Technical Support Document on Emissions Inventory Reporting Requirements for the Proposed Clean Air Interstate Rule

U.S. Environmental Protection Agency Office of Air Quality Planning and Standards Emissions Analysis and Monitoring Division Research Triangle Park, NC 27711 May 2004

Purpose

This document provides further information describing the proposed changes to 40 CFR 51 Subpart A and section 51. 122 and the proposed new section 51.125, concerning requirements for emission reporting by States to EPA. The purpose is to facilitate public understanding of the reasons for the proposed changes, in order to allow public comment on the merits of the changes. The information provided here supplements with more detail the summary of the proposed changes contained in section III.B of the preamble to the Supplemental Notice of Proposed Rulemaking for the Clean Air Interstate Rule.

The information is presented in two tables. Table 1 summarizes in a broad manner the reporting requirements that would apply to States in particular situations. Table 2 lists individual proposed changes to the rule text and the purpose of each.

Questions on the proposed requirements may be addressed to William Kuykendal at <u>kuykendal.bill@epa.gov</u> or (919) 541-5372.

Table 1Summary of Reporting Requirements and Rationales

General Content of Required Report	States Affected	Sources Affected	Every year Requirements (presumed met by three-year requirements when years coincide)	Three-year Requirements (2005, 2008, etc.)	Rationale
Annual emissons from all sources in all states every third year	All	All sources (New definition of point sources is proposed to take effect in 2008, but asking for comment on 2005)		Submit data elements in Tables 2a, 2b, and 2c of the Appendix to 40 CFR 51 Subpart A for: All pollutants Annual emissions	For all States, this is requirement of existing Subpart A
Annual emissions from very large point sources every year	All	Type A sources (see criteria in Table 1 of appendix to 51 Subpart A)	Submit data elements in Table 2a of the Appendix to 40 CFR 51 Subpart A for: All pollutants Annual emissions Starts in 2003 (due June 2005)		For all States, this is requirement of existing Subpart A

General Content of Required Report	States Affected	Sources Affected	Every year Requirements (presumed met by three-year requirements when years coincide)	Three-year Requirements (2005, 2008, etc.)	Rationale
NOx emissions in states contributing significantly to ozone nonattainment in another state, all sources, every three years	AL, CT, DE, DC, IL, IN, KY, MA, MD, MI, MS, NC, NJ, NY, OH, PA, RI, SC, TN, VA, WV	All sources		Submit data elements in Tables 2a, 2b, and 2c of the Appendix to 40 CFR 51 Subpart A for: Ozone season NOx Summer day NOx Starts with 2005 ozone season	Current NOx SIP Call requirement
VOC emissions in states contributing significantly to ozone nonattainment in another state, all sources, every three years	AL, CT, DE, DC, IL, IN, KY, MA, MD, MI, MS, NC, NJ, NY, OH, PA, RI, SC, TN, VA, WV	All		Submit data elements in Tables 2a, 2b, and 2c of the Appendix to 40 CFR 51 Subpart A for: Summer day VOC Asking for comment on CO	Submission of daily VOC is a requirement of the existing Subpart A. EPA is proposing to keep it only for areas with ozone concern. These states contribute to nonattainment in other states.

General Content of Required Report	States Affected	Sources Affected	Every year Requirements (presumed met by three-year requirements when years coincide)	Three-year Requirements (2005, 2008, etc.)	Rationale
NOx emissions in states contributing significantly to ozone nonattainment in another state, from sources controlled to meet NOx SIP call requirements, every year	AL, CT, DE, DC, IL, IN, KY, MA, MD, MI, MS, NC, NJ, NY, OH, PA, RI, SC, TN, VA, WV However, all have joined the EPA trading program.	Only sources subject to control to get required Nox reductions, unless reporting to EPA through a trading program	Submit applicable data elements in Tables 2a, 2b, and 2c of the Appendix to 40 CFR 51 Subpart A for: Ozone season NOx Summer day NOx Starts 2003		Current NOx SIP call requirement
Same as above	GA, MO	Same requirements as for the above 3 lines, except that no reporting is required until the 2006 inventory year.			These States have been added to the NOx SIP call.

General Content of Required Report	States Affected	Sources Affected	Every year Requirements (presumed met by three-year requirements when years coincide)	Three-year Requirements (2005, 2008, etc.)	Rationale
Ozone-related emissions on a typical summer day, in states with ozone nonattainment areas, all sources, every three years	States containing an ozone nonattainment designated by EPA rule on April 15, 2004.	All sources		Submit data elements in Tables 2a, 2b, and 2c of the Appendix to 40 CFR 51 Subpart A for: Summer day NOx and VOC, Taking comment on CO Starts 2005	A requirement of the existing Subpart A EPA is proposing to keep it only for areas with ozone concern. These states have 8-hour ozone nonattainment areas.
Annual and ozone-season NOx emissions in states included in the CAIR due to contribution to ozone nonattainment in another state, all sources every three years	AL, AR, CT, DC, DE, GA, IL, IN, MD, MA, MI, MS, MO, NJ, NY, NC, OH, PA, SC, TN, VA, WV, WI	All sources		Submit data elements in Tables 2a, 2b, and 2c of the Appendix to 40 CFR 51 Subpart A for: Annual NOx Ozone season NOx Starts 2008	These States are subject to CAIR for ozone reasons. Annual NOx allows tracking of budget compliance for regulatory purposes; ozone season allows tracking for air quality effect.

General Content of Required Report	States Affected	Sources Affected	Every year Requirements (presumed met by three-year requirements when years coincide)	Three-year Requirements (2005, 2008, etc.)	Rationale
Annual and ozone-season NOx emissions in states included in the CAIR due to contribution to ozone nonattainment in another state, controlled sources only, every three years	AL, AR, CT, DC, DE, GA, IL, IN, MD, MA, MI, MS, MO, NJ, NY, NC, OH, PA, SC, TN, VA, WV, WI	Sources subject to control to get required CAIR- required reductions, unless reporting to EPA through a trading program	Submit applicable data elements in Tables 2a, 2b, and 2c of the Appendix to 40 CFR 51 Subpart A for: Annual NOx Ozone season NOx Starts 2009		Would extend every-year reporting requirements of the NOx SIP call to new states found to contribute significantly to ozone nonattainment in another state. These States are subject to CAIR for ozone reasons. Annual NOx allows tracking of budget compliance for regulatory purposes; ozone season allows tracking for air quality effect.

General Content of Required Report	States Affected	Sources Affected	Every year Requirements (presumed met by three-year requirements when years coincide)	Three-year Requirements (2005, 2008, etc.)	Rationale
Annual and NOx and SO2 emissions in states included in the CAIR due to contribution to PM2.5 nonattainment in another state, all sources every three years	AL, AR, DC, DE, FL, GA, IL, IN, IA, KS, KY, LA, MA, MD, MI, MN, MS, MO, NJ, NY, NC, OH, PA, SC, TN, TX, VA, WV, WI	All sources		Submit data elements in Tables 2a, 2b, and 2c of the Appendix to 40 CFR 51 Subpart A for: Annual NOx and SO2 Starts 2008	These States area subject to CAIR for reasons of PM2.5 Reporting of annual SO2 and NOx from all sources at three- year interval allows tracking of regulatory compliance and annual PM2.5 air quality factors.

General Content of Required Report	States Affected	Sources Affected	Every year Requirements (presumed met by three-year requirements when years coincide)	Three-year Requirements (2005, 2008, etc.)	Rationale
Annual Nox and SO2 emissions in states included in the CAIR due to contribution to ozone nonattainment in another state, controlled sources only, every three years	AL, AR, DC, DE, FL, GA, IL, IN, IA, KS, KY, LA, MA, MD, MI, MN, MS, MO, NJ, NY, NC, OH, PA, SC, TN, TX, VA, WV, WI	Sources subject to control to get required reductions, unless reporting to EPA through a trading program	Submit applicable data elements in Tables 2a, 2b, and 2c of the Appendix to 40 CFR 51 Subpart A for: Annual SO2 Annual NOx Starts 2009		These States area subject to CAIR for reasons of PM2.5 Reporting of annual SO2 and NOx from all controlled sources every year allows tracking of regulatory compliance and annual PM2.5 air quality factors.

Table 2
Proposed Changes in Emissions Reporting Requirements in 40 CFR Part 51

Section Amended or Added	Proposed Changes or Addition	Reasons for Proposed Changes	Request for Comment and other Special Notes
Table of contents for 51 Subpart A	Some section headings are revised.	Clarity.	
	Changed "Glossary" to "Definitions".	Definitions in Subpart A now also serve 51.122 where they previously were called definitions rather than glossary.	
51.1	Add phrase indicating that States are not required to submit emission inventory information for sources on tribal lands	Clarity. States do not have regulatory over these sources and in general do not have direct access to information on their emissions.	
51.1	Minor edits.	Make more succinct.	
51.10	Add reference to the Clean Air Interstate Rule. State that requirements under that rule and under the NOx SIP call are contained in Subpart A.	Clarity. The detailed list of required data elements would be removed from 51.122.	

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51.15(a)	Reorganize to state the required pollutants separately for the different applicable emission reporting periods. Limit pollutants to those relevant to the purpose of the reporting requirement for that time period's emissions.	Existing 51.15(a) required reporting of all pollutants for each of annual, ozone season day, and winter season day, some which had no relevance. Revision, for example, removes requirement for reporting of SO2 emissions for ozone/summer season day.	
51.15(a)	Spell out Volatile Organic Compounds. Make clear that the required reporting of PM10 and PM2.5 emissions includes specific reporting of condensible and filterable particular matter where applicable.	Clarity. Clarity. Requirement is currently implied in the definition of PM.	
51.15(a)(7)	Add statement that other pollutants may also be reported.	Clarity, since some States may find it less work to report all pollutants in their data system rather than filter to just those required for the time period at issue, and may wish to provide emissions of hazardous air pollutants voluntarily, per	

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		EPA request.	
51.15(b)	Clarify that a State is not required to report sources on tribal lands.	See above.	
	Change "Area" to "Non-Point"	See footnote in section III.B preamble.	
51.15(c)	Add statement that EPA may require information on the method of determination for data elements listed later in Subpart A.	"Source of data" is required by the existing 51.122 for several listed data elements. However, EPA's current electronic data format does not specify a means to report this information. Rather than list these as data elements in the tables in Subpart A, this provision allows EPA to consider the need for this information each year and to specify the format for reporting it.	Is it necessary to set a deadline each year for EPA to designate which data elements require reporting of method of determination?
	Add the example of the State contact person to the existing statement that "additional information not listed in	To make clearer that this statement is not intended to allow EPA to make substantive additions to the list	

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	Tables 2a through 2d may be required."	of data elements through the non-rulemaking mechanism of the reporting format.	
51.15(e)	New paragraph added, to allow the option of submission of emissions inventory model inputs instead of actual emissions values.	See preamble. A current example would be inputs for the new National Mobile Inventory Model (NMIM).	
51.20(a) and (b)	Base point source reporting on whether a source is "major", rather than on cutoffs based on actual emissions in the year at issue. Change is mandatory starting in 2008.	See preamble.	How else might difficulties caused by a changing universe of reporting-eligible sources from year-to-year as under the current rules be managed? How would this actually affect the number of sources reported as point sources, and what effect would this have on State workload? Does the State currently have the necessary emissions data for the additional sources, or would changes in State rules and practices be required?
	Remove requirement for reporting biogenic emissions.	See preamble.	

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51.20(d)	Add statement that reporting of non-point sources must include wildfires and prescribed fires, but is not required to include wind- generated dust.	Clarify that fires are potentially important emission sources and are encompassed under the term "anthropogenic stationary sources" for purposes of this Subpart, due to the interaction of prescribed fires and wildfire prevention. This is not intended to have any effect on the meaning of provisions of other CFR sections that may address fires. Wind-generated dust is explicitly excluded to clarify EPA intent and current practice. Note that wind generated dust from roads and material storage piles at major point sources are required to be reported. Wind-generated dust from natural landscapes and from fields that have been plowed but are not yet covered by vegetation would be excluded.	
	Add statement that non-point	Clarity, reflects current EPA	

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	sources must be identified by source classification code.	practice in interpreting this section.	
	Add statement that non-point source categories with de minimus emissions may be excluded.	Practicability and efficiency.	
51.25	Change "an area's" to "any area's"	Clarity	
51.30	Add provisions related to NOx SIP call (previously contained only in 51.122 and not in Subpart A) and provisions related to the Clean Air Interstate Rule. Restructure and re-phrase for clarity.	Requirements related to the Clean Air Interstate Rule are based on the reason(s) each State is affected. For example, States contributing significantly to ozone nonattainment in another State would be required to report ozone-relevant data like States presently subject to the NOx SIP call, but States contributing only to PM2.5 nonattainment would report only annual SO2 and NOx.	Note that under the existing Subpart A, all States are required to report all pollutants for winter and ozone season day. The proposed revision removes the requirement for winter day reporting (for reasons stated in the preamble) and limits the ozone season day (now proposed to be termed summer season day) reporting only to VOC and NOx and only to areas with ozone nonattainment or contributing to nonattainment in another State. Should summer day reporting include

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	The reports now required by 51.122 to be submitted on December 31 of the next year will instead be due June 1 of the second year following the year being reported. The existing requirement of 51.122 for full reporting of all sources for 2007 is not retained.	Consolidate reporting transactions, for efficiency. See preamble for explanation.	CO, which makes some contribution to ozone formation? Instead, should all or some of the reporting which Subpart A now requires on June 1 be moved forward to December 31? See discussion in preamble.
51.35(a)(3) (And deletion of current 51.35(d) and renumbering of remaining paragraphs.)	Remove the alternative of a State submitting one-third of its three-year sources each year. Instead, State may obtain data on one-third of the sources each year but must submit all the data in one transaction.	Efficiency in EPA handling and analysis of submitted data, and avoiding errors related to source identification and matching. To EPA's knowledge, no State's current or planned practice will be affected.	

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51.40	Add a statement better indicating what specifications/requirements can be part of the electronic data format, which EPA may change from year-to-year without amendment to Subpart A, e.g., that the electronic data format may specify that more than one data field is required for a single data element listed in Tables 2a through 2d.	Clarity. Reflects current EPA practice in applying existing Subpart A.	
Table 1	Simplify by removing classification-dependent emissions cutoffs for point source reporting, which would instead be based on status as a "major" source.	See preamble for explanation of the purpose of basing point sources on "major" source status. Requirements for reporting as Type A sources every year are not affected. The term "Type B" is not longer necessary and is not used.	
Table 2a	Revised to address all required data elements for point sources in consolidated form. Details for data elements being altered	Separate State and county FIPS codes are reduced to a single combined FIPS code, per current practice.	

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	or otherwise of special interest are listed in the next column. A State would enter this table once it had determined which time periods and pollutants it was required to report, based on its status under 51.122, 51.123, 51.124, and 51.125.	Point ID code is replaced with Unit ID code, per current practice. Heat content of fuel in the ozone season, if applicable, is added, since it is a current requirement of the NOx SIP call. Activity data element is generalized from "annual" and "daily" to "for each period reported" since this list of data elements now applies to annual reporting, ozone season reporting, and summer day reporting. "Work weekday" is replaced by "summer daily", per reasons explained in the preamble. In some areas, the conditions of greatest concern may occur on weekend days. Futher explanation appears in	
		the definition of "summer	

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		 daily." Add "Ozone season emissions (if applicable)", since this list now must address the requirements of the NOx SIP call and the Clean Air Interstate Rule. (Previous Subpart A addressed only annual emissions and daily emissions.) Applicability of ozone season emissions reporting is given in 51.30. Terminology (and later definitions) for X and Y coordinated are correct to reflect current practice as to which represents latitude vs. longitude. "Method accuracy descriptions" are added as a required data element, and will be further defined in the electronic reporting format. 	What is the impact on the State of the requirement to provide method accuracy descriptions?

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		clarified to indicate that this must be provided at both the facility and unit levels. This is a requirement of the current reporting format.	
		"Design capacity" is reworded to clarify that it can refer to boiler capacity, as in the parallel but differently-worded terminology of the existing 51.122	
		"Maximum nameplate capacity" is reworded to include "generator", as in the parallel but differently-worded terminology of the existing 51.122.	
		"Primary control efficiency" is replaced with "Primary collection and control efficiency" (requiring 2 values). This reflects current practice and reporting format. Control efficience alone is not	Preamble invites comment on appropriate data elements for describing type and effectiveness of controls at sources.

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		useful. "Secondary control efficiency" is replaced with "Total capture and control efficiency." This reflects current practice and reporting format, makes Tables 2a and 2b more consistent, and allows description of net effects of primary and all other control devices.	Preamble invites comment on appropriate data elements for describing type and effectiveness of controls at sources.
Table 2a	No change is proposed but comment is requested regarding stack parameters (exit gas velocity, exit gas flow rate, and stack diameter)	See preamble for explanation. Any one of these can be calculated from the other two.	Which of the three is most often subject to actual physical measurement and should be preferred for reporting?
Table 2a	No change is proposed but comment is requested regarding hr/day in operation, start time, day/wk in operation, and wk/yr in operation.	See preamble. These long- standing data elements are useful for determining typical hourly and daily emissions while a source is in operation, if annual emissions of an intermitent source are known. This is most relevant to estimation of relatively near-	Are these data elements relevant to the purposes of the emission reporting requirements? Should they be retained?

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		by short term air quality impacts, as required for new source review, for example.	
Table 2c	No change is proposed, but comment is requested regarding current requirement of Subpart A for reporting of the 4 seasonal throughputs (VMT) for highway mobile sources.	Current data reporting format does not support these data elments. Moreover, knowing the four seasonal throughput values does not allow annual emissions to be allocated to seasons correctly since emission factors vary by season. Therefore, usefulness of these data is an issue. If highway mobile source emissions are reported by month or if inputs to the relevant emissions inventory model are provided, these datda elements would be redundant.	Are these data elements relevant to the purposes of the emission reporting requirements? Should they be retained?

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Table 2b	Retitled for clarity. Changes in data elements parallel those described above for Table 2a, but limited to data elements relevant to non- point sources.		
Table 2c	Retitled for clarity. Changes in data elements parallel those described above for Table 2a, but limited to data elements relevant to mobile sources.		Note that the "activity" data element for mobile sources is the same as for the current Subpart A, and differs from that in the current 51.122. The latter is obsolete and does not represent current practice with available emission estimation methods and models.
Definitions	Previous titled "Glossary". Definitions are corrected, consolidated, and harmonized with their usage in the preceding sections and tables.	Activity throughput and fuel heat content are generalized to the period of interest, rather than being separately defined for annual and daily. Design capacity is made more relevant to the case of a boiler, using language presently in 51.122.	

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		Facility ID codes - clarify that one facility may have several codes assigned by different authorities and all must be reported if specified by the applicable data reporting format.	Presently, Subpart A is ambiguous about whether States must report ID codes they have not themselves assigned to a source.
		Inventory type is redefined to match current practice, in which a single data file covers multiple time periods, and therefore "type" is not used to distinguish time period.	
		Maximum nameplate capacity changed to maximum generator nameplate capacity, as appears now in 51.122.	
		Definition added for nitrogen oxides.	
		Area source replaced by non- point source.	
		Definition added for ozone	

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		season, copied from existing 51.122.	
		Definitions of PM (particulate matter) are clarified to more explicitly address PM10, PM2.5, condensible PM, and filterable PM.	
		Point ID code replaced by Unit ID code.	
		Point source definition revised to hinge on status as "major".	
		Pollutant code definition updated to reflect current practice.	
		Primary control efficiency is replaced with Primary capture and control efficiency.	
		Roadway class definition corrected to reflect current practice.	

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		Secondary control efficiency is deleted, since no longer in Table 2a.	
		Start time definition revised to match current practice.	
		Summer work weekday emissions changed to summer daily emissions, with longer discussion.	
		Definition added for total capture and control efficiency.	
		Type B source definition removed, no longer needed.	
		VMT by roadway class replaced by VMT by SCC, reflecting current practice to provide information by vehicle type as well as roadway type.	
		X and Y coordinate definitions corrected. X represents longitude, i.e., east-west	

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		coordinate.	
51.122 in general	Shorten by moving detailed lists of required date elements and definitions to Subpart A. However, the following data elments now listed in 51.122 are not being added to the data element tables in Subpart A. Instead, this information will be addressed in the year-to- year specification of the supporting data requirements; see proposed revision to section 51.15(c). <u>Point Sources</u> - Source of fuel heat content data - Source of emission factor <u>Non-point (area) Sources</u> - Source of emission factor - Source of activity/throughput data - Source of activity/throughput data - Source of emission factor	Lists are moved to consolidate requirements in one location.	

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	Mobile Sources - Source of emission factor - Source of activity data In addition, the current 51.122 requires the data element "Area designation." EPA proposes not to require this in the consolidated list of data elements in the new Subpart A Table 2a . Designations change from time to time, and are available from other compilations.		
51.122(b)(1)	The term "annual reporting" is replaced with "every year reporting"	To avoid possible confusion with reporting of emissions for an annual (12-month) period.	
51.122(b)(2)	The term "triennial reporting" is replaced with "three-year cycle reporting"	Clarity and consistency with terminology of 51 Subpart A.	
Previous 51.122(b)(3)	Deleted, subsequent paragraphs renumbered	Remove requirement for special reporting of 2007 emissions from all sources, for reasons stated in preamble.	

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Previous 51.122 (c), (d), (e)	Detailed lists of data elements in these three paragraphs are replaced with a single reference to Subpart A.		
Previous 51.122(f)	Renumbered as (d)		
Previous 51.122(g)	Renumbered as (e)		
Previous 51.122(h)	Renumbered as (f) and reduced to a reference to Subpart A.		
Previous 51.122(i)	Renumbered as (g) and reduced to a reference to definitions in Subpart A.		
51.125	New section	This new section states the emissions reporting requirements related to the Clean Air Interstate Rule. It is similar in structure and content to 51.122.	