: In the technical support document section titled ''Updating/Collecting Constituent-Specific Data,'' we explain that some, but not all the 37 comparable fuel constituents are found in the WMPT chemical data base.[127] For those constituents found in the data base, we updated the data and re-evaluated each chemical to determine if their WMPT scores changed with more up-to-date data.

Comment: The use of an inclusive category of ''Polycyclic Aromatic Compounds'' (PACs) with a single level of concern to deal with the evaluation of various carcinogenic polycyclic aromatic hydrocarbons and related compounds is appropriate for a screening tool and protective of public health, but there is some lack of clarity as to what compounds are included.

Response: All of the hydrocarbons listed in Table 1 to § 261.38, except benzene, naphthalene, and toluene, are PAHs.

Comment: Placing benzene in the second tier of concern (i.e., hazard Category B) is logical given the premise, with the following exceptions. This carcinogen is potentially present in ''exemptible'' fuels at a rather substantial level, thus offsetting its lower potency. Also, combustion of aromatics may under some circumstances lead to high concentrations of PAHs in the emissions. In addition, carcinogenesis is a severe endpoint and a subject of greater public concern than most other health outcomes. Benzene is one of the relatively few, and thus notorious, ''Known Human Carcinogens'' according to U.S. EPA and IARC. The level of concern (and thus, severity of restriction) should be considered at least equivalent to naphthalene, and thus benzene should be in hazard Category A.

Response: We have clarified our rationale for assigning benzene to hazard Category B. See discussion in Part Two, Section III, of the preamble.

Comment: The ranking of acrolein is appropriate, but it is odd that this material is variously described as a fuel constituent, rather than a combustion by-product.

Response: The scope of this peer review pertained to our hazard ranking procedure for the hydrocarbon and oxygenate constituents of ECF listed in Table 1 to § 261.38.

Comment: The use of measured and predicted data yield an inconsistent bioaccumulation ranking across PAHs. It would seem more appropriate to use the measured data to ensure a consistent assessment. Nevertheless, the proposed methodology is relatively robust and such refinements are not likely to impact the overall hazard ranking and resulting conclusions derived from the present analysis.

Response: The agency acknowledges the reviewer's comment. We consider it appropriate to consistently apply the

[126] USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Section 2.4.

[127] USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007, Section 2.4.

WMPT methodology across all 37 constituents.

Part Three: State Authority

I. Applicability of the Rule in Authorized States

EPA would strongly encourage states to adopt the regulations being proposed today. Under section 3006 of RCRA, EPA may authorize qualified states to administer their own hazardous waste programs in lieu of the federal program within the state. When EPA authorizes a state to implement the RCRA hazardous waste program, EPA determines whether the state program is consistent with the federal program, and whether it is no less stringent. This process, codified in 40 CFR 271, ensures national consistency and minimum standards, while providing flexibility to states in implementing rules. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized states have primary enforcement responsibility. In making this determination, EPA evaluates the state requirements to ensure they are no less stringent than the federal requirements.

Prior to enactment of the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final RCRA authorization administered its hazardous waste program entirely in lieu of EPA administering the federal program in that state. The federal requirements no longer applied in the authorized state, and EPA could not issue permits for any facilities in that state, since only the state was authorized to issue RCRA permits. When new, more stringent federal requirements were promulgated, the state was obligated to enact equivalent authorities within specified time frames. However, the new federal requirements did not take effect in an authorized state until the state adopted the federal requirements as state law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), which was added by HSWA, new requirements and prohibitions imposed under HSWA authority take effect in authorized states at the same time that they take effect in unauthorized states. EPA is directed by the statute to implement these requirements and prohibitions in authorized states, including the issuance of permits, until the state is granted authorization to do so. While states must still adopt HSWA related provisions as state law to retain final authorization, EPA implements the HSWA provisions in authorized states until the states do so.

RCRA section 3009 allows the states to impose standards more stringent than those in the federal program (see also 40 CFR 271.1). Therefore, authorized states are required to modify their programs only when EPA enacts federal requirements that are more stringent or broader in scope than existing federal requirements. Authorized states may, but are not required to, adopt federal regulations that are considered less stringent than previous federal regulations. Because today's rule would eliminate specific requirements for materials that are currently managed as hazardous waste, state programs would no longer need to include those specific requirements in order to be consistent with EPA's regulations, when and if today's rule is finalized.

II. Effect on State Authorization

Today's notice proposes regulations that would not be promulgated under the authority of HSWA. Thus, the standards proposed today would be applicable on the effective date only in those States that do not have final RCRA authorization. Moreover, authorized States are required to modify their program only when EPA promulgates Federal regulations that are more stringent or broader in scope than the authorized State regulations. For those changes that are less stringent or reduce the scope of the Federal program, States are not required to modify their program. This is a result of section 3009 of RCRA, which allows States to impose more stringent regulations than the Federal program. Today's proposal is considered to be less stringent than the current standards. Therefore, authorized States would not be required to modify their programs to adopt regulations consistent with and equivalent to today's proposed standards, although EPA would encourage States to do so.

Some states incorporate the federal regulations by reference or have specific state statutory requirements that their state program can be no more stringent than the federal regulations. In those cases, EPA anticipates that the exclusions in today's proposal, when and if finalized, would be adopted by these states, consistent with state laws and state administrative procedures, unless they take explicit action as specified by their respective state laws to decline the proposed revisions.

Part Four: Costs and Benefits of the Proposed Rule

I. Introduction

The value of any regulatory action is traditionally measured by the net change in social welfare that it generates. The Agency's economic assessment conducted in support of today's proposed action evaluates costs, cost savings (benefits), waste quantities affected, and other impacts, such as environmental justice, children's health, unfunded mandates, regulatory takings, and small entity impacts. To conduct this analysis, we prepared a baseline characterization for ECF, developed and implemented a methodology for examining impacts, and followed appropriate guidelines and procedures for examining equity considerations, children's health, and other impacts. Because EPA's data were limited, the estimated findings from these analyses should be viewed as national, not site-specific impacts.

II. Baseline Specification

Proper baseline specification is vital to the accurate assessment of incremental costs, benefits, and other economic impacts associated with a rule that would expand the exclusion for waste fuels. The baseline essentially describes the world absent any expanded exclusion. The incremental impacts of today's action are evaluated by predicting post-rule responses with respect to baseline conditions and actions. The baseline, as applied in this analysis, is assumed to be the point at which the proposal is published. A full discussion of baseline specification is presented in the Assessment [128] document completed for this action.

III. Analytical Methodology, Primary Data Sources, and Key Assumptions

We developed a simplified four-step approach for assessing the cost and economic impacts associated with this action. First, we identified all potentially eligible waste streams currently generated in the U.S. We next determined the tonnage of waste that is likely to qualify for the proposed exclusion. An economic threshold analysis was next applied to the likely eligible waste to determine which facilities could be expected to benefit from the exclusion. For example, for a generator with an eligible nonhazardous boiler on-site, the model assumes that the facility will use the exclusion if the total benefits (cost savings) realized by the generator are projected to exceed the total costs incurred to take advantage of the exclusion. Finally, we aggregated all facilities that are likely to use the exclusion to derive estimates for total

[128] Assessment of the Potential Costs, Benefits, and Other Impacts of the Expansion of the RCRA Comparable Fuel Exclusion-Proposed Rule, June 2007.

costs, cost savings, and economic impacts (waste quantities affected).

The analytical model for this analysis derives both cost savings and costs associated with the exclusion. Cost savings include: Fuel cost savings (net of baseline fuel recovery), avoided hazardous waste management costs, transportation cost savings, tracking cost savings, and storage cost savings. These factors may be considered economic benefits of the proposed action. The model also assesses relevant costs of the exclusion. These are: Burner storage costs, boiler retrofit costs, waste stream analytical costs, raw materials replacement cost (related to waste that is recycled in the baseline), recordkeeping costs, and transport costs.

The net social benefits are calculated as the difference between the social benefits (cost savings) and social costs. The total net social benefits of the proposed rule are then calculated by aggregating the net social impacts associated with each facility expected to use the exclusion. Impacts to human health and the environment are assumed to be unchanged and are therefore not included in our monetized assessment.

The primary data sources used in this analysis are the 2003 Biennial Report (2003 BR) [129], the 1996 National Hazardous Waste Constituent Survey (NHWCS),[130] the 2002 National Emissions Inventory (NEI),[131] ACC Survey data,[132] and information provided in the engineering analysis developed by EERGC. The 2003 BR data were used to derive the potentially eligible waste streams currently generated in the U.S. This is the only national database available for this use that has been reviewed by the Agency to ensure data quality. The 1996 NHWCS reflects dated information, but was the only quality controlled data source available that provided the necessary waste constituent information on a nationwide basis, across all industries. The NEI data were used to make a determination of whether an eligible boiler is located at each facility. The EERGC engineering analysis provided all necessary engineering cost information.[133]

Data limitations have required us to apply several assumptions in our analysis. The most critical assumptions are:

- The ECF is assumed to be burned in nonhazardous waste boilers that meet the conditions of the exclusion.
- The ECF is assumed to have an average heating value of 12,200 Btu/lb. This is based on our assessment of the National Hazardous Waste Constituent Survey.
- That a facility that can use the exclusion, and has a nonhazardous waste boiler on-site that could burn ECF, would burn the fuel on-site rather than sending it off-site.
- The number of facilities purchasing ECF is assumed to equal the number of generating facilities expected to send their ECF off-site.
- That all ECF generated in a particular state would be shipped the same distance. Average shipment distances for each state are derived from hazardous waste shipped off-site, as reported in the 2003 BRS.

IV. Key Analytical Limitations

Our primary analytical limitations are associated with our estimate of the availability of on-site boilers, and our estimate of ECF qualifying for the exclusion. Nationwide data were not available to indicate whether each affected generating facility has a boiler on-site that can burn ECF. Using the National Emissions Inventory (NEI) data, we made a determination of whether an eligible boiler is located at each facility. This determination may misrepresent which boilers could burn ECF and which boilers could not. To estimate how much waste qualifies as ECF, we used the ACC survey data, and data derived from the NHWCS. The data presented in the NHWCS are the most comprehensive nationwide data available. However, these data are from 1993, and may not fully reflect the characteristics of today's waste streams.

V. Findings

This rule, as proposed, is projected to result in a benefit to society in the form of net cost savings to the private sector, on a nationwide basis, thereby allowing for the more efficient use of limited resources elsewhere in the market. This is accomplished without compromising protection of human health and the environment by ensuring comparable emissions from the burning of high Btu value waste.

The total net social benefits projected as a result of this rule, as proposed, are estimated at approximately $23 million per year. Avoided management and fuel costs represent the vast majority of all benefits (cost savings). Transportation, boiler retrofits, and analytical costs represent the majority of the costs. This estimate assumes all States adopt the rule, and incorporates all cost savings to affected generators, less all associated costs. Nearly 183,000 tons (U.S.) of waste are expected to initially qualify for the exclusion with approximately 107,000 tons/year actually excluded. Of this total, we estimate that approximately 34,000 tons are not currently burned for energy recovery.

We also analyzed various scenarios under the two primary regulatory options for the storage of ECF considered by the Agency. Annual net social benefits under the first option were found to be $603,000 to $1,396,000 greater than the net benefits of our proposed approach. The additional cost savings reflect reduced storage requirements. In addition, this scenario assumes that the specification for naphthalene and PAHs would not apply, which would increase the percentage of waste qualifying for the exclusion. Under the second option, annual net social benefits were found to range from $15 million to $20 million per year. These reduced savings largely reflect additional RCRA Subtitle C storage and tracking requirements. Furthermore, this option assumes that generating facilities would not send any of their ECF offsite. This assumption results in a significant reduction in annual fuel cost savings and avoided management costs.

We believe that it is important to not only understand the change in economic efficiency, as presented above, but to also understand the primary distributional effects associated with this change. Hazardous waste commercial incinerators and cement kilns are projected to experience negative distributional impacts associated with this action. These effects include revenue losses for both groups, plus fuel replacement costs for commercial kilns. Revenue losses to commercial incinerators are estimated at $3 million/year, while commercial kilns may experience combined revenue and fuel replacement losses of approximately $13.5 million per year. These impacts represent between one and 1.7 percent of the total estimated annual gross revenues for these sectors. Although impacts to these groups may be considered a cost in accounting

[129] U.S. EPA, 2003 National Biennial Report, database and supporting documentation available for download at *http://www.epa.gov/epaoswer/hazwaste/data/biennialreport/*.

[130] U.S. EPA, National Hazardous Waste Constituent Survey, database and supporting documentation available for download at *http://www.epa.gov/epaoswer/hazwaste/id/hwirwste/economic.html*.

[131] U.S. EPA, 2002 National Emissions Inventory, databases and supporting documentation available for download at *http://www.epa.gov/ttn/chief/net/2002inventory.html*.

[132] American Chemistry Council (ACC) voluntary membership survey of waste generation and management.

[133] USEPA, ''Draft Technical Support Document for Expansion of the Comparable Fuel Exclusion,'' May 2007.

terms, they do not represent a real resource cost of the proposed rule. The actual net benefits of this proposal reflect the impacts to these groups to the extent that there are real resource impacts, but do not include transfers from one facility to another.

The findings presented here reflect numerous analytical assumptions and limitations. Furthermore, we have analyzed additional scenarios and sensitivity analyses that are not presented in this Preamble. The reader is strongly encouraged to read the *Assessment* document prepared in support of this proposal to gain a full understanding of all findings, analytical assumptions, limitations, and how the adjustment of selected key parameters may influence the findings.

Part Five: Statutory and Executive Order Reviews

I. Executive Order 12866: Regulatory Planning and Review

Under Executive Order (EO) 12866 (58 FR 51735, October 4, 1993), this action is a ''significant regulatory action.'' This action may raise novel legal or policy issues [3(f)(4)] due to our determination of Emission-Comparable Fuel (ECF), as applied in this proposed rulemaking. Accordingly, EPA submitted this action to the Office of Management and Budget (OMB) for review under EO 12866. Any changes made in response to OMB recommendations have been documented in the docket for this action.

This rule, as proposed, is projected to result in benefits to society in the form of cost savings. The total net cost savings are estimated at $23 million per year. This figure is significantly below the $100 million threshold [134] established under part 3(f)(1) of the Order. Thus, this proposal is not considered to be an economically significant action. However, in an effort to comply with the spirit of the Order, we have prepared an economic assessment in support of today's proposal. This document is entitled: *Assessment of the Potential Costs, Benefits, and Other Impacts of the Expansion of the RCRA Comparable Fuel Exclusion-Proposed Rule*, June 2007. The RCRA docket established for today's rulemaking maintains a copy of this *Assessment* for public review. Interested persons are encouraged to read and comment on this document.

[134] This $100 million threshold applies to both costs, and cost savings.

II. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act,* 44 U.S.C. 3501 *et seq.* The Information Collection Request (ICR) document prepared by EPA has been assigned EPA ICR number 1361.11.

Today's proposed rule is deregulatory. The respondents generating and burning excluded emission-comparable fuel would be subject to an annual public reporting and recordkeeping burden for the collection of information required under this proposed rule of 75,284 hours, and a cost of $4,071,341. However, because the excluded fuel would no longer be considered hazardous waste, the generator would not be required to comply with the paperwork, reporting, and recordkeeping requirements for hazardous wastes under RCRA. Therefore, the reporting and recordkeeping burden reduction associated with the reduced requirements for emission-comparable fuel would result in a net annual burden reduction of 21,206 hours and savings of $3,186,590 in capital and operation and maintenance costs.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, 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, verifying, processing, maintaining, disclosing and providing information; adjust 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 are listed in 40 CFR Part 9.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for this proposed rule, which includes this ICR, under Docket ID number EPA–HQ–RCRA–2005–0017. Submit any comments related to the ICR for this proposed rule to EPA and OMB. See **ADDRESSES** section at the beginning of this notice for where to submit comments to EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, Attention: Desk Office for EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after June 15, 2007, a comment to OMB is best assured of having its full effect if OMB receives it by July 16, 2007. The Agency will respond to any public comments on the information collection requirements contained in this proposal in the final rule.

III. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601 *et seq.,* generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act, or any other statute. This analysis must be completed unless the agency is able to certify that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions.

The RFA provides default definitions for each type of small entity. Small entities are defined as: (1) A small business as defined by the Small Business Administration's (SBA) regulations 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 proposal on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. In determining whether a rule has a significant economic impact on a substantial number of small entities, the impact of concern is any significant adverse economic impact on small entities, since the primary purpose of the regulatory flexibility analyses is to identify and address regulatory alternatives ''which minimize any significant economic impact of the rule on small entities.'' 5 U.S.C. 603 and 604. Thus, an agency may certify that a rule

will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, or otherwise has a positive economic effect on all of the small entities subject to the rule. We have determined that the affected ECF generators are not owned by small governmental jurisdictions or nonprofit organizations. Therefore, only small businesses were analyzed for small entity impacts. For the purposes of the impact analyses, small entity is defined either by the number of employees or by the dollar amount of sales. The level at which a business is considered small is determined for each North American Industrial Classification System (NAICS) code by the Small Business Administration.

This rule, as proposed, is projected to result in benefits in the form of cost savings to facilities that use the exclusion. As a result, the rule would not result in adverse impacts for any small businesses that generate ECF. The reader is encouraged to review our regulatory flexibility screening analysis prepared in support of this determination. This analysis is incorporated in the *Assessment* document, which is available in the docket to today's proposal. We continue to be interested in the potential impacts of the proposed rule on small entities and welcome comments on issues related to such impacts.

IV. Unfunded Mandates Reform Act of 1995

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 one 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. In addition, 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.

Today's proposal contains no Federal mandates (under the regulatory provisions of Title II of the UMRA) for State, local, or tribal governments or the private sector. The UMRA generally excludes from the definition of ''Federal intergovernmental mandate'' duties that arise from participation in a voluntary federal program. This rule, as proposed, may be considered a voluntary program because the States are not required to adopt these requirements.

In any event, EPA has determined that this rule, as proposed, does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. The total net benefits (cost savings) of this action are estimated to be $23 million per year.

EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. Small governments are not affected by this action, as proposed.

V. 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.''

This proposed rule 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. The proposed rule focuses on modified requirements for facilities generating ECF, without affecting the relationships between Federal and State governments. Thus, Executive Order 13132 does not apply to this rule.

Although section 6 of Executive Order 13132 does not apply to this proposed rule, EPA did consult with representatives of state governments in developing it. Representatives from the States of North Carolina, Georgia, Missouri, Louisiana, and Oregon provided valuable input and review.

In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicits comment on this proposed rule from State and local officials.

VI. 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.'' This proposed rule does not have tribal implications, as specified in Executive Order 13175. No Tribal governments are known to own or operate hazardous waste generating facilities that generate ECF subject to this proposal. Thus, Executive Order 13175 does not apply to this proposed rule.

VII. EO 13045 ''Protection of Children From Environmental Health Risks and Safety Risks''

EO 13045 ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be ''economically significant'' as defined under EO 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, the Agency 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 the Agency.

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

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

This rule is not a ''significant energy action'' as defined in Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355 (May 22, 2001)) because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

This rule, as proposed, will not seriously disrupt energy supply, distribution patterns, prices, imports or exports. Furthermore, this proposed rule is designed to improve economic efficiency by expanding the use of ECF.

IX. National Technology Transfer Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Public Law 104–113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This proposed rulemaking involves environmental monitoring or measurement. Consistent with the Agency's Performance Based Measurement System (''PBMS''), EPA proposes not to require the use of specific, prescribed analytic methods. Rather, the Agency plans to allow the use of any method that meets the prescribed performance criteria. The PBMS approach is intended to be more flexible and cost-effective for the regulated community; it is also intended to encourage innovation in analytical technology and improved data quality. EPA is not precluding the use of any method, whether it constitutes a voluntary consensus standard or not, as long as it meets the performance criteria specified.

EPA welcomes comments on this aspect of the proposed rulemaking and, specifically, invites the public to identify potentially-applicable voluntary consensus standards and to explain why such standards should be used in this regulation.

X. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order (EO) 12898 (59 FR 7629 (Feb. 16, 1994)) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has determined that this proposed rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not affect the level of protection provided to human health or the environment. This proposal is designed to allow for the use of waste as fuel under emission comparable standards, resulting in no increased risk to human health and the environment, when compared to the burning of fossil fuels.

List of Subjects in 40 CFR Part 261

Hazardous waste, Recycling, Reporting and recordkeeping requirements.

Dated: May 31, 2007.

Stephen L. Johnson,

Administrator.

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

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

2. Section 261.4 is amended by revising paragraph (a)(16) to read as follows:

§ 261.4 Exclusions.

(a) * * *

(16) Comparable fuels, emission-comparable fuels, or comparable syngas fuels that meet the requirements of § 261.38.

* * * * *

3. Section 261.38 is revised to read as follows:

§ 261.38 Exclusion of comparable fuel, emission-comparable fuel, and syngas fuel.

(a) *Specifications for excluded fuels.* Wastes that meet the specifications for comparable fuel, emission-comparable fuel, or syngas fuel under paragraphs (a)(1), (a)(2), or (a)(3) of this section, respectively, and the other requirements of this section, are not solid wastes.

(1) *Comparable fuel specifications.*—(i) *Physical specifications.*—(A) *Heating value.* The heating value must exceed 5,000 BTU/lbs. (11,500 J/g).

(B) *Viscosity.* The viscosity must not exceed: 50 cs, as-fired.

(ii) *Constituent specifications.* For compounds listed in Table 1 to this section the specification levels and, where non-detect is the specification, minimum required detection limits are: (see Table 1 of this section).

(2) *Emission-comparable fuel specifications*—(i) *Physical specifications.*—(A) *Heating value.* The heating value must exceed 5,000 BTU/lbs (11,500 J/g).

(B) *Viscosity.* The viscosity must not exceed 50 cSt, as-fired.

(ii) *Constituent specifications*—(A) Except as provided by paragraph (a)(2)(ii)(B) of this section, for compounds listed in Table 1 of this section the specification levels and, where nondetect is the specification, minimum required detection limits are: (see Table 1).

(B) *Waived specifications.* The specification levels in Table 1 to this section do not apply for the following hydrocarbons and oxygenates under the special conditions provided under this section for emission-comparable fuel:

(*1*) Benzene (CAS No. 71–43–2).

(*2*) Toluene (CAS No. 108–88–3).

(*3*) Acetophenone (CAS No. 98–86–2).

(*4*) Acrolein (CAS No. 107–02–8).

(*5*) Allyl alcohol (CAS No. 107–18–6).

(*6*) Bis(2-ethylhexyl)phthalate [Di-2-ethylhexyl phthalate] (CAS No. 117–81–7).

(*7*) Butyl benzyl phthalate (CAS No. 85–68–7).

(*8*) o-Cresol [2-Methyl phenol] (CAS No. 95–48–7).

(*9*) m-Cresol [3-Methyl phenol] (CAS No. 108–39–4).

(*10*) p-Cresol [4-Methyl phenol] (CAS No. 106–44–5).

(*11*) Di-n-butyl phthalate (CAS No. 84–74–2).

(*12*) Diethyl phthalate (CAS No. 84–66–2).

(*13*) 2,4-Dimethylphenol (CAS No. 105–67–9).

(*14*) Dimethyl phthalate (CAS No. 131–11–3).

(*15*) Di-n-octyl phthalate (CAS No. 117–84–0).

(*16*) Endothall (CAS No. 145–73–3).

(*17*) Ethyl methacrylate (CAS No. 97–63–2).

(*18*) 2-Ethoxyethanol [Ethylene glycol monoethyl ether] (CAS No. 110–80–5).

(*19*) Isobutyl alcohol (CAS No. 78–83–1).

(*20*) Isosafrole (CAS No. 120–58–1).

(*21*) Methyl ethyl ketone [2-Butanone] (CAS No. 78–93–3).

(*22*) Methyl methacrylate (CAS No. 80–62–6).

(*23*) 1,4-Naphthoquinone (CAS No. 130–15–4).

(*24*) Phenol (CAS No. 108–95–2).

(*25*) Propargyl alcohol [2-Propyn-1-ol] (CAS No. 107–19–7).

(*26*) Safrole (CAS No. 94–59–7); or

(3) *Synthesis gas fuel specifications.*—Synthesis gas fuel (i.e., syngas fuel) that is generated from hazardous waste must:

(i) Have a minimum Btu value of 100 Btu/Scf;

(ii) Contain less than 1 ppmv of total halogen;

(iii) Contain less than 300 ppmv of total nitrogen other than diatomic nitrogen (N_2);

(iv) Contain less than 200 ppmv of hydrogen sulfide; and

(v) Contain less than 1 ppmv of each hazardous constituent in the target list of appendix VIII constituents of this part.

(4) *Blending to meet the specifications for comparable fuel or emission-comparable fuel.* Hazardous waste shall not be blended to meet the specification under paragraphs (a)(1) or (a)(2) of this section, except as follows:

(i) *Blending to meet the viscosity specification.* A hazardous waste blended to meet the viscosity specification for comparable fuel or emission-comparable fuel shall:

(A) As generated and prior to any blending, manipulation, or processing, meet the constituent and heating value specifications of paragraphs (a)(1)(i)(A) and (a)(1)(ii) of this section for comparable fuel, and, for emission-comparable fuel, the specifications of paragraphs (a)(2)(i)(A) and (a)(2)(ii) of this section;

(B) Be blended at a facility that is subject to the applicable requirements of parts 264 and 265, or § 262.34 of this chapter; and

(C) Not violate the dilution prohibition of paragraph (a)(7) of this section.

(ii) *Blending emission-comparable fuel to meet the 8,000 Btu/lb, as-fired condition.* Emission-comparable fuel may be blended with other fuels to meet the 8,000 Btu/lb, as-fired, condition of paragraph (c)(2)(ii)(B) of this section.

(5) *Treatment to meet the comparable fuel or emission-comparable fuel specifications.* (i) A hazardous waste may be treated to meet the specifications of paragraphs (a)(1) or (a)(2) of this section provided the treatment:

(A) Destroys or removes the constituent listed in the specification or raises the heating value by removing or destroying hazardous constituents or materials;

(B) Is performed at a facility that is subject to the applicable requirements of parts 264 and 265, or § 262.34 of this chapter; and

(C) Does not violate the dilution prohibition of paragraph (a)(7) of this section.

(ii) Residuals resulting from the treatment of a hazardous waste listed in subpart D of this part to generate a comparable fuel remain a hazardous waste.

(6) *Generation of a syngas fuel.* (i) A syngas fuel can be generated from the processing of hazardous wastes to meet the exclusion specifications of paragraph (a)(3) of this section provided the processing:

(A) Destroys or removes the constituent listed in the specification or raises the heating value by removing or destroying constituents or materials;

(B) Is performed at a facility that is subject to the applicable requirements of parts 264 and 265, or § 262.34 of this chapter or is an exempt recycling unit pursuant to § 261.6(c); and

(C) Does not violate the dilution prohibition of paragraph (a)(7) of this section.

(ii) Residuals resulting from the treatment of a hazardous waste listed in subpart D of this part to generate a syngas fuel remain a hazardous waste.

(7) *Dilution prohibition for comparable fuel, emission-comparable fuel, and syngas fuel.* No generator, transporter, handler, or owner or operator of a treatment, storage, or disposal facility shall in any way dilute a hazardous waste to meet the specifications of paragraphs (a)(1)(i)(A) or (a)(1)(ii) of this section for comparable fuel, or (a)(2)(i)(A) and (a)(2)(ii) of this section for emission-comparable fuel, or (a)(3) of this section for syngas.

(b) *Implementation*—(1) *General.* (i) Wastes that meet the specifications provided by paragraph (a) of this section for comparable fuel, emission-comparable fuel, or syngas fuel are excluded from the definition of solid waste provided that the conditions under this section are met. For purposes of this section, such wastes are called excluded fuel, and the person claiming and qualifying for the exclusion is called the excluded fuel generator and the person burning the excluded fuel is called the excluded fuel burner.

(ii) The person who generates the excluded fuel must claim the exclusion by compliance with the conditions of this section and keep records necessary to document compliance with those conditions.

(2) *Notices*—(i) *Notices to state RCRA and CAA Directors in authorized states or regional RCRA and CAA Directors in unauthorized states.* The generator must submit a one-time notice to the Regional or State RCRA and CAA Directors, in whose jurisdiction the exclusion is being claimed and where the excluded fuel will be burned, certifying compliance with the conditions of the exclusion and providing the following documentation:

(A) The name, address, and RCRA ID number of the person/facility claiming the exclusion;

(B) The applicable EPA Hazardous Waste Codes for the hazardous waste;

(C) The name and address of the units meeting the requirements of paragraphs (b)(3) and (c) of this section, that will burn the excluded fuel;

(D) An estimate of the average and maximum monthly and annual quantity of waste for which an exclusion would be claimed; and

(E) The following statement, which shall be signed and submitted by the person claiming the exclusion or his authorized representative:

> Under penalty of criminal and civil prosecution for making or submitting false statements, representations, or omissions, I certify that the requirements of 40 CFR 261.38 have been met for all emission-comparable fuel/comparable fuel (specify which) identified in this notification. Copies of the records and information required at 40 CFR 261.38 are available at the generator's facility. Based on my inquiry of the individuals immediately responsible for obtaining the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

(ii) *Public notice.* Prior to burning an excluded fuel, the burner must publish in a major newspaper of general circulation local to the site where the fuel will be burned, a notice entitled ''Notification of Burning a Fuel Excluded Under the Resource Conservation and Recovery Act'' and containing the following information:

(A) Name, address, and RCRA ID number of the generating facility(ies);

(B) Name and address of the burner and identification of the unit(s) that will burn the excluded fuel;

(C) A brief, general description of the manufacturing, treatment, or other process generating the excluded fuel;

(D) An estimate of the average and maximum monthly and annual quantity of the excluded waste to be burned; and

(E) Name and mailing address of the Regional or State Directors to whom the generator submitted a claim for exclusion.

(3) *Burning*—(i) *Comparable fuel and syngas fuel.* The exclusion for fuels meeting the specifications under paragraphs (a)(1) or (a)(3) of this section applies only if the fuel is burned in the following units that also shall be subject to Federal/State/local air emission requirements, including all applicable CAA MACT requirements:

(A) Industrial furnaces as defined in § 260.10 of this chapter;

(B) Boilers, as defined in § 260.10 of this chapter, that are further defined as follows:

(*1*) Industrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes; or

(*2*) Utility boilers used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale;

(C) Hazardous waste incinerators subject to regulation under subpart O of parts 264 or 265 of this chapter or applicable CAA MACT standards.

(D) Gas turbines used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale.

(ii) *Emission-comparable fuel.* The exclusion for fuel meeting the specifications under paragraph (a)(2) of this section applies only if the fuel is burned under the conditions provided by paragraph (c) of this section.

(4) *Waste analysis plan for generators.* The generator of an excluded fuel shall develop and follow a written waste analysis plan which describes the procedures for sampling and analysis of the hazardous waste to be excluded. The plan shall be followed and retained at the facility excluding the waste.

(i) At a minimum, the plan must specify:

(A) The parameters for which each hazardous waste will be analyzed and the rationale for the selection of those parameters;

(B) The test methods which will be used to test for these parameters;

(C) The sampling method which will be used to obtain a representative sample of the waste to be analyzed;

(D) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date; and

(E) If process knowledge is used in the waste determination, any information prepared by the generator in making such determination.

(ii) For each analysis, the generator shall document the following:

(A) The dates and times that samples were obtained, and the dates the samples were analyzed;

(B) The names and qualifications of the person(s) who obtained the samples;

(C) A description of the temporal and spatial locations of the samples;

(D) The name and address of the laboratory facility at which analyses of the samples were performed;

(E) A description of the analytical methods used, including any clean-up and sample preparation methods;

(F) All quantitation limits achieved and all other quality control results for the analysis (including method blanks, duplicate analyses, matrix spikes, etc.), laboratory quality assurance data, and the description of any deviations from analytical methods written in the plan or from any other activity written in the plan which occurred;

(G) All laboratory results demonstrating whether the exclusion specifications have been met for the waste; and

(H) All laboratory documentation that support the analytical results, unless a contract between the claimant and the laboratory provides for the documentation to be maintained by the laboratory for the period specified in paragraph (b)(7) of this section and also provides for the availability of the documentation to the claimant upon request.

(iii) Syngas fuel generators shall submit for approval, prior to performing sampling, analysis, or any management of a syngas fuel as an excluded waste, a waste analysis plan containing the elements of paragraph (b)(3)(i) of this section to the appropriate regulatory authority. The approval of waste analysis plans must be stated in writing and received by the facility prior to sampling and analysis to demonstrate the exclusion of a syngas. The approval of the waste analysis plan may contain such provisions and conditions as the regulatory authority deems appropriate.

(5) *Analysis plans for burners of emission-comparable fuel.* An emission-comparable fuel burner is subject to the waste analysis plan requirements under paragraph (b)(4) of this section to determine the heating value of the fuel and the benzene and acrolein concentration of the fuel if:

(i) The burner has not received information from the generator for each shipment documenting the heating value of the fuel and the concentration of benzene and acrolein;

(ii) The burner blends or otherwise treats emission-comparable fuel to achieve the 8,000 Btu/lb, as-fired criterion under paragraph (c)(2)(ii)(B) of this section; or

(iii) The burner blends or otherwise treats emission-comparable fuel to achieve a concentration of benzene or acrolein of two percent or less, as-fired, to avoid the emission-comparable fuel firing rate restrictions of paragraph (c)(2)(ii)(I) of this section.

(6) *Excluded fuel sampling and analysis*—(i) *General.* For each waste (and syngas) for which an exclusion is claimed under the specifications provided by paragraphs (a)(1), (a)(2), or (a)(3) of this section, the generator of the hazardous waste/syngas must test for all the constituents in appendix VIII to this part, except those that the generator determines, based on testing or knowledge, should not be present in the waste/syngas, and, for emission-comparable fuel, except for the compounds listed in paragraph (a)(2)(ii)(B) of this section. The generator is required to document the basis of each determination that a constituent with an applicable specification should not be present. The generator may not determine that any of the following categories of constituents with an applicable specification should not be present:

(A) A constituent that triggered the toxicity characteristic for the waste constituents that were the basis of the listing of the waste stream, or constituents for which there is a treatment standard for the waste code in 40 CFR 268.40;

(B) A constituent detected in previous analysis of the waste/syngas;

(C) Constituents introduced into the process that generates the waste/syngas; or

(D) Constituents that are byproducts or side reactions to the process that generates the waste/syngas.

Note to paragraph (b)(6)(i): Any claim under this section must be valid and accurate for all hazardous constituents; a determination not to test for a hazardous constituent will not shield a generator from liability should that constituent later be found in the waste/syngas above the exclusion specifications.

(ii) For each waste for which the exclusion is claimed where the generator of the excluded fuel is not the original generator of the hazardous waste, the generator of the excluded fuel

may not use process knowledge pursuant to paragraph (b)(6)(i) of this section and must test to determine that all of the constituent specifications of paragraphs (a)(1) and (a)(2) of this section, as applicable, have been met.

(iii) The excluded fuel generator may use any reliable analytical method to demonstrate that no constituent of concern is present at concentrations above the specification levels. It is the responsibility of the generator to ensure that the sampling and analysis are unbiased, precise, and representative of the waste/syngas. For the waste/syngas to be eligible for exclusion, a generator must demonstrate that:

(A) The 95% upper confidence limit of the mean concentration for each constituent of concern is not above the specification level; and

(B) The analyses could have detected the presence of the constituent at or below the specification level.

(iv) Nothing in this paragraph preempts, overrides or otherwise negates the provision in § 262.11 of this chapter, which requires any person who generates a solid waste to determine if that waste is a hazardous waste.

(v) In an enforcement action, the burden of proof to establish conformance with the exclusion specification shall be on the generator claiming the exclusion.

(vi) The generator must conduct sampling and analysis in accordance with the waste analysis plan developed under paragraph (b)(4) of this section.

(vii) Excluded fuel that has not been blended to meet the kinematic viscosity specification shall be analyzed as generated.

(viii) If hazardous waste is blended to meet the kinematic viscosity specification, the generator shall:

(A) Analyze the waste as generated to ensure that it meets the constituent and heating value specifications, except that emission comparable fuel need not meet the 8,000 Btu/lb, as-fired heating value criterion of paragraph (a)(2)(i)(A) of this section; and

(B) After blending, analyze the fuel again to ensure that the blended fuel continues to meet all excluded fuel specifications.

(ix) Excluded fuel must be re-tested, at a minimum, annually and must be retested after a process change that could change the chemical or physical properties of the waste.

(x) If an emission-comparable fuel burner has not received information from the generator for each shipment documenting the heating value of the fuel and the concentration of benzene and acrolein, the burner must sample and analyze the fuel to determine the heating value and the concentration of benzene and acrolein.

(xi) If a burner blends or treats emission-comparable fuel to achieve an as-fired heating value of 8,000 Btu/lb or greater or an as-fired concentration of benzene or acrolein of two percent or lower, the burner shall determine the heating value, benzene concentration, or acrolein concentration, as relevant, by analysis or information from the generator prior to blending and must analyze the fuel after blending or treatment to determine the heating value, benzene concentration, or acrolein concentration, as relevant.

(7) *Speculative accumulation.* Excluded fuel must not be accumulated speculatively, as defined in § 261.1(c)(8).

(8) *Records.* The generator must maintain records of the following information on-site:

(i) All information required to be submitted to the implementing authority as part of the notification of the claim:

(A) The owner/operator name, address, and RCRA facility ID number of the person claiming the exclusion;

(B) The applicable EPA Hazardous Waste Codes for each hazardous waste excluded as a fuel; and

(C) The certification signed by the person claiming the exclusion or his authorized representative.

(ii) A brief description of the process that generated the hazardous waste and process that generated the excluded fuel, if not the same;

(iii) The monthly and annual quantities of each waste claimed to be excluded;

(iv) Documentation for any claim that a constituent is not present in the hazardous waste as required under paragraph (b)(6) of this section;

(v) The results of all analyses and all detection limits achieved as required under paragraph (b)(4) of this section;

(vi) If the excluded waste was generated through treatment or blending, documentation of compliance with the applicable provisions of paragraphs (a)(4) and (a)(5) of this section;

(vii) If the waste is to be shipped off-site, a certification from the burner as required under paragraph (b)(10) of this section;

(viii) The waste analysis plan and documentation of all sampling and analysis results as required by paragraph (b)(4) of this section; and

(ix) If the generator ships excluded fuel off-site for burning, the generator must retain for each shipment the following information on-site:

(A) The name and address of the facility receiving the excluded fuel for burning;

(B) The quantity of excluded fuel shipped and delivered;

(C) The date of shipment or delivery;

(D) A cross-reference to the record of excluded fuel analysis or other information used to make the determination that the excluded fuel meets the specifications as required under paragraph (b)(4) of this section; and

(E) A one-time certification by the burner as required under paragraph (b)(10) of this section.

(9) *Records retention.* Records must be maintained for a period of three years.

(10) *Burner certification*—(i) *Comparable fuel and syngas fuel.* Prior to submitting a notification to the State and Regional Directors, a generator of comparable fuel or syngas fuel excluded under paragraphs (a)(1) or (a)(3) of this section who intends to ship the excluded fuel off-site for burning must obtain a one-time written, signed statement from the burner:

(A) Certifying that the excluded fuel will only be burned in an industrial furnace, industrial boiler, utility boiler, or hazardous waste incinerator, as required under paragraph (b)(3) of this section;

(B) Identifying the name and address of the facility that will burn the excluded fuel; and

(C) Certifying that the state in which the burner is located is authorized to exclude wastes as excluded fuel under the provisions of this section.

(ii) *Emission-comparable fuel.* Prior to submitting a notification to the State and Regional Directors, a generator of emission-comparable fuel who intends to ship the excluded fuel off-site for burning must obtain a one-time written, signed statement from the burner:

(A) Certifying that the excluded fuel will be stored under the conditions of paragraph (c)(1) of this section and burned in a boiler under the conditions of paragraph (c)(2) of this section, and that the burner will comply with the notification, reporting, and recordkeeping conditions of paragraph (c)(4) of this section;

(B) Identifying the name and address of the facility that will burn the excluded fuel; and

(C) Certifying that the state in which the burner is located is authorized to exclude wastes as excluded fuel under the provisions of this section.

(11) *Ineligible waste codes.* Wastes that are listed because of presence of dioxins or furans, as set out in Appendix VII of this part, are not

eligible for this exclusion, and any fuel produced from or otherwise containing these wastes remains a hazardous waste subject to full RCRA hazardous waste management requirements.

(12) *Regulatory status of boiler residues.* Burning excluded fuel that was derived from a hazardous waste listed under §§ 261.31 through 261.33 does not subject boiler residues, including bottom ash and emission control residues, to regulation as derived-from hazardous waste.

(13) *Residues in containers and tank systems upon cessation of operations.* (i) Liquid and accumulated solid residues that remain in a container or tank system for more than 90 days after the container or tank system ceases to be operated for storage or transport of excluded fuel product are subject to regulation under parts 262 through 265, 268, 270, 271, and 124 of this chapter.

(ii) Liquid and accumulated solid residues that are removed from a container or tank system after the container or tank system ceases to be operated for storage or transport of excluded fuel product are solid wastes subject to regulation as hazardous waste if the waste exhibits a characteristic of hazardous waste under §§ 261.21 through 261.24 or if the emission-comparable fuel was derived from a hazardous waste listed under §§ 261.31 through 261.33 when the exclusion was claimed.

(14) *Waiver of RCRA Closure Requirements.* Interim status and permitted storage units, and generator storage units exempt from the permit requirements under § 262.34 of this chapter, are not subject to the closure requirements of 40 CFR Parts 264 and 265 provided that the storage units have been used to store only hazardous waste that is subsequently excluded under the conditions of this section, and that afterward will be used only to store fuel excluded under this section.

(15) *Spills and leaks.* Excluded fuel that is spilled or leaked and that therefore no longer meets the conditions of the exclusion is discarded and must be managed as a hazardous waste if it exhibits a characteristic of hazardous waste under §§ 261.21 through 261.24 or if it was derived from a hazardous waste listed in §§ 261.31 through 261.33 when the exclusion was claimed.

(16) Nothing in this section preempts, overrides, or otherwise negates the provisions in CERCLA Section 103, which establish reporting obligations for releases of hazardous substances, or the Department of Transportation requirements for hazardous materials in 49 CFR parts 171 through 180.

(c) *Special conditions for emission-comparable fuel.* The following additional conditions apply to emission-comparable fuel—fuel that meets the specifications under paragraph (a)(2) of this section.

(1) *Storage*—(i) *General.* Emission-comparable fuel may be stored in a tank, tank car, or tank truck only.

(ii) *Applicability.* Emission-comparable fuel tank systems that are not subject to the hazardous substance underground storage tank requirements under § 280.42(b) of this chapter are subject to the conditions of this paragraph.

(iii) *Spill prevention, control, and countermeasures (SPCC) requirements.* Emission-comparable fuel tank systems with a capacity greater than 55 gallons and that are not subject to 40 CFR Part 280 (Standards for Underground Storage Tanks) are subject to the following SPCC requirements adopted from 40 CFR Part 112. You must comply with the adopted conditions by substituting the term ''emission-comparable fuel'' for the term ''oil,'' and by substituting the term ''release of emission-comparable fuel to the environment'' for the term ''discharge as described in § 112.1(b).''

(A) Section 112.2, Definitions. These definitions apply to the adopted SPCC requirements under paragraph (c)(1)(iii)(B) through (c)(1)(iii)(D) of this section.

(B) Sections 112.3(d) and 112.3(e) of this chapter, Requirement to Prepare and Implement a Spill Prevention, Control, and Countermeasure Plan.

(*1*) You must prepare a Spill Prevention, Control, and Countermeasure Plan in writing, and in accordance with the adopted provisions of §§ 112.7 and 112.8 of this chapter;

(*2*) The SPCC Plan must be reviewed and certified according to the provisions of § 112.3(d) of this chapter and must be made available to the Regional Administrator according to the provisions of § 112.3(e) of this chapter;

(*3*) You must amend your SPCC Plan as directed by the Regional Administrator upon a finding that amendment is necessary to prevent and contain releases of emission-comparable fuel from your facility. You must implement the amended SPCC Plan as soon as possible, but not later than six months after you amend your SPCC Plan, unless the Regional Administrator specifies another date;

(C) Sections 112.5(a) and 112.5(b) of this chapter, Amendment of Spill Prevention, Control, and Countermeasures Plan by Owners or Operators.

(*1*) You must comply with the provisions of §§ 112.5(a) and 112.5(b) of this chapter by substituting the term ''release of emission-comparable fuel to the environment'' for the term ''discharge as described in § 112.1(b);''

(*2*) You must have a Professional Engineer certify any technical amendment to your Plan in accordance with § 112.3(d) of this chapter.

(D) Section 112.7 of this chapter, General Requirements for Spill Prevention, Control, and Countermeasure Plans.

(*1*) You must comply with the requirements of this section, except for paragraphs (a)(2), (c), (d), and (k) of this section.

(*2*) Your Plan may deviate from the requirements §§ 112.7(g), (h)(2), (h)(3) and (i), and the adopted provisions of § 112.8, where applicable to a specific facility, if you provide equivalent protection by some other means of spill prevention, control, or countermeasure. Where your Plan does not conform to the applicable requirements in §§ 112.7(g), (h)(2), (h)(3) and (i) and the adopted provisions of § 112.8 of this chapter, you must state the reasons for nonconformance in your Plan and describe in detail alternate methods and how you will achieve equivalent environmental protection. If the Regional Administrator determines that the measures described in your Plan do not provide equivalent environmental protection, he may require that you amend your Plan.

(E) Section 112.8 of this chapter, Spill Prevention, Control, and Countermeasure Plan Requirements for Onshore Facilities, except for paragraph (b) of this section (facility drainage), paragraph (c)(2) of this section (secondary containment for bulk storage containers), and paragraph (c)(11) of this section (secondary containment for mobile containers). In addition, § 112.8(d)(1) of this chapter applies to all buried piping irrespective of the installation or replacement date.

(iv) *Containment and detection of releases*—To prevent the release of emission comparable fuel or hazardous constituents to the environment, you must provide secondary containment for emission-comparable fuel tank systems as prescribed by the following requirements adopted from § 264.193 of this chapter. You must comply with the adopted conditions by substituting the term ''emission-comparable fuel'' for the term ''waste,'' and by substituting the term ''document in the record'' for the term ''demonstrate to the Regional Administrator.''

(A) Section 264.193(b) of this chapter, which prescribes general performance standards for secondary containment systems;

(B) Section 264.193(c) of this chapter, which prescribes minimum requirements for secondary containment systems;

(C) Section 264.193(d)(1) through (3), which prescribe permissible secondary containment devices;

(D) Section 264.193(e) of this chapter, which prescribes design and operating requirements for the permissible secondary containment devices; and

(E) Section 264.193(f) of this chapter, which prescribes secondary containment requirements for ancillary equipment.

(v) *Preparedness and prevention, emergency procedures and response to releases*—(A) *Preparedness and prevention*—(*1*) *Required equipment.* Your facility must be equipped with the equipment required under § 264.32(a) through (d) of this chapter in a manner that it can be used in emergencies associated with storing and handling emission-comparable fuel.

(*2*) *Testing and maintenance of equipment.* You must test and maintain as necessary to assure proper operation in times of emergency all communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment required for your emission-comparable fuel tank system.

(*3*) *Access to communications or alarm system.* Whenever emission-comparable fuel is distributed into or out of the tank system, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee.

(*4*) *Arrangements with local authorities.* You must comply with § 264.37(a) of this chapter. If State or local authorities decline to enter into the arrangements prescribed by § 264.37(a) of this chapter, you must keep a record documenting the refusal.

(B) *Emergency procedures*—(*1*) *Emergency coordinator.* At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's Spill Prevention, Control, and Countermeasures (SPCC) Plan required under paragraph (c)(1)(iii) of this section, all emission-comparable fuel operations and activities at the facility, the location and characteristics of emission-comparable fuel handled, the location of all records within the facility pertaining to emission-comparable fuel, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the SPCC Plan.

(*2*) *Emergency procedures.* (*i*) Whenever there is an imminent or actual emergency situation relating to the emission-comparable fuel tank system, the emergency coordinator (or his designee when the emergency coordinator is on call) must immediately activate internal facility alarms or communication systems, where applicable, to notify all facility personnel and notify appropriate State or local agencies with designated response roles if their help is needed.

(*ii*) Whenever there is a release, fire, or explosion relating to the emission-comparable fuel tank system, the emergency coordinator must immediately identify the character, exact source, amount, and aerial extent of any released materials. He may do this by observation or review of facility records, and, if necessary, by chemical analysis.

(*iii*) Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions).

(*iv*) If the emergency coordinator determines that the facility has had a release, fire, or explosion associated with the emission-comparable fuel tank system which could threaten human health, or the environment outside the facility, he must report his findings as provided by paragraph (c)(1)(v)(B)(*2*)(*v*) of this section.

(*v*) If the emergency coordinator's assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated, and he must immediately notify either the government official designated as the on-scene coordinator for that geographical area, (in the applicable regional contingency plan under part 1510 of this title) or the National Response Center (using their 24-hour toll free number 800/424–8802). The report must include: the name and telephone number of the reporter; the name and address of the facility; the time and type of incident (e.g., release, fire); the name and quantity of material(s) involved, to the extent known; the extent of injuries, if any; and the possible hazards to human health, or the environment, outside the facility.

(*vi*) During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other materials at the facility. These measures must include, where applicable, stopping processes and operations and collecting and containing released emission-comparable fuel.

(*vii*) If the emission-comparable fuel tank system stops operations in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

(*viii*) Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered emission-comparable fuel, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

(*ix*) The emergency coordinator must ensure that, in the affected area(s) of the facility: materials that may be incompatible with the released emission-comparable fuel is treated, stored, or disposed of until cleanup procedures are completed; and all emergency equipment listed in the SPCC Plan is cleaned and fit for its intended use before operations are resumed.

(*x*) You must note in the record the time, date, and details of any incident that requires implementing the SPCC Plan for the emission-comparable fuel tank system. Within 15 days after the incident, you must submit a written report on the incident to the Regional Administrator. The report must include: the name, address, and telephone number of the owner or operator; the name, address, and telephone number of the facility; the date, time, and type of incident (e.g., fire, explosion); the name and quantity of material(s) involved; the extent of injuries, if any; an assessment of actual or potential hazards to human health or the environment, where this is applicable; and the estimated quantity and disposition of recovered material that resulted from the incident.

(C) *Response to leaks or spills and disposition of leaking or unfit-for-use tank systems.* (*1*) You must comply with the provisions of § 264.196 of this chapter, except for §§ 264.196(e)(1) and (e)(4) of this chapter.

(*2*) To comply with the adopted provisions of § 264.196, you must

substitute the term ''emission-comparable fuel'' for the terms ''hazardous waste'' and ''waste;'' and the term ''record'' for the term ''operating record,'' and

(*3*) Unless you satisfy the requirements of §§ 264.196(e)(2) and (3) of this chapter, you must close the emission-comparable fuel tank system.

(vi) *Air emissions*—(A) *Applicability. (1)* If your emission-comparable fuel storage tank or transfer rack is not subject to the controls provided by § 63.2346 of this chapter, you must comply with the provisions of paragraphs (c)(1)(vi)(B) and (C) of this section:

(*2*) If your emission-comparable fuel storage tank is subject to the controls provided by § 63.2346 of this chapter other than those prescribed by item 6 in Table 2 to subpart EEEE, part 63 of this chapter (i.e., requirements for organic liquids with an annual average true vapor pressure of the total listed organic HAP >=76.6 kilopascals (11.1 psia)), you must determine whether the tank would be subject to the controls prescribed by item 6 after considering the vapor pressure of the RCRA oxygenates listed in paragraph (c)(1)(vi)(B)(*3*) of this section as well as the organic HAP listed in Table 1 to subpart EEEE, part 63 of this chapter. If the annual average true vapor pressure of the total RCRA oxygenates and Table 1 organic HAP in the emission-comparable fuel is >=76.6 kilopascals (11.1 psia), you are subject to the requirements of paragraphs (c)(1)(vi)(B) through (C) of this section.

(B) *Conditions of applicability.* When complying with the conditions under paragraph (c)(1)(vi)(C) of this section, you must:

(*1*) Comply with the conditions irrespective of whether your facility is an area source as defined by § 63.2 of this chapter.

(*2*) Comply with the conditions by substituting the term ''RCRA oxygenates as well as organic HAP'' for each occurrence of the term ''organic HAP;'' the term ''RCRA oxygenates as well as organic HAP listed in Table 1'' for each occurrence of the term ''organic HAP listed in Table 1;'' and the term ''RCRA oxygenates as well as Table 1 organic HAP'' for each occurrence of the term ''Table 1 organic HAP.''

(*3*) Comply with the conditions using the following definition of RCRA oxygenates: The term ''RCRA oxygenates'' means the following organic compounds:

(*i*) Allyl alcohol (CAS No. 107–18–6);

(*ii*) Bis(2-ethylhexyl)phthalate [Di-2-ethylhexyl phthalate] (CAS No. 117–81–7);

(*iii*) 2,4-Dimethylphenol (CAS No. 105–67–9);

(*iv*) Ethyl methacrylate (CAS No. 97–63–2);

(*v*) 2-Ethoxyethanol [Ethylene glycol monoethyl ether] (CAS No. 110–80–5);

(*vi*) Isobutyl alcohol (CAS No. 78–83–1);

(*vii*) Isosafrole (CAS No. 120–58–1);

(*viii*) Methyl ethyl ketone [2-Butanone] (CAS No. 78–93–3);

(*ix*) 1,4-Naphthoquinone (CAS No. 130–15–4);

(*x*) Propargyl alcohol [2-Propyn-1-ol] (CAS No. 107–19–7); and

(*xi*) Safrole (CAS No. 94–59–7).

(*4*) Comply with the conditions using the following definition of organic liquid. Organic liquid means emission comparable fuel that:

(*i*) Contains 5 percent by weight or greater of the RCRA oxygenates as well as organic HAP listed in Table 1 to this subpart, as determined using the procedures specified in § 63.2354(c) of this chapter; and

(*ii*) Has an annual average true vapor pressure of 0.7 kilopascals (0.1 psia) or greater.

(*5*) Comply with the conditions using the following definition of affected source. Affected source means the collection of activities and equipment used to distribute emission-comparable fuel into, out of, or within a facility.

(*6*) Comply with the conditions by substituting the term ''subject to § 261.38(c)(1)(vi)(C)of this chapter'' for the term ''subject to this subpart.''

(*7*) Comply with the storage tank controls in Table 2 to subpart EEEE, part 63 of this chapter as follows:

(*i*) If your tank has a capacity less than 18.9 cubic meters (5,000 gallons) and the annual average true vapor pressure of the total RCRA oxygenates and Table 1 organic HAP in the stored organic liquid is >=76.6 kilopascals (11.1 psia), you must comply with the requirements under item 1 of Table 2 to subpart EEEE, part 63 of this chapter, for existing sources or item 3 of that table for reconstructed or new sources; and

(*ii*) If your existing source tank has a capacity identified in item 1 of Table 2 to subpart EEEE, part 63 of this chapter, you must comply with the requirements of item 1.a.i or 1.a.ii of that table if the annual average true vapor pressure of the total RCRA oxygenates and Table 1 organic HAP in the stored organic liquid is >=5.2 kilopascals (0.75 psia) and <76.6 kilopascals (11.1 psia);

(*8*) Comply with the conditions if:

(*i*) Your tank or transfer rack is exempt from subpart EEEE, part 63 of this chapter, under the provisions of § 63.228(c)(1) of this chapter, which exempts tanks at facilities subject to a NESHAP other than subpart EEEE, part 63; and

(*ii*) The requirements applicable to the tank or transfer rank under the other NESHAP are not equivalent to, at a minimum, the conditions under paragraph (c)(1)(vi)(C) of this section. You must document and record your determination whether the requirements under the other NESHAP are less stringent than the conditions under paragraph (c)(1)(vi)(C) of this section. You may contact the RCRA regulatory authority to assist with this determination.

(*9*) Submit all notifications, reports, and other communications to the RCRA regulatory authority rather than the CAA regulatory authority.

(C) *Conditions to control air emissions.* (*1*) The affected source is the equipment identified under § 63.2338(b)(1) through (5) of this chapter, except for equipment identified in § 63.2338(c)(2) through (3) of this chapter.

(*2*) Definitions of new, reconstructed, and existing affected sources are provided under § 63.2338(d) through (f) of this chapter.

(*3*) You must comply with the emission limitations, operating limits, and work practice standards under § 63.2346 of this chapter.

(*4*) You must comply with the general requirements under § 63.2350 of this chapter. The startup, shutdown, and malfunction plan required by § 63.2350(c) of this chapter need not address equipment not subject to paragraph (c)(1)(vi)(C) of this section.

(*5*) You must comply with the performance tests, design evaluation, and performance evaluations requirements under § 63.2354 of this chapter. When complying with § 63.2354(c) of this chapter, however, you must determine the content of RCRA oxygenates as well as organic HAP in the emission-comparable fuel.

(*6*) You must conduct performance tests and other initial compliance demonstrations by the dates specified in § 63.2358 of this chapter.

(*7*) You must conduct subsequent performance tests by the dates specified in § 63.2362 of this chapter.

(*8*) You must comply with the monitoring, installation, operation, and maintenance requirements under § 63.2366 of this chapter.

(*9*) You must demonstrate initial compliance with the emission limitations, operating limits, and work practice standards as required under § 63.2370 of this chapter.

(*10*) You must monitor and collect data to demonstrate continuous

compliance and use the collected data as required by § 63.2374 of this chapter.

(*11*) You must demonstrate continuous compliance with the emission limitations, operating limits, and work practice standards as required by § 63.2378 of this chapter.

(*12*) You must submit the notifications and on the schedule required by § 63.2382 of this chapter. Notifications must be submitted to the RCRA regulatory authority.

(*13*) You must submit the reports and on the schedule required by § 63.2386 of this chapter. Reports must be submitted to the RCRA regulatory authority.

(*14*) You must keep the records required by § 63.2390 of this chapter.

(*15*) You must keep records in the form, and for the duration, required by § 63.2394 of this chapter.

(*16*) The parts of the General Provisions that apply to you are provided by § 63.2398 of this chapter.

(*17*) The definitions that apply to the conditions under paragraph (c)(1)(vi)(C) of this section are provided by § 63.2406 of this chapter, and paragraphs (c)(1)(vi)(B)(3) through (5) of this section.

(*18*) You are subject to the requirements in Tables 1–12 to subpart EEEE, part 63 of this chapter.

(vii) *Underground storage tank systems.* Underground storage tank systems are subject to the applicable requirements under 40 CFR Part 280.

(viii) *Management of incompatible waste fuels and other materials.* (A) The generator must document in the waste analysis plan under paragraph (b)(4) of this section how (e.g., using trial tests, analytical results, scientific literature, or process knowledge) precautions will be taken to prevent mixing of waste fuels and other materials which could result in reactions which:

(*1*) Generate extreme heat or pressure, fire or explosions, or violent reactions;

(*2*) Produce uncontrolled toxic mists, fumes, dusts, or gases;

(*3*) Produce uncontrolled flammable fumes or gases; or

(*4*) Damage the structural integrity of the storage unit or facility.

(B) Incompatible materials must not be placed in the same tank.

(2) *Burning*—(i) *General.* Emission-comparable fuel must be burned in an industrial or utility boiler as defined in paragraph (b)(3) of this section but that is further restricted by being a watertube type steam boiler that does not feed fuel using a stoker or stoker-type mechanism.

(ii) *Operating conditions*—(A) *Fossil fuel as primary fuel.* A minimum of 50 percent of fuel fired to the device shall be fossil fuel, fuels derived from fossil fuel, or tall oil. Such fuels are termed ''primary fuel'' for purposes of this section. (Tall oil is a fuel derived from vegetable and rosin fatty acids.) The 50 percent primary fuel firing rate shall be determined on a total heat or volume input basis, whichever results in the greater volume feedrate of primary fuel fired;

(B) *Fuel heating value.* Primary fuels and emission-comparable fuel shall have a minimum as-fired heating value of 8,000 Btu/lb, and each material fired in a firing nozzle where hazardous waste is fired must have a heating value of at least 8,000 Btu/lb, as-fired;

(C) *CO CEMS.* When burning emission-comparable fuel, carbon monoxide emissions must not exceed 100 parts per million by volume, over an hourly rolling average (monitored with a continuous emissions monitoring system (CEMS)), dry basis and corrected to 7 percent oxygen. You must use an oxygen CEMS to continuously correct the carbon monoxide level to 7 percent oxygen. You must install, calibrate, maintain, and continuously operate the CEMS in compliance with the quality assurance procedures provided in the appendix to subpart EEE of part 63 of this chapter (Quality Assurance Procedures for Continuous Emissions Monitors Used for Hazardous Waste Combustors) and Performance Specification 4B (carbon monoxide and oxygen) in appendix B, part 60 of this chapter.

(D) *Dioxin/furan control.* (*1*) If the boiler is equipped with a dry particulate matter control device and the primary fuel is not coal, you must monitor the combustion gas temperature at the inlet to the dry particulate matter control device, and the gas temperature must not exceed 400 °F on an hourly rolling average.

(2) *Calibration of thermocouples.* The calibration of thermocouples must be verified at a frequency and in a manner consistent with manufacturer specifications, but no less frequently than once per year.

(E) *Calculation of rolling averages*—(*1*) *Calculation of rolling averages upon intermittent operations.* You must ignore periods of time when one-minute values are not available for calculating the hourly rolling average. When one-minute values become available again, the first one-minute value is added to the previous 59 values to calculate the hourly rolling average.

(*2*) *Calculation of rolling averages when the emission-comparable fuel feed is cutoff.* You must continue monitoring carbon monoxide and combustion gas temperature at the inlet to the dry particulate matter emission control device when the emission-comparable fuel feed is cutoff, but the source continues operating on other fuels. You must not resume feeding emission-comparable fuel if the emission levels exceed the limits provided in paragraphs (c)(2)(ii)(C) and (D) of this section.

(F) *Automatic fuel cutoff system*—(*1*) *General.* You must operate the boiler with a functioning system that immediately and automatically cuts off the emission-comparable fuel feed, except as provided by paragraph (c)(2)(ii)(F)(*7*) of this section:

(*i*) When the hourly rolling average carbon monoxide level exceeds 100 ppmv or the combustion gas temperature at the inlet to the initial dry particulate matter control device exceeds 400 °F on an hourly rolling average.

(*ii*) When the span value of the combustion gas temperature detector is exceeded;

(*iii*) Upon malfunction of the carbon monoxide CEMS or the gas temperature detector; or

(*iv*) When any component of the automatic waste feed cutoff system fails.

(*2*) *Failure of the automatic fuel cutoff system.* If the automatic emission-comparable fuel cutoff system fails to automatically and immediately cut off the flow of emission-comparable fuel upon exceedance of the carbon monoxide or gas temperature limits, you have failed to comply with the emission-comparable fuel cutoff requirements of this section. If an equipment failure prevents immediate and automatic cutoff of the emission-comparable fuel feed, however, you must cease feeding emission-comparable fuel as quickly as possible.

(*3*) *Corrective measures.* If, after any automatic emission-comparable fuel feed cutoff, the carbon monoxide or gas temperature limit was exceeded while emission-comparable fuel remained in the combustion chamber, you must investigate the cause of the automatic emission-comparable fuel feed cutoff, take appropriate corrective measures to minimize future automatic cutoffs, and record the findings and corrective measures in the operating record.

(*4*) *Excessive exceedance reporting.* (*i*) For each set of 10 exceedances of the carbon monoxide emission limit or the limit on the gas temperature at the inlet to the dry particulate matter control device while emission-comparable fuel remains in the combustion chamber (i.e., when the emission-comparable fuel residence time has not transpired since the emission-comparable fuel feed was cut off) during a 60-day block period, you must submit to the Administrator a

written report within 5 calendar days of the 10th exceedance documenting the exceedances and results of the investigation and corrective measures taken.

(*ii*) On a case-by-case basis, the Administrator may require excessive exceedance reporting when fewer than 10 exceedances occur during a 60-day block period.

(5) *Testing.* The automatic emission-comparable fuel feed cutoff system and associated alarms must be tested at least weekly to verify operability, unless you document in the operating record that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, you must conduct operability testing at least monthly. You must document and record in the operating record automatic emission-comparable fuel feed cutoff system operability test procedures and results.

(*6*) *Ramping down emission-comparable fuel feed.* You may ramp down the emission-comparable fuel feedrate over a period not to exceed one minute. If you elect to ramp down the emission-comparable fuel feed, you must document ramp down procedures in the operating record. The procedures must specify that the ramp down begins immediately upon initiation of automatic emission-comparable fuel feed cutoff and the procedures must prescribe a bona fide ramping down. If the limit on carbon monoxide emissions or gas temperature at the inlet to the dry particulate matter control device is exceeded during the ramp down, you have failed to comply with those limits.

(G) *Boiler load.* Boiler load shall not be less than 40 percent. Boiler load is the ratio at any time of the total heat input to the maximum design heat input.

(H) *Fuel atomization.* The emission-comparable fuel shall be fired directly into the primary fuel flame zone of the combustion chamber with an air or steam atomization firing system, mechanical atomization system, or a rotary cup atomization system under the following conditions:

(*1*) *Particle size.* The emission-comparable fuel must pass through a 200 mesh (74 micron) screen, or equivalent;

(*2*) *Mechanical atomization systems.* Fuel pressure within a mechanical atomization system and fuel flow rate shall be maintained within the design range taking into account the viscosity and volatility of the fuel;

(*3*) *Rotary cup atomization systems.* Fuel flow rate through a rotary cup atomization system must be maintained within the design range taking into account the viscosity and volatility of the fuel.

(I) *Restrictions on benzene and acrolein.* If the as-fired concentration of benzene or acrolein in the emission-comparable fuel exceeds 2 percent by mass, the firing rate of emission-comparable fuel cannot exceed 25% of the total fuel input to the boiler on a heat or volume input basis, whichever results in a lower volume input of emission-comparable fuel.

(3) *Intermediate handlers.* ECF may not be managed by any entity other than the generator, transporter, and designated burner.

(4) *EPA Identification Number.* A burner that receives emission-comparable fuel from an offsite generator must obtain an EPA identification number from the Administrator. A burner who has not received an EPA identification number may obtain one by applying to the Administrator using EPA form 8700–12. Upon receiving the request, the Administrator will assign an EPA identification number to the burner.

(5) *Notification, reporting, and recordkeeping*—(i) *Initial Notification.* A burner that receives emission-comparable fuel from an offsite generator must submit an initial notification to the Regional or State RCRA and CAA Directors prior to receiving the first shipment:

(A) Providing the name, address, and EPA identification number of the burner

(B) Certifying that the excluded fuel will be stored under the conditions of paragraph (c)(1) of this section and burned in a boiler under the conditions of paragraph (c)(2) of this section, and that the burner will comply with the notification, reporting, and recordkeeping conditions of paragraph (c)(3) of this section;

(C) Identifying the specific units that will burn the excluded fuel; and

(D) Certifying that the state in which the burner is located is authorized to exclude wastes as excluded fuel under the provisions of this section.

(ii) *Reporting.* The burner must submit to the Administrator excessive CO exceedance reports required under paragraph (c)(2)(ii)(F)(*5*) of this section.

(iii) *Recordkeeping*—(A) *Records of shipments.* If the burner receives a shipment of emission-comparable fuel from an offsite generator, the burner must retain for each shipment the following information on-site:

(*1*) The name, address, and RCRA ID number of the generator shipping the excluded fuel;

(*2*) The quantity of excluded fuel delivered; and

(*3*) The date of delivery;

(B) *Boiler operating data.* The burner must retain records of information required to comply with the operating requirements of paragraph (c)(2) of this section.

(C) *Records retention.* The burner must retain records at the facility for three years.

(d) *Failure to comply with the conditions of the exclusion.* An excluded fuel loses its exclusion if any person managing the fuel fails to comply with the conditions of the exclusion under this section, and the material must be managed as hazardous waste from the point of generation. In such situations, EPA or an authorized state agency may take enforcement action under RCRA section 3008(a).

TABLE 1 TO § 261.38.—DETECTION AND DETECTION LIMIT VALUES FOR COMPARABLE FUEL SPECIFICATION

Chemical name	CAS No.	Concentration limit (mg/kg at 10,000 Btu/lb)	Minimum required detection limit (mg/kg)
Total Nitrogen as N	NA	4900	.....
Total Halogens as Cl	NA	540	.....
Total Organic Halogens as Cl	NA	([1])	
Polychlorinated biphenyls, total [Aroclors, total]	1336–36–3	ND	1.4
Cyanide, total	57–12–5	ND	1
Metals:			
Antimony, total	7440–36–0	12	.....
Arsenic, total	7440–38–2	0.23	.....
Barium, total	7440–39–3	23	.....
Beryllium, total	7440–41–7	1.2	.....
Cadmium, total	7440–43–9	ND	1.2

TABLE 1 TO § 261.38.—DETECTION AND DETECTION LIMIT VALUES FOR COMPARABLE FUEL SPECIFICATION—Continued

Chemical name	CAS No.	Concentration limit (mg/kg at 10,000 Btu/lb)	Minimum required detection limit (mg/kg)
Chromium, total	7440–47–3	2.3	
Cobalt	7440–48–4	4.6	
Lead, total	7439–92–1	31	
Manganese	7439–96–5	1.2	
Mercury, total	7439–97–6	0.25	
Nickel, total	7440–02–0	58	
Selenium, total	7782–49–2	0.23	
Silver, total	7440–22–4	2.3	
Thallium, total	7440–28–0	23	
Hydrocarbons:			
Benzo[a]anthracene	56–55–3	2400	
Benzene	71–43–2	4100	
Benzo[b]fluoranthene	205–99–2	2400	
Benzo[k]fluoranthene	207–08–9	2400	
Benzo[a]pyrene	50–32–8	2400	
Chrysene	218–01–9	2400	
Dibenzo[a,h]anthracene	52–70–3	2400	
7,12-Dimethylbenz[a]anthracene	57–97–6	2400	
Fluoranthene	206–44–0	2400	
Indeno(1,2,3-cd)pyrene	193–39–5	2400	
3-Methylcholanthrene	56–49–5	2400	
Naphthalene	91–20–3	2400	
Toluene	108–88–3	36000	
Oxygenates:			
Acetophenone	98–86–1	2400	
Acrolein	107–02–8	39	
Allyl alcohol	107–18–6	30	
Bis(2-ethylhexyl)phthalate [Di-2-ethylhexyl phthalate]	117–81–7	2400	
Butyl benzyl phthalate	85–68–7	2400	
o-Cresol [2-Methyl phenol]	95–48–7	2400	
m-Cresol [3-Methyl phenol]	108–39–4	2400	
p-Cresol [4-Methyl phenol]	106–44–5	2400	
Di-n-butyl phthalate	84–74–2	2400	
Diethyl phthalate	84–66–2	2400	
2,4-Dimethylphenol	105–67–9	2400	
Dimethyl phthalate	131–11–3	2400	
Di-n-octyl phthalate	117–84–0	2400	
Endothall	145–73–3	100	
Ethyl methacrylate	97–63–2	39	
2-Ethoxyethanol [Ethylene glycol monoethyl ether]	110–80–5	100	
Isobutyl alcohol	78–83–1	39	
Isosafrole	120–58–1	2400	
Methyl ethyl ketone [2-Butanone]	78–93–3	39	
Methyl methacrylate	80–62–6	39	
1,4-Naphthoquinone	130–15–4	2400	
Phenol	108–95–2	2400	
Propargyl alcohol [2-Propyn-1-ol]	107–19–7	30	
Safrole	94–59–7	2400	
Sulfonated Organics:			
Carbon disulfide	75–15–0	ND	39
Disulfoton	298–04–4	ND	2400
Ethyl methanesulfonate	62–50–0	ND	2400
Methyl methanesulfonate	66–27–3	ND	2400
Phorate	298–02–2	ND	2400
1,3-Propane sultone	1120–71–4	ND	100
Tetraethyldithiopyrophosphate [Sulfotepp]	3689–24–5	ND	2400
Thiophenol [Benzenethiol]	108–98–5	ND	30
O,O,O-Triethyl phosphorothioate	126–68–1	ND	2400
Nitrogenated Organics:			
Acetonitrile [Methyl cyanide]	75–05–8	ND	39
2-Acetylaminofluorene [2–AAF]	53–96–3	ND	2400
Acrylonitrile	107–13–1	ND	39
4-Aminobiphenyl	92–67–1	ND	2400
4-Aminopyridine	504–24–5	ND	100
Aniline	62–53–3	ND	2400
Benzidine	92–87–5	ND	2400
Dibenz[a,j]acridine	224–42–0	ND	2400
O,O-Diethyl O-pyrazinyl phosphorothioate [Thionazin]	297–97–2	ND	2400
Dimethoate	60–51–5	ND	2400
p-(Dimethylamino) azobenzene [4-Dime thylaminoazobenzene]	60–11–7	ND	2400

TABLE 1 TO § 261.38.—DETECTION AND DETECTION LIMIT VALUES FOR COMPARABLE FUEL SPECIFICATION—Continued

Chemical name	CAS No.	Concentration limit (mg/kg at 10,000 Btu/lb)	Minimum required detection limit (mg/kg)
3,3[prime]-Dimethylbenzidine	119–93–7	ND	2400
α,α-Dimethylphenethylamine	122–09–8	ND	2400
3,3[prime]-Dimethoxybenzidine	119–90–4	ND	100
1,3-Dinitrobenzene [m-Dinitrobenzene]	99–65–0	ND	2400
4,6-Dinitro-o-cresol	534–52–1	ND	2400
2,4-Dinitrophenol	51–28–5	ND	2400
2,4-Dinitrotoluene	121–14–2	ND	2400
2,6-Dinitrotoluene	606–20–2	ND	2400
Dinoseb [2-sec-Butyl-4,6-dinitrophenol]	88–85–7	ND	2400
Diphenylamine	122–39–4	ND	2400
Ethyl carbamate [Urethane]	51–79–6	ND	100
Ethylenethiourea (2-Imidazolidinethione)	96–45–7	ND	110
Famphur	52–85–7	ND	2400
Methacrylonitrile	126–98–7	ND	39
Methapyrilene	91–80–5	ND	2400
Methomyl	16752–77–5	ND	57
2-Methyllactonitrile [Acetone cyanohydrin]	75–86–5	ND	100
Methyl parathion	298–00–0	ND	2400
MNNG (N-Metyl-N-nitroso-N[prime]-nitroguanidine)	707–25–7	ND	110
1-Naphthylamine [α-Naphthylamine]	134–32–7	ND	2400
2-Naphthylamine [(β-Naphthylamine]	91–59–8	ND	2400
Nicotine	54–11–5	ND	100
4-Nitroaniline, [p-Nitroaniline]	100–01–6	ND	2400
Nitrobenzene	98–96–3	ND	2400
p-Nitrophenol, [p-Nitrophenol]	100–02–7	ND	2400
5-Nitro-o-toluidine	99–55–8	ND	2400
N-Nitrosodi-n-butylamine	924–16–3	ND	2400
N-Nitrosodiethylamine	55–18–5	ND	2400
N-Nitrosodiphenylamine [Diphenylnitrosamine]	86–30–6	ND	2400
N-Nitroso-N-methylethylamine	10595–95–6	ND	2400
N-Nitrosomorpholine	59–89–2	ND	2400
N-Nitrosopiperidine	100–75–4	ND	2400
N-Nitrosopyrrolidine	930–55–2	ND	2400
2-Nitropropane	79–46–9	ND	2400
Parathion	56–38–2	ND	2400
Phenacetin	62–44–2	ND	2400
1,4-Phenylene diamine [p-Phenylenediamine]	106–50–3	ND	2400
N-Phenylthiourea	103–85–5	ND	57
2-Picoline [alpha-Picoline]	109–06–8	ND	2400
Propylthioracil [6-Propyl-2-thiouracil]	51–52–5	ND	100
Pyridine	110–86–1	ND	2400
Strychnine	57–24–9	ND	100
Thioacetamide	62–55–5	ND	57
Thiofanox	39196–18–4	ND	100
Thiourea	62–56–6	ND	57
Toluene-2,4-diamine [2,4-Diaminotoluene]	95–80–7	ND	57
Toluene-2,6-diamine [2,6-Diaminotoluene]	823–40–5	ND	57
o-Toluidine	95–53–4	ND	2400
p-Toluidine	106–49–0	ND	100
1,3,5-Trinitrobenzene [sym-Trinitobenzene]	99–35–4	ND	2400
Halogenated Organics:			
Allyl chloride	107–05–1	ND	39
Aramite	140–57–8	ND	2400
Benzal chloride [Dichloromethyl benzene]	98–87–3	ND	100
Benzyl chloride	100–44–77	ND	100
bis(2-Chloroethyl)ether [Dichoroethyl ether]	111–44–4	ND	2400
Bromoform [Tribromomethane]	75–25–2	ND	39
Bromomethane [Methyl bromide]	74–83–9	ND	39
4-Bromophenyl phenyl ether [p-Bromo diphenyl ether]	101–55–3	ND	2400
Carbon tetrachloride	56–23–5	ND	39
Chlordane	57–74–9	ND	14
p-Chloroaniline	106–47–8	ND	2400
Chlorobenzene	108–90–7	ND	39
Chlorobenzilate	510–15–6	ND	2400
p-Chloro-m-cresol	59–50–7	ND	2400
2-Chloroethyl vinyl ether	110–75–8	ND	39
Chloroform	67–66–3	ND	39
Chloromethane [Methyl chloride]	74–87–3	ND	39
2-Chloronaphthalene [beta-Chloronaphthalene]	91–58–7	ND	2400
2-Chlorophenol [o-Chlorophenol]	95–57–8	ND	2400

TABLE 1 TO § 261.38.—DETECTION AND DETECTION LIMIT VALUES FOR COMPARABLE FUEL SPECIFICATION—Continued

Chemical name	CAS No.	Concentration limit (mg/kg at 10,000 Btu/lb)	Minimum required detection limit (mg/kg)
Chloroprene [2-Chloro-1,3-butadiene]	1126–99–8	ND	39
2,4-D [2,4-Dichlorophenoxyacetic acid]	94–75–7	ND	7
Diallate	2303–16–4	ND	3400
1,2-Dibromo-3-chloropropane	96–12–8	ND	39
1,2-Dichlorobenzene [o-Dichlorobenzene]	95–50–1	ND	2400
1,3-Dichlorobenzene [m-Dichlorobenzene]	541–73–1	ND	2400
1,4-Dichlorobenzene [p-Dichlorobenzene]	106–46–7	ND	2400
3,3[prime]-Dichlorobenzidine	91–94–1	ND	2400
Dichlorodifluoromethane [CFC–12]	75–71–8	ND	39
1,2-Dichloroethane [Ethylene dichloride]	107–06–2	ND	39
1,1-Dichloroethylene [Vinylidene chloride]	75–35–4	ND	39
Dichloromethoxy ethane [Bis(2-chloroethoxy)methane]	111–91–1	ND	2400
2,4-Dichlorophenol	120–83–2	ND	2400
2,6-Dichlorophenol	87–65–0	ND	2400
1,2-Dichloropropane [Propylene dichloride]	78–87–5	ND	39
cis-1,3-Dichloropropylene	10061–01–5	ND	39
trans-1,3-Dichloropropylene	10061–02–6	ND	39
1,3-Dichloro-2-propanol	96–23–1	ND	30
Endosulfan I	959–98–8	ND	1.4
Endosulfan II	33213–65–9	ND	1.4
Endrin	72–20–8	ND	1.4
Endrin aldehyde	7421–93–4	ND	1.4
Endrin Ketone	53494–70–5	ND	1.4
Epichlorohydrin [1-Chloro-2,3-epoxy propane]	106–89–8	ND	30
Ethylidene dichloride [1,1-Dichloroethane]	75–34–3	ND	39
2-Fluoroacetamide	640–19–7	ND	100
Heptachlor	76–44–8	ND	1.4
Heptachlor epoxide	1024–57–3	ND	2.8
Hexachlorobenzene	118–74–1	ND	2400
Hexachloro-1,3-butadiene [Hexachlorobutadiene]	87–68–3	ND	2400
Hexachlorocyclopentadiene	77–47–4	ND	2400
Hexachloroethane	67–72–1	ND	2400
Hexachlorophene	70–30–4	ND	59000
Hexachloropropene [Hexachloropropylene]	1888–71–7	ND	2400
Isodrin	465–73–6	ND	2400
Kepone [Chlordecone]	143–50–0	ND	4700
Lindane [gamma-BHC] [gamma-Hexachlorocyclohexane]	58–89–9	ND	1.4
Methylene chloride [Dichloromethane]	75–09–2	ND	39
4,4[prime]-Methylene-bis(2-chloroaniline)	101–14–4	ND	100
Methyl iodide [Iodomethane]	74–88–4	ND	39
Pentachlorobenzene	608–93–5	ND	2400
Pentachloroethane	76–01–7	ND	39
Pentachloronitrobenzene [PCNB] [Quintobenzene] [Quintozene]	82–68–8	ND	2400
Pentachlorophenol	87–88–5	ND	2400
Pronamide	23950–58–5	ND	2400
Silvex [2,4,5-Trichlorophenoxypropionic acid]	93–72–1	ND	7
2,3,7,8-Tetrachlorodibenzo-p-dioxin [2,3,7,8-TCDD]	1746–01–6	ND	30
1,2,4,5-Tetrachlorobenzene	95–94–3	ND	2400
1,1,2,2-Tetrachloroethane	79–35–4	ND	39
Tetrachloroethylene [Perchloroethylene]	127–18–4	ND	39
2,3,4,6-Tetrachlorophenol	58–90–2	ND	2400
1,2,4-Trichlorobenzene	120–82–1	ND	2400
1,1,1-Trichloroethane [Methyl chloroform]	71–56–6	ND	39
1,1,2-Trichloroethane [Vinyl trichloride]	79–00–5	ND	39
Trichloroethylene	79–01–6	ND	39
Trichlorofluoromethane [Trichlormonofluoromethane]	75–69–4	ND	39
2,4,5-Trichlorophenol	95–95–4	ND	2400
2,4,6-Trichlorophenol	88–06–2	ND	2400
1,2,3-Trichloropropane	96–18–4	ND	39
Vinyl Chloride	75–01–4	ND	39

Notes: NA—Not Applicable. ND—Nondetect.
[1] 25 or individual halogenated organics listed below.

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