

US EPA ARCHIVE DOCUMENT

RCRA REVISION CHECKLIST 96

Burning of Hazardous Waste in
Boilers and Industrial Furnaces; Technical Amendments II
56 FR 42504-42517
August 27, 1991
(RCRA Cluster II, HSWA and non-HSWA provisions)

Notes: 1) The notice addressed by this checklist makes several technical amendments to the final rule addressed by Revision Checklist 85 (56 FR 7134, February 21, 1991) and Revision Checklist 94 (56 FR 32688, July 17, 1991). These revisions provide clarification and correct unintended consequences of the Boilers and Industrial Furnaces (BIF) rule. This notice also adds two new appendices, Appendix XI and Appendix XII, to the code. Technical corrections to several sections (i.e., 261.2(d), 261.3(c)(2)(ii)(B), 266.103(a)(5)(i)(D), 266.103(b)(5)(i)(A) and Appendix IX to Part 266) were already addressed in Revision Checklist 94. However, for completeness, these corrections (except the incorrect referral to 261.3(c)(2)(ii)(8) instead of 261.3(c)(2)(ii)(B)) are repeated in this checklist and identified in the endnotes. Technical corrections which address only the italicizing format of a citation (266.102(e)(4)(ii)(C)(*I*), 266.102(e)(4)(ii)(C)(2), 266.102(e)(4)(ii)(C)(3), 266.102(e)(4)(iii)(C)(*I*) and 266.102(e)(4)(iii)(C)(2)) are not included in this checklist.

2) Note that the Federal Register for this rule corrects typographical errors in certain headings at 56 FR 32692 in the July 17, 1991 Federal Register (Revision Checklist 94) [i.e., the "§266.4" should be "§266.40", and the "§270.33" should be "§270.73"]. However, no additional changes were made to the paragraphs by this rule, therefore they have not been included in this revision checklist.

3) Note that on September 5, 1991 (56 FR 48874; Revision Checklist 98), an administrative stay of the permitting standards as they apply to coke ovens burning certain hazardous wastes was published affecting the February 21, 1991 (56 FR 7134; Revision Checklist 85) final rule. The changes addressed by that checklist are optional. However, the final rule addressed by Revision Checklist 105 (June 22, 1992; 57 FR 27880) removed the September 5, 1991 administrative stay.

4) States which are not authorized for Revision Checklists 85 and 94 are strongly encouraged to adopt these present technical corrections and the ones addressed by Revision Checklists 111 and 114, as appropriate for the State's schedule, at the same time the requirements addressed by Revision Checklists 85 and 94 are adopted. States already authorized for the provisions addressed by Revision Checklists 85 and 94 should adopt the Revision Checklist 96, 111 and 114 technical corrections/amendments as soon as possible.

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in
Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE

PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

SUBPART A - GENERAL

1 DEFINITION OF SOLID WASTE

at the end of
paragraph, add
exception for
brominated material
that meets certain
criteria

261.2(d)(2)

material must
contain a bromine
concentration of at
least 45%

261.2(d)(2)(i)

material must
contain less than
a total of 1% of
toxic organic
compounds listed
in Appendix VIII

261.2(d)(2)(ii)

material is processed
continually on-site
in the halogen acid
furnace via direct
conveyance

261.2(d)(2)(iii)

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in
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FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE

PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF
HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

SUBPART G - CLOSURE AND POST-CLOSURE

CLOSURE PLAN; AMENDMENT OF PLAN

2	remove introductory clause; restructure paragraph to create (d)(2), (d)(2)(i) and remove last sentence replacing it with "; or"; add (d)(2)(ii) addressing provisions for units meeting 265.113(d) requirements	265.112(d)(2)
		265.112(d)(2)(i)
		265.112(d)(2)(ii)

CLOSURE; TIME ALLOWED FOR CLOSURE

2	add text regarding the final volume of nonhazardous waste; remove text regarding the 90-day requirement for a boiler or industrial furnace	265.113(a)
2	add text regarding the final volume of nonhazardous waste; remove text regarding the 90-day requirement for a boiler or industrial furnace	265.113(b)

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE

PART 266 - STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

SUBPART H - HAZARDOUS WASTE BURNED IN BOILERS AND INDUSTRIAL FURNACES

APPLICABILITY

add "(f)" to
list of references in
the first sentence 266.100(a)

add text restricting
exemption for metal
recovery furnaces and
subjecting an
owner or operator
of a lead or a
nickel-chromium
recovery furnace, or
certain metal
recovery furnaces
to 266.100(c)(3)
requirements 266.100(c)(1)

add text
regarding alternative
methods that meet
or exceed SW-846
method performance
capabilities; situation
where "best available
method" is used 266.100(c)(1)(ii)

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
replace "as-generated" with "as-fired"; add additional text regarding the reduction of organic compound concentration to the 500 ppm limit by bona fide treatment; blending for dilution to meet the 500 ppm limit is prohibited; retention of documentation that waste not impermissibly diluted in records required by 266.100(c)(1)(iii)		266.100(c)(2)(i)			
replace "as-generated" with "as-fired"; add additional text regarding the reduction of the heating value to below 5,000 Btu/lb by bona fide treatment; blending for dilution to meet the 5,000 Btu/lb limit is prohibited; retention of documentation that waste not impermissibly diluted in records required by 266.100(c)(1)(iii)		266.100(c)(2)(ii)			

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
add new paragraph regarding requirements for exemption from 266.102 through 266.111 for owner or operator of certain metal recovery furnaces; written notice to director; 266.100(c)(1) compliance	266.100(c)(3)				
exemption from 266.100(c)(1) requirements for hazardous wastes listed in Appendices XI and XII, Part 266, and baghouse bags used to capture metallic dusts emitted by steel manufacturing, provided:	266.100(c)(3)(i)				
waste contains recoverable levels of specified metals	266.100(c)(3)(i)(A)				
waste does not exhibit the Toxicity Characteristic of 261.24 for an organic constituent	266.100(c)(3)(i)(B)				
waste is not a hazardous waste listed in Part 261 Subpart D because it is listed for an organic constituent as identified in Appendix VII of Part 261	266.100(c)(3)(i)(C)				

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
certification by owner or operator under 266.100(c)(3) regarding hazardous waste; sampling and analysis or other information to assure compliance; sampling and analysis conducted according to 266.100(c)(1)(ii); maintain records to document compliance with (c)(3) for at least three years	266.100(c)(3)(i)(D)				
basis for case-by-case decisions regarding toxic organic constituents; metal recovery furnace subject to Subpart H requirements after adequate notice and opportunity for comment; factors Director will consider:	266.100(c)(3)(ii)				
concentration and toxicity of organic constituents in the material	266.100(c)(3)(ii)(A)				
level of destruction of toxic constituents provided by the furnace	266.100(c)(3)(ii)(B)				

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
acceptable ambient levels established in Appendices IV or V exceeded for any toxic organic compound that may be emitted based on certain conditions	266.100(c)(3)(ii)(C)				
3 conditional exemption from Subpart H requirements for owners or operators of certain smelting, melting, and refining furnaces, except for 266.112; to be exempt from 266.101 through 266.111, an owner or operator must:	266.100(f)				
provide a one-time written notice indicating:	266.100(f)(1)				
owner or operator claims 266.100(f) exemption	266.100(f)(1)(i)				
hazardous waste is burned for legitimate recovery of precious metal	266.100(f)(1)(ii)				
compliance with 266.100(f) sampling and analysis and recordkeeping requirements	266.100(f)(1)(iii)				
sample and analyze hazardous waste as necessary using specified procedures	266.100(f)(2)				
maintain specified records at facility for at least three years	266.100(f)(3)				

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in
Boilers and Industrial Furnaces; Technical Amendments (cont'd)

		STATE ANALOG IS:			
FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
PERMIT STANDARDS FOR BURNERS					
insert sentence regarding alternative methods and best available method after "...see §260.11 of this chapter)."	266.102(b)(1)				
replace "for not less than three years" with "until closure of the facility"	266.102(e)(10)				
INTERIM STATUS STANDARDS FOR BURNERS					
replace "Hazardous waste listed for dioxin or derived from any of the following dioxin-listed wastes" with "The following hazardous waste listed for dioxin and hazardous waste derived from any of these wastes" at the beginning of paragraph	266.103(a)(3)				
replace "and" after "discharged" with "or"	266.103(a)(5)				
change "(c)(7)(ii)" to "(c)(5)"	266.103(a)(5)(i)(D)				

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in
Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
replace "as-generated" with "as-fired"; remove parentheses around the phrase beginning with "and so is..." and add period at end of phrase; insert text regarding 1) the reduction of the concentration of nonmetal compounds to the 500 ppm limit by bona fide treatment, and 2) blending for dilution to meet the 500 ppm limit prohibited; retention of documentation that the waste has not been impermissibly diluted in facility record		266.103(a)(5)(ii)(A)			

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
remove "as-generated or" before "as-fired"; remove parentheses around the phrase beginning with "and so is..."; add text regarding 1) the reduction of the heating value of a waste as-generated to below 5,000 Btu/lb limit by bona fide treatment, and 2) blending to augment heating value to meet the 5,000 Btu/lb limit prohibited; retention of documentation that the waste has not been impermissibly blended in facility record		266.103(a)(5)(ii)(B)			

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
restructure paragraph by breaking it into (a)(6), and (a)(6)(i)-(iv) and revising old 266.103(a)(6) as follows: remove verbiage between "not feed hazardous waste" and "that has a heating value less"; revise rest of paragraph after "5,000 Btu/lb; as generated" by replacing it with parenthetical phrase addressing situation where 5,000 Btu/lb limit can be exceeded; exceptions: paragraphs as indicated below	266.103(a)(6)				
hazardous waste burned solely as an ingredient	266.103(a)(6)(i)				
hazardous waste burned for purposes of compliance testing for a total period of time not to exceed 720 hours	266.103(a)(6)(ii)				
waste burned if Director has documentation to show that, prior to August 21, 1991:	266.103(a)(6)(iii)				
boiler or industrial furnace operating under Part 265, Subpart O or P requirements	266.103(a)(6)(iii)(A)				

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
boiler or industrial furnace met 270.70 interim status eligibility requirements for Part 265, Subpart O or Subpart P	266.103(a)(6)(iii)(B)				
hazardous waste with a heating value less than 5,000 Btu/lb burned prior to August 21, 1991	266.103(a)(6)(iii)(C)				
such waste burned in halogen acid furnace if waste burned as an excluded ingredient under 261.2(e) prior to February 21, 1991 and documentation kept on file	266.103(a)(6)(iv)				
4 insert "and recorded" after "monitored"	266.103(b)(5)(i)(A)				
remove "operating" before "record"; insert "records and" before "locations"	266.103(b)(6)(viii)				
insert "The administrative record kept by the" before "Agency" at the beginning of the paragraph	266.103(b)(6)(viii)(A)				
insert "The BIF correspondence file kept at" before "The facility"; add sentence specifying what the correspondence file must include	266.103(b)(6)(viii)(B)				

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FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
insert "and the applicable emissions standards of §§ 266.104(b) through (e), 266.105, 266.106, 266.107, and 266.103(a)(5)(i)(D)" after "operating limits"; remove "until an operating permit is issued" from the end of the paragraph	266.103(c)(1)				
at end add text regarding case-by-case approval to use compliance test data from one unit in lieu of testing a similar on-site unit; information required to support owner or operator request; approval based on meeting 266.103(c) requirements	266.103(c)(3)(i)				
add text regarding criteria for compliance with 266.103(l), 265.112(d)(2) and 265.113 provisions	266.103(e)				
replace "for a period of three years" with "until closure of the boiler or industrial furnace unit"	266.103(k)				
STANDARDS TO CONTROL ORGANIC EMISSIONS					
5 insert "(" before "2.2"	266.104(e)(4)				

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

		STATE ANALOG IS:			
FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
SMALL QUANTITY ON-SITE BURNER EXEMPTION					
replace "volume basis" with "total heat input or mass input basis, whichever results in the lower mass feed rate of hazardous waste"	266.108(a)(2)				
LOW RISK WASTE EXEMPTION					
replace "of" after "Director" with "on"; replace "volume input" with "mass input"; replace "larger volume" with "greater mass feed rate"	266.109(a)(1)(i)				
WAIVER OF DRE TRIAL BURN FOR BOILERS					
replace "the boiler" with "the device"; replace "volume input" with "mass input"; replace "larger volume" with "greater mass feed rate"	266.110(a)				
STANDARDS FOR DIRECT TRANSFER					
add text regarding compliance with specified maintenance and protective distances requirements in lieu of 265.176 requirements; written certification by local Fire Marshall to be kept on file	266.111(d)(2)				

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

		STATE ANALOG IS:			
FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
REGULATION OF RESIDUES					
replace existing paragraph with "Boilers must burn at least 50% coal on a total heat input or mass input basis, whichever results in the greater mass feed rate of coal;"	266.112(a)(1)				
replace "composite samples" with "samples representing a minimum of 10 days of operation"; add sentence regarding compositing period not to exceed 24 hours; replace "The upper 95% confidence level about the mean" in second sentence with "The upper tolerance limit (at 95% confidence with a 95% proportion of the sample distribution)"; replace "upper 95% confidence level about the mean" in last sentence with "upper tolerance limit"	266.112(b)(1)(i)				

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
replace existing paragraph with new paragraph regarding sampling and analysis of waste-derived residue to determine whether residue generated during each 24-hour period has concentrations of toxic constituents higher than 266.112(b)(1)(i) normal residue concentrations; if so, residue not excluded from definition of hazardous waste; toxic constituent concentrations based on analysis of samples obtained over 24-hour period; for multiple samples, concentration of toxic constituent is arithmetic mean; no results may be disregarded		266.112(b)(1)(ii)			

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
add new paragraph regarding sampling and analysis of waste-derived residue to determine whether residue generated during each 24-hour period has concentrations of toxic constituents higher than health-based levels; determination of toxic concentrations based on analysis of one or more samples obtained over 24-hour period; for multiple samples, concentration of toxic constituent is arithmetic mean of concentrations in samples; no results may be disregarded	266.112(b)(2)(iii)				
replace "must" with "shall"; replace "for a period of three years" with "until closure of the boiler or industrial furnace unit"	266.112(c)				

APPENDIX IX TO PART 266

METHODS MANUAL FOR COMPLIANCE WITH THE BIF REGULATIONS

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
replace section 7.0, "Statistical Methodology for Bevill Residue Determinations," with new text given at 56 FR 42516 & 42517		Appendix IX/ Section 7.0			
change " ≥ 0.95 " to " ≤ 0.95 " in section 9.2, first bullet under para- graph "2"; in section 9.2, paragraph "3", change the ending phrase of the last sentence to "ratio of the molecular weight of HCl to the molecular weight of Cl (i.e., 36.5/35.5)"		Appendix IX/ Section 9.2			

APPENDIX XI TO PART 266

LEAD-BEARING MATERIALS THAT MAY BE PROCESSED IN EXEMPT LEAD SMELTERS

add new appendix
addressing lead-bearing
materials that
may be processed
in exempt lead
smelters, see
56 FR 42517

Appendix XI

APPENDIX XII TO PART 266

NICKEL OR CHROMIUM-BEARING MATERIALS THAT MAY BE PROCESSED IN EXEMPT NICKEL-CHROMIUM RECOVERY FURNACES

add new appendix
addressing nickel or
chromium-bearing

RCRA REVISION CHECKLIST 96: Burning of Hazardous Waste in Boilers and Industrial Furnaces; Technical Amendments (cont'd)

FEDERAL REQUIREMENT	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:		
			EQUIV- ALENT	MORE STRINGENT	BROADER IN SCOPE
materials that may be processed in exempt nickel-chromium recovery furnaces, see 56 FR 42517	Appendix XII				

- ¹ Revision Checklist 85 (February 21, 1991; 56 FR 7134) redesignated the old paragraph (d)(2) as (d)(3) and introduced a new paragraph (d)(2) into the code. Revision Checklist 94 (July 17, 1991; 56 FR 32688) made technical corrections to the February 21, 1991 amendatory language for 261.2 and incorrectly redesignated paragraph (d)(3) as (d)(4) and paragraph (d)(4) as (d)(5). The Federal code as of February 21, 1991, did not include 261.2(d)(3) or 261.2(d)(4). The technical correction addressed by Revision Checklist 96 (August 27, 1991; 56 FR 42504) fixes this error.
- ² Note that the technical corrections addressed by the August 27, 1991 Federal Register for this rule reverse the corrections made by the February 21, 1991 notice (56 FR 7134; Revision Checklist 85). The August 27, 1991 language is the same as the language in the July 1990 CFR. Thus, effectively the technical corrections addressed by Revision Checklist 85 for these citations have been nullified by this checklist.
- ³ Note that there is a typographical error in the August 27, 1991 Federal Register (Revision Checklist 96; 56 FR 42504). The reference to "261.111" should be "266.111." Revision Checklist 111 (57 FR 38558; August 25, 1992) fixes this error.
- ⁴ Note that the technical correction for this citation can be found in the August 27, 1991 Federal Register (56 FR 42504) on page 42512, first column, section II (the fourth paragraph under the Part 270 technical corrections). In the Federal Register, section II appears to be part of the Part 270 corrections; this is incorrect, and makes this technical correction very difficult to find. The technical correction found in the August 27, 1991 Federal register was addressed in Revision Checklist 85. However, it is included in this checklist for completeness.
- ⁵ Note that there was an error in the July 17, 1991 Federal Register (56 FR 32688) addressed by Revision Checklist 94. On page 32689, the instructions for correction 48 under 266.104 omits a parenthesis, ")", after "insert a"; the correction should read "On page 7221, second column, in § 266.104(e)(4), line 6, insert a "(" before "2.2". The error, which was corrected in the August 27, 1991 Federal register (see correction 2, page 56 FR 42512, column 1), was addressed in Revision Checklist 94. However, it is included in Revision Checklist 96 for completeness.