



Revisions to PM Emissions from Natural Gas Combustion in Final Version of 2002 NEI

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U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Air Quality Assessment Division
Research Triangle Park, NC

The EPA will revise the **PM emissions** from **natural gas combustion** in the final version of the 2002 NEI. The revision will decrease the emissions of **PM10-PRI, PM2.5-PRI, and PM-CON** by about **95%**. The reason for this adjustment is that EPA believes that the current AP-42 factors for condensable emissions are too high. The EPA is basing this adjustment on some limited data from the draft EPA dilution method that is similar to conditional test method (CTM) 39 (<http://www.epa.gov/ttn/emc/ctm.html>) that measures PM10-PRI and PM2.5-PRI directly.

The EPA is basing this adjustment on some limited data from a pilot-scale dilution sampling method that is similar to EPA's CTM 39. None of the test data presented on the New York State Energy Research and Development Authority (NYSERDA) web site <http://www.nysERDA.org/programs/Environment/EMEP/publications.asp> under "Research Reports present findings from completed EMEP projects. - Final Reports" are cited in CTM 39. However, the revised NEI emissions factors and the assessment of the similarity of the sampling methods were based upon an analysis of the information contained in the following reports which are on the above NYSERDA web site:

Development of Fine Particulate Emission Factors for Oil- and Gas-fired Combustion Systems (909kb .pdf)

Development of Fine Particulate Emission Factors for Oil- and Gas-fired Combustion Systems: Supporting Analysis and Site Test Report

Technical Memorandum: Conceptual Model of Sources of Variability in Combustion Turbine PM10 Emissions Data (486kb .pdf)

Impact of Operating Parameters on Fine Particulate Emissions from Natural Gas-Fired Combined Cycle and Cogeneration Power Plants (324kb .pdf)

Fine Particulate Test Protocol (296kb .pdf)

Test Results for a Gas-Fired Process Heater (Site Alpha) (1.36MB .pdf)

Test Results for a Combined Cycle Power Plant with Supplementary Firing, Oxidation Catalyst and SCR at Site Bravo (940kb .pdf)

Test Results for a Gas-Fired Process Heater with Selective Catalytic NOx Reduction (Site Charlie) (1.5MB .pdf)

Test Results for a Dual-Fuel-Fired Commercial Boiler (Site Delta) (1.7MB .pdf)

Test Results for a Combined Cycle Power Plant with Oxidation Catalyst and SCR at Site Echo (841kb .pdf)

Test Results for a Diesel Fuel-Fired Compression Ignition Reciprocating Engine with a Diesel Particulate Filter at Site Foxtrot (570kb .pdf)

Test Results for a Cogeneration Plant with Supplementary Firing, Oxidation Catalyst and SCR at Site Golf (491kb .pdf)

The affected SCC's are as follows:

SCC	SCC_Description
10100601	External Combustion BoilersElectric GenerationNatural GasBoilers > 100 Million Btu/hr except Tangential
10100602	External Combustion BoilersElectric GenerationNatural GasBoilers < 100 Million Btu/hr except Tangential
10100604	External Combustion BoilersElectric GenerationNatural GasTangentially Fired Units
10100701	External Combustion BoilersElectric GenerationProcess GasBoilers > 100 Million Btu/hr
10100702	External Combustion BoilersElectric GenerationProcess GasBoilers < 100 Million Btu/hr
10101001	External Combustion BoilersElectric GenerationLiquified Petroleum Gas (LPG)Butane
10101002	External Combustion BoilersElectric GenerationLiquified Petroleum Gas (LPG)Propane
10101003	External Combustion BoilersElectric GenerationLiquified Petroleum Gas (LPG)Butane/Propane Mixture: Specify Percent Butane in Comments
10200601	External Combustion BoilersIndustrialNatural Gas> 100 Million Btu/hr
10200602	External Combustion BoilersIndustrialNatural Gas10-100 Million Btu/hr
10200603	External Combustion BoilersIndustrialNatural Gas< 10 Million Btu/hr
10200604	External Combustion BoilersIndustrialNatural GasCogeneration
10200701	External Combustion BoilersIndustrialProcess GasPetroleum Refinery Gas
10200704	External Combustion BoilersIndustrialProcess GasBlast Furnace Gas
10200707	External Combustion BoilersIndustrialProcess GasCoke Oven Gas
10201001	External Combustion BoilersIndustrialLiquified Petroleum Gas (LPG)Butane
10201002	External Combustion BoilersIndustrialLiquified Petroleum Gas (LPG)Propane
10201003	External Combustion BoilersIndustrialLiquified Petroleum Gas (LPG)Butane/Propane Mixture: Specify Percent Butane in Comments
10201401	External Combustion BoilersIndustrialCO BoilerNatural Gas
10201402	External Combustion BoilersIndustrialCO BoilerProcess Gas
10300601	External Combustion BoilersCommercial/InstitutionalNatural Gas> 100 Million Btu/hr
10300602	External Combustion BoilersCommercial/InstitutionalNatural Gas10-100 Million Btu/hr
10300603	External Combustion BoilersCommercial/InstitutionalNatural Gas< 10 Million Btu/hr
10301001	External Combustion BoilersCommercial/InstitutionalLiquified Petroleum Gas (LPG)Butane
10301002	External Combustion BoilersCommercial/InstitutionalLiquified Petroleum Gas (LPG)Propane
10301003	External Combustion BoilersCommercial/InstitutionalLiquified Petroleum Gas (LPG)Butane/Propane Mixture: Specify Percent Butane in Comments

SCC	SCC Description
10500106	External Combustion BoilersSpace HeatersIndustrialNatural Gas
10500110	External Combustion BoilersSpace HeatersIndustrialLiquified Petroleum Gas (LPG)
10500206	External Combustion BoilersSpace HeatersCommercial/InstitutionalNatural Gas
10500210	External Combustion BoilersSpace HeatersCommercial/InstitutionalLiquified Petroleum Gas (LPG)
20100201	Internal Combustion EnginesElectric GenerationNatural GasTurbine
20200201	Internal Combustion EnginesIndustrialNatural GasTurbine
20200203	Internal Combustion EnginesIndustrialNatural GasTurbine: Cogeneration
20300202	Internal Combustion EnginesCommercial/InstitutionalNatural GasTurbine
20400301	Internal Combustion EnginesEngine TestingTurbineNatural Gas
2101006000	Stationary Source Fuel CombustionElectric UtilityNatural GasTotal: Boilers and IC Engines
2101006001	Stationary Source Fuel CombustionElectric UtilityNatural GasAll Boiler Types
2101006002	Stationary Source Fuel CombustionElectric UtilityNatural GasAll IC Engine Types
2101007000	Stationary Source Fuel CombustionElectric UtilityLiquified Petroleum Gas (LPG)Total: All Boiler Types
2102006000	Stationary Source Fuel CombustionIndustrialNatural GasTotal: Boilers and IC Engines
2102006001	Stationary Source Fuel CombustionIndustrialNatural GasAll Boiler Types
2102006002	Stationary Source Fuel CombustionIndustrialNatural GasAll IC Engine Types
2102007000	Stationary Source Fuel CombustionIndustrialLiquified Petroleum Gas (LPG)Total: All Boiler Types
2103006000	Stationary Source Fuel CombustionCommercial/InstitutionalNatural GasTotal: Boilers and IC Engines
2103007000	Stationary Source Fuel CombustionCommercial/InstitutionalLiquified Petroleum Gas (LPG)Total: All Combustor Types
2103007005	Stationary Source Fuel CombustionCommercial/InstitutionalLiquified Petroleum Gas (LPG)All Boiler Types
2103007010	Stationary Source Fuel CombustionCommercial/InstitutionalLiquified Petroleum Gas (LPG)Asphalt Kettle Heaters
2104006000	Stationary Source Fuel CombustionResidentialNatural GasTotal: All Combustor Types
2104006010	Stationary Source Fuel CombustionResidentialNatural GasResidential Furnaces
2104007000	Stationary Source Fuel CombustionResidentialLiquified Petroleum Gas (LPG)Total: All Combustor Types
2199007000	Stationary Source Fuel CombustionTotal Area Source Fuel CombustionLiquified Petroleum Gas (LPG)Total: All Boiler Types
27300320	Internal Combustion EnginesOff-highway LPG-fueled EnginesIndustrial EquipmentIndustrial Fork Lift: Liquified Petroleum Gas (LPG)
30290005	Industrial ProcessesFood and AgricultureFuel Fired EquipmentLiquified Petroleum Gas (LPG): Process Heaters
30500209	Industrial ProcessesMineral ProductsAsphalt ConcreteAsphalt Heater: LPG
30590005	Industrial ProcessesMineral ProductsFuel Fired EquipmentLiquified Petroleum Gas (LPG): Process Heaters
30600105	Industrial ProcessesPetroleum IndustryProcess HeatersNatural Gas-fired

SCC	SCC Description
30600107	Industrial ProcessesPetroleum IndustryProcess HeatersLPG-fired
30622005	Industrial ProcessesPetroleum IndustryUnderground Storage and Other Remediation: Soil: LPG
30622205	Industrial ProcessesPetroleum IndustryUnderground Storage and Other Remediation: Vapor Extract: LPG
30622405	Industrial ProcessesPetroleum IndustryUnderground Storage and Other Remediation: Air Stripping: LPG
30890004	Industrial ProcessesRubber and Miscellaneous Plastics ProductsFuel Fired EquipmentLiquified Petroleum Gas (LPG): Process Heaters
31000404	Industrial ProcessesOil and Gas ProductionProcess HeatersNatural Gas
31000414	Industrial ProcessesOil and Gas ProductionProcess HeatersNatural Gas: Steam Generators
39000689	Industrial ProcessesIn-process Fuel UseNatural GasGeneral
39092051	Industrial ProcessesIn-process Fuel UseFuel Storage - Pressure TanksLPG: Withdrawal Loss
39901001	Industrial ProcessesMiscellaneous Manufacturing IndustriesProcess Heater/FurnaceLPG
40201004	Petroleum and Solvent EvaporationSurface Coating OperationsCoating Oven HeaterLiquified Petroleum Gas (LPG)
40600172	Petroleum and Solvent EvaporationTransportation and Marketing of Petroleum ProductsTank Cars and TrucksTransit Losses - LPG: Loaded with Fuel
40600173	Petroleum and Solvent EvaporationTransportation and Marketing of Petroleum ProductsTank Cars and TrucksTransit Losses - LPG: Return with Vapor
50190010	Waste DisposalSolid Waste Disposal - GovernmentAuxillary Fuel/No EmissionsLiquified Petroleum Gas (LPG)
50290010	Waste DisposalSolid Waste Disposal - Commercial/InstitutionalAuxillary Fuel/No EmissionsLiquified Petroleum Gas (LPG)
50390010	Waste DisposalSolid Waste Disposal - IndustrialAuxillary Fuel/No EmissionsLiquified Petroleum Gas (LPG)

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