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Part II

## Environmental Protection Agency

40 CFR Part 52
Air Plan Approval; Minnesota and Michigan; Revision to 2013 Taconite Federal Implementation Plan Establishing BART for Taconite Plants; Final Rule

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 52**

**[EPA–R05–OAR–2015–0196; FRL–9944–22–Region 5]**

## Air Plan Approval; Minnesota and Michigan; Revision to 2013 Taconite Federal Implementation Plan Establishing BART for Taconite Plants

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is finalizing a revision to the Federal implementation plan (FIP) addressing the requirement for best available retrofit technology (BART) for taconite plants in Minnesota and Michigan. In response to petitions for reconsideration, we are revising the nitrogen oxides ($NO_X$) limits for taconite furnaces at facilities owned and operated by Cliffs Natural Resources (Cliffs) and ArcelorMittal USA LLC (ArcelorMittal). Cliffs owns and operates Tilden Mining and United Taconite. Hibbing is owned by Cliffs, ArcelorMittal and U.S. Steel and operated by Cliffs. ArcelorMittal is owner and operator of Minorca Mine. We are also revising the sulfur dioxide ($SO_2$) requirements at two of Cliffs' facilities. We are making these changes because new information has come to light that was not available when we originally promulgated the FIP on February 6, 2013.

**DATES:** This final rule is effective on May 12, 2016.

**ADDRESSES:** EPA has established a docket for this action under Docket ID No. EPA–R05–OAR–2015–0196. All documents in the docket are listed in the *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 in *www.regulations.gov* or at the Environmental Protection Agency, Region 5, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604. This facility is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding Federal holidays. We recommend that you telephone Steven Rosenthal at (312) 886–6052 before visiting the Region 5 office.

**FOR FURTHER INFORMATION CONTACT:** Steven Rosenthal, Environmental Engineer, Attainment Planning & Maintenance Section, Air Programs Branch (AR–18J), U.S. Environmental Protection Agency, Region 5, 77 West Jackson Boulevard, Chicago, Illinois 60604, (312) 886–6052, *rosenthal.steven@epa.gov.*

**SUPPLEMENTARY INFORMATION:** Throughout this document whenever ''we,'' ''us,'' or ''our'' is used, we mean EPA. This section is arranged as follows:

I. Definitions
II. Background Information
III. Comments and Responses
IV. Revision to Equation for Normally Distributed but not Statistically Independent Data
V. What action is EPA taking?
VI. Statutory and Executive Order Reviews

### I. Definitions

For the purpose of this document, we are giving meaning to certain words or initials as follows:

- The initials BACT mean or refer to Best Available Control Technology.
- The initials BART mean or refer to Best Available Retrofit Technology.
- The initials CAA mean or refer to the Clean Air Act.
- The initials CBI mean or refer to Confidential Business Information.
- The initials CEMS means or refers to continuous emission monitoring system.
- The initials CFD mean or refer to computational fluid dynamic.
- The words EPA, we, us, or our mean or refer to the United States Environmental Protection Agency.
- The initials FIP mean or refer to Federal Implementation Plan.
- The initials LNB mean or refer to low-$NO_X$ burners.
- The initials MACT mean or refer to Maximum Achievable Control Technology.
- The initials MCEA means or refers to the Minnesota Center for Environmental Advocacy.
- The initials MMBtu mean or refer to million British thermal units.
- The initials MW mean or refer to megawatts.
- The initials NAAQS mean or refer to National Ambient Air Quality Standards.
- The initials NESHAP mean or refer to National Emission Standards for Hazardous Air Pollutants.
- The initials NSPS mean or refer to Standards of Performance for New Stationary Sources.
- The initials $NO_X$ mean or refer to nitrogen oxides.
- The initials NPCA means or refers to the National Parks Conservation Association.
- The initials NTAA means or refers to the National Tribal Air Association.
- The initials PRB mean or refer to the Powder River Basin.
- The initials RHR mean or refer to the EPA's Regional Haze Rule.
- The initials RMB mean or refer to RMB Consulting and Research.
- The initials SCR mean or refer to Selective Catalytic Reduction.
- The initials SIP mean or refer to State Implementation Plan.
- The initials $SO_2$ mean or refer to sulfur dioxide.
- The initials UPL mean or refer to Upper Prediction Limit.

### II. Background Information

#### *A. Requirements of the Clean Air Act and EPA's Regional Haze Rule*

In section 169A of the 1977 Amendments to the CAA, Congress created a program for protecting visibility in the nation's national parks and wilderness areas. This section of the CAA establishes as a national goal the ''prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas [1] which impairment results from manmade air pollution.'' Congress added section 169B to the CAA in 1990 to address regional haze issues. EPA promulgated a rule to address regional haze on July 1, 1999. 64 FR 35714 (July 1, 1999), codified at 40 CFR part 51, subpart P (herein after referred to as the ''Regional Haze Rule''). The RHR revised the existing visibility regulations to add provisions addressing regional haze impairment and established a comprehensive visibility protection program for Class I areas. The requirements for regional haze, found at 40 CFR 51.308 and 51.309, are included in EPA's visibility protection regulations at 40 CFR 51.300–309.

#### *B. Best Available Retrofit Technology (BART)*

Section 169A of the CAA directs states, or EPA if developing a FIP, to

[1] Areas designated as mandatory Class I Federal areas consist of national parks exceeding 6000 acres, wilderness areas and national memorial parks exceeding 5000 acres, and all international parks that were in existence on August 7, 1977. 42 U.S.C. 7472(a). In accordance with section 169A of the CAA, EPA, in consultation with the Department of Interior, promulgated a list of 156 areas where visibility is identified as an important value. 44 FR 69122 (November 30, 1979). The extent of a mandatory Class I area includes subsequent changes in boundaries, such as park expansions. 42 U.S.C. 7472(a). Although states and tribes may designate as Class I additional areas which they consider to have visibility as an important value, the requirements of the visibility program set forth in section 169A of the CAA apply only to ''mandatory Class I Federal areas.'' Each mandatory Class I Federal area is the responsibility of a ''Federal Land Manager.'' 42 U.S.C. 7602(i). When we use the term ''Class I area'' in this action, we mean a ''mandatory Class I Federal area.''

evaluate the use of retrofit controls at certain larger, often uncontrolled, older stationary sources in order to address visibility impacts from these sources. Specifically, section 169A(b)(2)(A) of the CAA requires EPA to develop a FIP that contains such measures as may be necessary to make reasonable progress toward the natural visibility goal, including a requirement that certain categories of existing major stationary sources [2] built between 1962 and 1977 procure, install, and operate the BART as determined by EPA. Under the RHR, states (or in the case of a FIP, EPA) are directed to conduct BART determinations for such ''BART-eligible'' sources that may reasonably be anticipated to cause or contribute to any visibility impairment in a Class I area.

On July 6, 2005, EPA published the *Guidelines for BART Determinations Under the Regional Haze Rule* at appendix Y to 40 CFR part 51 (hereinafter referred to as the ''BART Guidelines'') to assist states and EPA in determining which sources should be subject to the BART requirements and in determining appropriate emission limits for each applicable source. 70 FR 39104.

The process of establishing BART emission limitations includes identifying those sources that meet the definition of ''BART-eligible source'' set forth in 40 CFR 51.301,[3] determining which of these sources ''emits any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility in any such area'' (a source which fits this description is ''subject to BART''), and, for each source subject to BART, identifying the best available type and level of control for reducing emissions.

States, or EPA if developing a FIP, must address all visibility-impairing pollutants emitted by a source in the BART determination process. The most significant visibility impairing pollutants are $SO_2$, $NO_X$, and particulate matter.

A SIP or FIP addressing regional haze must include source-specific BART emission limits and compliance schedules for each source subject to BART. Once a state or EPA has made a BART determination, the BART controls must be installed and operated as expeditiously as practicable, but no later than five years after the date of the final SIP or FIP. *See* CAA section 169A(g)(4) and 40 CFR 51.308(e)(1)(iv). In addition to what is required by the RHR, general SIP requirements mandate that the SIP or FIP include all regulatory requirements related to monitoring, recordkeeping, and reporting for the BART controls on the source. *See* CAA section 110(a).

*C. Regulatory and Legal History of the 2013 Taconite FIP*

On February 6, 2013, EPA promulgated a FIP (78 FR 8706) that included BART limits for taconite furnaces subject to BART in Minnesota and Michigan. EPA took this action because Minnesota and Michigan had failed to meet a statutory deadline to submit their Regional Haze SIPs and subsequently failed to require BART at the taconite facilities. Cliffs, ArcelorMittal, and the State of Michigan petitioned the Eighth Circuit Court of Appeals for review of the FIP, and, on May 17, 2013, Cliffs and ArcelorMittal filed a joint motion for stay of the final rule, which was granted by the Eighth Circuit on June 14, 2013, and is still in effect.

EPA received petitions for reconsideration of the 2013 Taconite FIP from the National Mining Association on March 8, 2013, ArcelorMittal on March 22, 2013, the State of Michigan on April 1, 2013, Cliffs on April 3, 2013, Congressman Richard M. Nolan on April 8, 2013, the State of Minnesota on April 8, 2013, and United States Steel Corporation (U.S. Steel) on November 26, 2013.

In a related action, EPA published a final partial disapproval of the Michigan and Minnesota Regional Haze SIPs on September 30, 2013 (78 FR 59825), for failure to require BART for $SO_2$ and $NO_X$ emissions from taconite furnaces subject to BART. By petitions dated November 26, 2013, Cliffs and U.S. Steel petitioned EPA pursuant to section 307(d)(7)(B) of the CAA for reconsideration of EPA's partial disapproval of the Michigan and Minnesota Regional Haze SIPs. Further, Cliffs, ArcelorMittal, Michigan, and U.S. Steel petitioned the Eight Circuit Court of Appeals for review of the final rule partially disapproving the Michigan and Minnesota Regional Haze SIPs.

EPA subsequently reached a settlement agreement with Cliffs, ArcelorMittal, and Michigan regarding issues raised by these parties in their petitions for review and reconsideration. Notice of the settlement was published in the **Federal Register** on January 30, 2015 (80 FR 5111), and the settlement agreement was fully executed on April 9, 2015. Pursuant to the settlement agreement, EPA granted partial reconsideration of the 2013 Taconite FIP on July 2, 2015, based on new information raised in Cliffs', ArcelorMittal's, and Michigan's petitions for reconsideration. EPA did not grant reconsideration of the 2013 SIP disapprovals because EPA continues to believe that BART for taconite plants involves significant reductions of $NO_X$ and $SO_2$ emissions that were not required in the Michigan and Minnesota SIPs.

**III. Comments on Proposed Action and Responses**

On October 22, 2015, EPA published a **Federal Register** action entitled ''Air Plan Approval; Minnesota and Michigan; Revision to Taconite Federal Implementation Plan; Proposed Rule'' (80 FR 64160), which proposed to revise the 2013 Taconite FIP with respect to the BART emission limitations and compliance schedules for the following taconite plants: United Taconite, Hibbing Taconite, Tilden Mining, and ArcelorMittal Minorca Mine. Cliffs is the owner and operator of the United Taconite and Tilden Mining facilities and part owner and operator of Hibbing Taconite. ArcelorMittal is the owner and operator of the Minorca Mine facility and a part owner of the Hibbing Taconite facility.

EPA proposed to revise the $NO_X$ limits and compliance schedules for all four facilities and to revise the $SO_2$ requirements for Tilden Mining and United Taconite in response to new information that became available after the close of the public comment period of the 2013 FIP. Specifically, Cliffs and ArcelorMittal submitted information to EPA that suggested high-stoichiometric LNBs, which formed the basis of the original $NO_X$ limits, posed serious technical hurdles. Consequently, EPA proposed to determine that BART for taconite facilities was low-stoichiometric LNBs (for grate kilns) and a combination of water and steam injection and pre-combustion technologies (for straight-grate kilns) and proposed revised $NO_X$ limits based upon these technologies. Cliffs also submitted information showing that United Taconite could not burn very low-sulfur coal without challenges and that Tilden intended to burn mixed low-sulfur fuels instead of 100% natural gas. As a result, EPA proposed to revise the $SO_2$ limits for these facilities.

The public comment period on the proposal ended on December 23, 2015. EPA received comments from the National Park Service of the United

[2] The set of ''major stationary sources'' potentially subject to BART is listed in CAA section 169A(g)(7), and includes ''taconite ore processing facilities.''

[3] BART-eligible sources are those sources that have the potential to emit 250 tons or more of a visibility-impairing air pollutant, were not in operation prior to August 7, 1962, but were in existence on August 7, 1977, and whose operations fall within one or more of 26 specifically listed source categories. 40 CFR 51.301.

States Department of Interior, the National Parks Conservation Association (NPCA), the Minnesota Center for Environmental Advocacy (MCEA), United States Steel Corporation, ArcelorMittal USA LLC, the Forest Service of the United States Department of Agriculture (USDA), Cliffs Natural Resources, and the Fond du Lac Band of Lake Superior Chippewa. The National Tribal Air Association (NTAA) requested an extension of the public comment period of 120 days. A 30-day extension of the public comment period was provided, but NTAA did not subsequently submit comments. EPA fully considered all of the comments and responds to each comment below. Based on our consideration of the comments, we are finalizing the $NO_X$ and $SO_2$ emission limits and compliance schedules as proposed, with two minor exceptions explained in Section V.

*A. Comments by the Forest Service*

*Comment:* The Forest Service disagreed with EPA's determination that LNBs should be eliminated as a potential BART option for straight-grate kilns. The Forest Service stated that LNBs are included in the permits for straight-grate furnaces for Essar Steel (Essar) in Minnesota and Magnetation in Indiana, which (unlike Essar) has commenced operation. The permit limits for each of the two LNB-equipped straight-grate kilns are 0.25 lbs $NO_X$/MMBTU, which is lower than the limits proposed by EPA.

*Response:* EPA disagrees that the situations at Essar and Magnetation provide sufficient evidence that LNBs would be technically feasible at the Minorca Mine and Hibbing facilities. Essar and Magnetation were subject to the BACT requirement that applies to new and modified sources. Consequently, these facilities were able to integrate LNBs into the design and construction of their furnaces. In contrast, the furnaces at Minorca Mine and Hibbing were not designed to accommodate LNBs. As discussed in the proposal, EPA eliminated LNBs from consideration due to the technical challenges associated with a retrofit application on the unique straight-grate kilns at Minorca Mine and Hibbing. We also note that the Essar straight-grate furnace is still not operational, and Magnetation is not an iron ore processing facility and therefore is not classified as a taconite facility as defined by the taconite MACT (40 CFR part 63 subpart RRRRR). While Magnetation's permit limit is 0.25 lbs $NO_X$/MMBTU, the results from an August-September 2015 test indicate emissions ranging from 0.773 lbs $NO_X$/MMBTU to 1.304 lbs $NO_X$/MMBTU at that facility. Finally, we note that we are finalizing an initial emission limit of 1.2 lbs $NO_X$/MMBTU (subject to upward revision only in unlikely scenarios) for the Minorca Mine and Hibbing furnaces, which is consistent with the limit in our 2013 FIP, but based on the installation of different technologies.

*Comment:* The Forest Service stated that EPA seems to assume that the only way to meet the existing 0.6 percent sulfur limit is to use western sub-bituminous coal, which will not work in the furnace due to its lower heating value. The Forest Service did a quick search of U.S. coal data (US DOE, NETL, Detailed Coal Specifications, Quality Guidelines for Energy System Studies, Final Report, DOE/NETL–401/012111, January 2012, page 31) and could find no eastern bituminous coal at 0.6 percent sulfur, but was able to find a low-volatile, eastern bituminous coal with very high heating value at 0.66 percent sulfur, which is far below the new limit proposed by EPA for United Taconite of 1.5 percent sulfur. The Forest Service stated that if an adjustment is warranted to the existing limit, it should be based on low-sulfur content eastern bituminous coal, such as the one at 0.66 percent sulfur.

*Response:* EPA disagrees with this comment. The primary $SO_2$ emission limit for BART at United Taconite is the 529 lbs $SO_2$/hr aggregate limit on lines 1 and 2. This BART limit, which is based upon the use of low-sulfur fuels (a combination of natural gas and coal), will result in 1900 tons per year of $SO_2$ reductions. In contrast, the 1.5 percent sulfur limit is an operational limit that EPA imposed after Cliffs requested an adjustment to its baseline emission rate to be used in evaluating potential BART controls. Under the BART guidelines, the baseline emission rate ordinarily should represent a realistic depiction of anticipated annual emissions for the source based upon actual emissions from a baseline period. See 40 CFR part 51, appendix Y. However, when future operating parameters, such as type of fuel, will differ from past practice, and if this projection has a deciding effect in the BART determination, then the operating parameter must be made into an enforceable limitation. Id. EPA imposed the original 0.60 percent sulfur limit on the coal burned at United Taconite to comply with this provision. However, Cliffs indicated in its petition for reconsideration that 0.60 percent sulfur coal posed several issues for its furnaces. As a result, the EPA proposed to increase the operational limit to 1.5 percent sulfur, but this change will not have an effect on emissions at United Taconite due to the 529 lbs $SO_2$/hr limit. In essence, United Taconite will now be required to burn more natural gas and less coal (or all gas) to meet its BART limit than the facility would have under a 0.60 percent sulfur limit.

*Comment:* The Forest Service asked for an explanation as to why Minorca Mine and Tilden have the longest deadlines for compliance when they each have only one furnace at their facility.

*Response:* To establish an overall compliance schedule that is as expeditious as practicable, we grouped the furnaces according to whether they are straight-grate kilns or grate kilns, not according to which facility they belong. By grouping furnaces according to design and function rather than facility, Cliffs and ArcelorMittal will be able to take advantage of the experience gained from the first installation of $NO_X$ reduction technologies at a straight-grate kiln and grate kiln at the other furnaces. For example, Tilden will be able to take advantage of the experience of the earlier installation of a low-stoichiometric LNB on a grate kiln at United Taconite, while ArcelorMittal will be able to take advantage of the earlier installation of $NO_X$ reduction technologies on a straight-grate kiln at Hibbing. We believe that this staggered schedule is necessary because, although the selected $NO_X$ controls have been subject to extensive engineering studies, they have not been used on taconite furnaces in the United States to date. Such experience is necessary to ensure proper operation of these furnaces. Improper burner operation could adversely affect heat distribution throughout the furnace as well as pellet quality.

*Comment:* The Forest Service stated that it would like the opportunity to review and comment on the final emission limits.

*Response:* EPA has provided an extremely detailed and objective step-by-step procedure that will be used for determining the final emission limits. The notice of proposed rulemaking provided adequate information about the basis and timing of the final limits such that no further proposals will be necessary. The equations and an explicit explanation of how the final limits will be established are contained in the proposal, so the Forest Service could have raised any concerns during the public comment period. EPA is taking this approach in order to expedite the establishment of final enforceable limits for these facilities within the context of a process that provides reasonable time to design and install emission controls,

to obtain data needed for determining control effectiveness, and to minimize the time then needed to establish final enforceable limits. EPA has carefully considered the Forest Service's comments, but does not believe that a second comment period is necessary.

*Comment:* The Forest Service requested a description of how plant shutdowns will be handled.

*Response:* EPA is unsure what the commenter means by ''plant shutdowns,'' but presumes that the Forest Service may be concerned that the emission limits could be relaxed during a shutdown. No special consideration has been given to plant shutdowns in this respect. The $NO_X$ limits are based on the production level and the quantity of fuel burned.

*Comment:* The Forest Service asked EPA to describe what will be done if adequate data are not collected within the timeframe envisioned in the schedule to establish a final emission limit.

*Response:* The eight-month testing period, during which controls will be in place and CEMS will be operational, should provide ample time for collecting data adequate to establish a final limit.

*Comment:* The Forest Service asked EPA to specify what design parameters will be monitored for the different control technologies.

*Response:* The design parameters will be established in the engineering reports that are required by the settlement agreement and this action. We anticipate that the percent stoichiometric primary combustion air and gas/coal ratio when co-firing will be important variables.

*B. Comments by the National Park Service*

*Comment:* The National Park Service, as well as NPCA and MCEA, commented on the technical feasibility of controlling $NO_X$ using SCR and encouraged EPA to further evaluate various configurations of SCR, including tail-end SCR with gas stream reheat (hereinafter referred to as ''SCR with reheat'').

*Response:* There are several air pollution control technology analyses involving the potential use of SCR and SCR with reheat on indurating furnace hood exhaust. In these analyses (Magnetation BACT, Essar BACT, and Tilden BART), SCR with reheat was rejected for not being cost-effective, while upstream SCR was rejected as technically infeasible due to the likelihood that the exhaust stream would foul the catalyst.

In a study conducted by Hatch for U.S. Steel, SCR with reheat was considered as a potential control option, but further discussion with potential vendors resulted in the determination that SCR with reheat is not a technically feasible control option for taconite indurating furnaces. One potential vendor, Mitsubishi Power Systems, cited temperature and layout as factors rendering SCR with reheat less than optimal for $NO_X$ control from U.S. Steel's Minntac taconite indurating furnaces. LKAB, a taconite facility in Sweden, has an SCR with reheat on its KK4 taconite pelletizing line. Alstom, the SCR vendor for LKAB, declined twice to bid on an SCR with reheat at Minntac, citing technical difficulties with the SCR with reheat at LKAB. These difficulties included operating within the narrow temperature range required by SCR with reheat. Further, LKAB is looking into process optimization and better burners to reduce $NO_X$ as opposed to installing another SCR with reheat in the future. It is important to note that SCR with reheat, even if it were technically feasible, would result in additional energy and environmental costs in the form of increased usage of natural gas and greenhouse gas emissions, respectively. While increased energy and environmental penalties are not preclusive, they further weigh against any additional analysis of SCR with reheat as a viable option for indurating furnaces at this time. We expect Minnesota and Michigan to reevaluate SCR with reheat as a potential option for making reasonable progress in future planning periods, but reject the technology as BART for the Minnesota and Michigan taconite facilities at this time.

*Comment:* The National Park Service concurred with the maximum 3.0 lbs $NO_X$/MMBTU limit when burning natural gas only at grate kilns. However, the National Park Service did not believe that allowing $NO_X$ emissions to increase by 87 percent above expected levels when burning a gas/coal mix at grate kilns is justified.

*Response:* Low-stoichiometric LNBs, as designed by FCT Combustion (FCT), are designed to reduce $NO_X$ while maintaining pellet quality and production and optimizing fuel efficiency. As a result, this LNB was selected to establish BART limits for Cliffs' grate-kiln furnaces. FCT's computational fluid dynamic (CFD) modeling for co-firing at 30 percent gas and 70 percent coal indicated a reduction from a base case of 1.6–5.4 lbs $NO_X$/MMBTU with a typical baseline value of 2.5 lbs $NO_X$/MMBTU, to 2.04 lbs $NO_X$/MMBTU. Therefore, an increase from 2.04 to 2.5 lbs $NO_X$/MMBTU is a 23 percent increase above expected levels, which is more meaningful than the 67 percent increase (not 87 percent) above the low end of the range of the final emission limits. It should be noted that, in addition to the uncertainty resulting from the lack of experience in the use of low-stoichiometric LNBs, there is additional uncertainty because the CFD modeling was only performed for co-firing at 30 percent gas and 70 percent coal. Furthermore, a rigorous demonstration would have to be made that 1.5 lbs $NO_X$/MMBTU cannot be met before the limit is adjusted and an alternative final limit is set.

*Comment:* The National Park Service was concerned that, although the proposed FIP requires the $NO_X$ reduction technologies for the straight-grate furnaces at Minorca Mine and Hibbing be designed to meet a limit of 1.2 lbs $NO_X$/MMBTU, EPA is proposing to increase the final limit up to 1.8 lbs $NO_X$/MMBTU if a rigorous demonstration is made that the 1.2 lbs $NO_X$/MMBTU limit cannot be met. This represents a 50 percent increase above the expected emission rate and no justification is provided for such a large ''safety margin.''

*Response:* As discussed in the proposed rulemaking, EPA is confident that Minorca Mine and Hibbing can meet a limit of 1.2 lbs $NO_X$/MMBTU based upon the engineering report prepared for ArcelorMittal that assesses the use of water and steam injection and pre-combustion technologies. However, because this suite of technologies has not previously been used on straight-grate kilns, some uncertainty remains regarding the potential effect on pellet quality. As a result, EPA has provided a procedure by which the final limits for Minorca Mine and Hibbing could be revised upwards to as much as 1.8 lbs $NO_X$/MMBTU. It is important to note, however, that EPA has included rigorous requirements that must be met before any relaxing of the initial 1.2 lbs $NO_X$/MMBTU limit would be allowed.

*Comment:* The National Park Service stated that EPA has the authority to limit the sulfur content of the fuels already fired at United Taconite. The National Park Service understood that United Taconite has identified problems with the characteristics of the 0.6 percent sulfur coal originally proposed by EPA and the compatibility of that coal with the United Taconite furnace. The National Park Service cited EPA's statement that it ''is also establishing a limitation on the coal to be used by requiring the coal have a sulfur content

no greater than 1.5 percent sulfur by weight based on a monthly block average.'' However, the National Park Service stated that it is aware of eastern bituminous coals that have much lower sulfur contents and requested that EPA evaluate the potential for combustion of such coals at United Taconite.

*Response:* EPA disagrees with this comment. The primary $SO_2$ emission limit for BART at United Taconite is the 529 lbs $SO_2$/hr aggregate limit on lines 1 and 2. This BART limit, which is based upon the use of low-sulfur fuels (a combination of natural gas and coal), will result in 1900 tons per year of $SO_2$ reductions. In contrast, the 1.5 percent sulfur limit is an operational limit that EPA imposed after Cliffs requested an adjustment to its baseline emission rate to be used in evaluating potential BART controls. Under the BART guidelines, the baseline emission rate ordinarily should represent a realistic depiction of anticipated annual emissions for the source based upon actual emissions from a baseline period. See 40 CFR part 51, appendix Y. However, when future operating parameters, such as type of fuel, will differ from past practice, and if this projection has a deciding effect in the BART determination, then the operating parameter must be made into an enforceable limitation. Id. EPA imposed the original 0.60 percent sulfur limit on the coal burned at United Taconite to comply with this provision. However, Cliffs indicated in its petition for reconsideration that 0.60 percent sulfur coal posed several issues for its furnaces. As a result, the EPA proposed to increase the operational limit to 1.5 percent sulfur, but this change will not have an effect on emissions at United Taconite due to the 529 lbs $SO_2$/hr limit. In essence, United Taconite will now be required to burn more natural gas and less coal (or all gas) to meet its BART limit than the facility would have under a 0.60 percent sulfur limit.

*Comment:* The National Park Service stated that EPA was apparently proposing to use hourly emission rates measured by a CEMS to derive the UPL. The National Park Service questioned the appropriateness of basing the UPL on hourly values if EPA is setting a 30-day (or 720-hour) rolling average limit. The National Park Service was concerned that the use of hourly values would introduce excess variability into the calculation and could lead to a higher UPL.

*Response:* When the UPL equation for normally distributed and statistically independent data is used, the average , standard deviation (s), and number of values (n) are based on the hourly data. The term number of values used to calculate the test average) is based on the compliance period, *i.e.,* 720 for a 720-hour average and not 1. This results in a lower and more stringent UPL than if 1. However, when setting a 720-hour average emission limit using the nonparametric equation, the data set used would be the 720-hour averages rather than the raw hourly data.

*C. Comments by the National Parks Conservation Association (NPCA)*

1. NPCA Incorporated the Comments Submitted by the National Park Service

*Comment:* NPCA restated the National Park Service comments as follows:

—SCR remains a feasible technical option for limiting $NO_X$ from taconite facilities. While two SCR vendors declined to bid on the $NO_X$ reduction testing at Minntac, this is an insufficient basis to reject SCR across the taconite industry. EPA should revisit this decision and evaluate various configurations of SCR that would serve to further reduce $NO_X$ emissions beyond the limits in the proposed settlement.

—EPA's proposed $NO_X$ limits for the gas/coal scenario at United Taconite and Tilden are improper because they are up to 87 percent higher than the limits in the 2013 FIP.

—EPA's proposed $NO_X$ limits for Hibbing and Minorca Mine are improper because they are up to 50 percent higher than the limits in the 2013 FIP.

—EPA should require the use of an alternative low-sulfur coal at United Taconite.

*Response:* EPA has responded in detail to these comments in responses to the comments by the National Park Service (see above).

*Comment:* NPCA stated that the proposal specifies that increased limits are permissible where the industry makes a rigorous demonstration that lower limits cannot be met. NPCA requested that any such demonstration be made available to the public for review and comment.

*Response:* EPA has provided an extremely detailed and objective step-by-step procedure for determining the final emission limits. The notice of proposed rulemaking provided adequate information about the basis and timing of the final limits such that no further proposals will be necessary. EPA is taking this approach in order to expedite the establishment of final enforceable limits for these facilities within the context of a process that provides reasonable time to design and install emission controls, to obtain data needed for determining control effectiveness, and to minimize the time then needed to establish final enforceable limits. The proposal encouraged commenters to comment on any issues that might be anticipated to arise at any point in the process described in the proposal, and NPCA has not identified any such issues.

2. NPCA Incorporated Its March 2, 2015 Comments Regarding the Settlement Agreement

*Comment:* NPCA stated that the changes in emission limits between the 2013 FIP and the settlement agreement appear to significantly weaken the terms of the 2013 FIP because the emission limits are far less stringent. Although NPCA did not have the necessary level of detailed information to perform a precise comparison, NPCA's rough calculations indicated that the limitations in attachment A of the settlement agreement would allow for pollution at or above the actual baseline emissions from the taconite facilities, that is, they represent no reduction (or at a minimum, no significant reduction) in pollution.

*Response:* As discussed in the five-step BART determinations in the proposal, there are significant emission reductions from the revised limits. There will be an estimated total of 3,000 tons per year of $NO_X$ reductions from Tilden and United Taconite, a total of 7,400 tons per year of $NO_X$ reductions from Minorca Mine and Hibbing, 1,900 tons per year of $SO_2$ reductions from United Taconite, and 300 tons of $SO_2$ reductions from Tilden. The only $NO_X$ emission limits that are definitely less stringent than those in the 2013 FIP are the $NO_X$ emission limits for Tilden and United Taconite when burning solely natural gas. The final $NO_X$ emission limits for Hibbing and Minorca Mine, as well as Tilden and United Taconite when co-firing coal and natural gas, are expected to be the same as, or close to, the 2013 FIP limits. There may also be an increase in $SO_2$ emissions from Tilden, but this should be a fairly small increase as Tilden will be solely burning natural gas and very low (0.6 percent) sulfur coal.

*Comment:* NPCA argued that the timeframes for compliance are significantly longer than in the 2013 FIP.

*Response:* The compliance schedule is generally similar to the FIP except that implementation has been delayed because of the court-imposed stay. The main differences between the two schedules are that Tilden must install controls within 50 months (compared with 26 months in the 2013 FIP) and Minorca Mine must install controls

within 44 months (compared with 26 months in the 2013 FIP). The staggered compliance schedule, which includes additional time for Tilden and ArcelorMittal, is necessary because the $NO_X$ controls selected as BART have not been used on taconite furnaces in the United States. Such experience is necessary to ensure proper operation of these furnaces. The planned controls could adversely affect heat distribution throughout the furnace as well as pellet quality.

*Comment:* NPCA stated that, in proposing the settlement, EPA offered no support to suggest why such a significant weakening of much needed and statutorily required limits was appropriate. NPCA was thus at a loss to comment on the rationale behind the changes.

*Response:* As discussed in a prior response, EPA does not agree that there has been a significant weakening of the requirements for taconite facilities. EPA's basis for all changes was contained in the proposed FIP revision and its associated docket.

*Comment:* NPCA stated that EPA must provide documentation of the reasons for the proposed changes in the form of publicly available information. EPA cannot rely strictly on confidential information, which does not allow the public to review and consider the changes proposed.

*Response:* Publicly available information in support of the FIP is contained in the docket.

*Comment:* NPCA stated that the settlement referenced ''equitable treatment of facilities not included in this settlement.'' This would appear to refer to the taconite facilities covered by the 2013 FIP but not included in the settlement. To the extent that this statement refers to the potential weakening of limits imposed at other facilities in the taconite FIP, the increase in pollution that appears in the settlement is all the more concerning.

*Response:* EPA has not proposed to change the emission limits for other facilities covered by the 2013 FIP at this time.

*Comment:* NPCA stated that the timeframe for compliance detailed in the settlement agreement was inappropriate. The CAA requires that controls required under BART be implemented within five years of the final rule. In this case, the rule was finalized in January 2013, so compliance with emission limits must be by January 2018.

*Response:* We disagree with this comment. Section 169A(g)(4) of the CAA requires compliance with BART emission limits no later than five years after ''the date of promulgation of a . . . [FIP] *revision*.'' In this final rule, we are promulgating a revision to the 2013 FIP that includes new BART determinations based on new technologies. These BART determinations fully supersede the determinations that were made in the 2013 FIP. The taconite facilities must comply with the new BART emission limits in a staggered schedule that we have determined is as expeditious as practicable. Full compliance at all facilities will be achieved no later than five years from the date of the promulgation of this FIP revision.

*D. Comments by Cliffs Natural Resources*

*Comment:* Cliffs supported the proposed FIP, including the initial limits, the staggered compliance schedule, and the formula for setting final limits if the initial limits cannot be achieved without adverse impacts on pellet quality. However, Cliffs objected to EPA's statement in the proposed FIP preamble that ''there are no significant costs or environmental impacts'' associated with the selected BART technologies. Cliffs will be required to expend millions of dollars to design and implement changes to its furnaces. There are also costs associated with lost production during downtime and shakedown, as well as the potential for additional fuel consumption when the BART technologies are operational.

*Response:* EPA acknowledges that there will be costs associated with the BART control technologies employed by Cliffs. EPA's full statement in the preamble was that ''there are no significant costs or environmental impacts associated with this technology that would necessitate its elimination from consideration as BART.'' EPA continues to believe that the costs, energy, and non-air quality impacts associated with the selected BART controls are reasonable.

*Comment:* Cliffs stated that EPA's proposal included a new requirement to report CEMS and pellet quality data at the end of a period that did not fall within the preceding calendar quarter within 7 days of the close of the period. Reporting this information within 7 days is impracticable, as it does not provide the facility sufficient time to complete the appropriate laboratory analysis and quality assurance expected for the data. Cliffs acknowledged EPA's need to include a provision to address the timely reporting of data, but requested that the reporting obligation be changed from 7 days to 30 days to allow for quality assurance checks.

*Response:* Using United Taconite Line 2 as an example, the settlement agreement states that, 44 months from the effective date of the rule, Cliffs must provide results from pellet quality analyses no later than 30 days from the end of each calendar quarter until 52 months from the effective date of the rule. No later than 55 months after the effective date of the rule, EPA will take final agency action by publishing the $NO_X$ limits in the **Federal Register**. Assuming that the effective date of the rule is June 15, 2016, then 52 months from the effective date is October 15, 2020, and 55 months is January 15, 2021. The end of the quarter would be December 31, 2020, so under the settlement language, the pellet quality data from October 1 through October 15, 2020, would not be due until January 30, 2021, which is too late to be considered in establishing the final emission limit. According to the language in the proposal, the pellet quality analyses would need to be submitted to EPA by October 22, 2020. Accepting Cliffs' suggested revision from 7 to 30 days would require the pellet quality analysis to be submitted to EPA by November 14, 2020. EPA accepts Cliffs' basis for increasing the reporting requirement from 7 to 30 days and will make this revision in the final FIP because it will not significantly interfere with expeditiously setting the final limits.

*Comment:* Cliffs stated that United Taconite's pellet quality reporting obligations in the proposed FIP mistakenly refer to ''Tilden's ISO 9001 quality management system'' but should refer to ''United Taconite's ISO 9001 quality management system.''

*Response:* EPA acknowledges the error and has made the correction in the final FIP.

*E. Comments by the Fond du Lac Band of Lake Superior Chippewa*

*Comment:* The Band urged a fair, scientifically sound, and feasible process for all stakeholders, including affected and surrounding communities. The taconite industry should not be allowed to dictate its own compliance schedule or prolong compliance with Federal laws and regulations.

*Response:* EPA agrees with this comment and has implemented a process to establish final BART limits based upon the most current, relevant, and scientifically sound information available. The taconite plant owners were in a unique position to acquire and provide the needed scientific information and understandably had motivation to do so. However, they are not dictating their own compliance schedule.

*Comment:* The Band argued that the emission limits in the 2013 FIP are more reasonable in terms of protecting visibility than the limits proposed in the revised FIP.

*Response:* While we acknowledge that a few of the emission limits in the 2013 FIP were more stringent than the limits in our proposed FIP revision, and were thus more protective of visibility, we disagree that the original limits were more reasonable. For the reasons explained in our proposal, new information provided by the taconite companies shows that the technology on which the 2013 FIP limits were based, high-stoichiometric LNBs, would adversely affect pellet quality. As a result, we proposed new BART determinations based on new technologies. These technologies will still result in significant emission reductions, improving visibility in the Class I areas in Minnesota and Michigan.

*Comment:* The Band stated that the compliance schedule in the 2013 FIP was more reasonable from a health protection standpoint. The Band stated that it preferred the 2013 FIP schedule over the longer compliance schedule in the proposed FIP revision. Alternatively, a compromise schedule between the original schedule and the proposed schedule would be acceptable.

*Response:* Please see our response to a similar comment from NPCA.

*Comment:* The Band stated that Eastern bituminous coals are available that could meet both the requirements for a low-sulfur coal (0.66%) and a very high heating value (US DOE, NETL, Detailed Coal Specifications, Quality Guidelines for Energy System Studies, Final Report, DOE/NETL–401/012111, January 2012, page 31).

*Response:* Please see our response to a similar comment from the Forest Service.

*Comment:* The Band stated that SCR is considered the best available retrofit technology that has been used at other coal facilities and could feasibly reduce $NO_X$ emissions for taconite furnaces. The Band agreed with the National Park Service that the use of tail-end SCR with steam reheat should be evaluated for BART.

*Response:* Please see our response to a similar comment from the National Park Service.

*Comment:* The Band noted that EPA proposed to set limits for United Taconite and Tilden of 3.0 lbs $NO_X$/MMBTU when burning natural gas and 2.5 lbs $NO_X$/MMBTU when burning a gas/coal mix if the presumptive limits of 2.8 lbs $NO_X$/MMBTU and 1.5 lbs $NO_X$/MMBTU, respectively, cannot be met. The Band noted that a limit of 2.5 lbs $NO_X$/MMBTU (gas coal mix) is 67 percent higher than the predicted emission rate of 1.5 lbs $NO_X$/MMBTU. The Band acknowledged that some uncertainty is involved in developing the use of a new control technology, but argued that this range of emission limits is too large.

*Response:* Please see our response to a similar comment from the National Park Service.

*Comment:* The Band stated that EPA recently implemented a national policy on Environmental Justice for Working with Federally Recognized Tribes and Indigenous Peoples. EPA must uphold its duties to protect the interests of tribes and their treaty rights and explain how the proposed FIP complies with EPA's existing guidance and policies with Federally Recognized Tribes and Indigenous Peoples.

*Response:* The U.S. Constitution defines treaties as part of the supreme law of the land with the same legal force as Federal statutes. Treaties are to be interpreted in accordance with the Federal Indian canons of construction, a set of long-standing principles developed by courts to guide the interpretation of treaties between the U.S. government and Indian tribes. As the Supreme Court has explained, treaties should be construed liberally in favor of tribes, giving effect to the treaty terms as tribes would have understood them, with ambiguous provisions interpreted for their benefit. Only Congress may abrogate Indian treaty rights, and courts will not find that abrogation has occurred absent clear evidence of congressional intent.

EPA has committed to consider all relevant information obtained during tribal consultation to help ensure that EPA's actions do not conflict with treaty rights, to help ensure that EPA is fully informed when it seeks to implement its programs, and to further protect treaty rights and resources when it has discretion to do so. We have done so in this action. EPA consulted and coordinated with tribal officials and provided information on both the 2012 FIP proposal and the current taconite FIP proposal early in the process of developing this regulation in order to allow tribal governments to have meaningful and timely input. EPA provided information to tribes on the rationale for proposing this regulation in the absence of the states submitting plans, the potential health and environmental impacts associated with these facilities, and the emissions reductions to be gained from implementing this regulation. EPA also took into consideration the concerns and needs identified by tribal governments during this process. These consultation and education and outreach efforts began in August 2012 and continue through the present utilizing forums such as monthly tribe-EPA conference calls, presentations during annual meetings and conferences, and one-to-one discussions with EPA subject matter experts as requested.

EPA's revision of the FIP is expected to have significant environmental benefits relative to the SIPs submitted by Michigan and Minnesota. On-and off-reservation trust resources held by Minnesota tribes (and other tribes), as recognized in treaties and in *Minnesota* v. *Mille Lacs Band,* 526 U.S. 172 (1999), among other authorities, will be protected to a greater extent by the controls required in the amended FIP.

*F. Comments by ArcelorMittal*

*Comment:* ArcelorMittal cited to the preamble to the proposed FIP revision, which states that ''there are no significant costs or environmental impacts'' associated with the BART determinations for Hibbing and Minorca. However, in actuality, the changes necessary to meet the proposed emission limits will not be without costs and environmental impacts. ArcelorMittal will be required to expend millions of dollars to design and implement changes to its straight-grate furnaces. It will also incur substantial costs associated with lost production during downtime and shakedown when these technologies are installed. Once operational, fuel penalties are expected which will result in increased cost.

*Response:* EPA acknowledges that there will be costs associated with the BART control technologies employed by ArcelorMittal. EPA's full statement in the preamble was that ''there are no significant costs or environmental impacts associated with this technology that would necessitate its elimination from consideration as BART.'' EPA continues to believe that the costs, energy, and non-air quality impacts associated with the selected BART controls are reasonable.

*G. Comments by United States Steel*

U.S. Steel submitted the following comments to ensure that EPA's approach to amending the original FIP is applied evenly and fairly and results in a consistent approach to BART for the taconite industry.

*Comment:* U.S. Steel agreed with EPA's decision to develop a case-by-case approach to BART for indurating furnaces and the Agency's proposed approach to determining BART for each

individual affected unit, based upon that unit's design and unit-specific characteristics.

*Response:* EPA appreciates U.S. Steel's support.

*Comment:* U.S. Steel stated that a similar approach will be necessary for U.S. Steel's Minntac and Keetac furnaces.

*Response:* This comment is outside the scope of this rulemaking.

*Comment:* U.S. Steel stated that EPA should consider delaying finalization of the proposed FIP revision until EPA is prepared to promulgate similar amendments for all furnaces in the taconite industry.

*Response:* EPA is bound by a settlement agreement to finalize the proposed FIP revision by March 18, 2016. Furthermore, there have already considerable delays in the implementation of BART for taconite indurating furnaces.

*Comment:* U.S. Steel stated that if EPA does not delay finalization of the proposed FIP revision, EPA should continue the stay of effective dates in the original 2013 FIP pending completion of a similar FIP amendment for U.S. Steel's Minntac and Keetac facilities.

*Response:* This comment is outside the scope of this rulemaking.

*Comment:* U.S. Steel stated that EPA should clarify that U.S. Steel is part owner of Hibbing taconite.

*Response:* EPA acknowledges that U.S. Steel is a part owner of the Hibbing facility.

*Comment:* U.S. Steel identified four points made by EPA with which U.S. Steel disagrees and could not find substantiating information in the docket. These points are: (1) The smaller preheat burners at Minntac achieve very low $NO_X$ emissions rates (0.1–0.3 lbs $NO_X$/MMBTU) due to a more favorable $NO_X$ reduction combustion environment in the preheat zone as compared to the firing end of the kiln; (2) ported kilns significantly change the heat balance of the furnace; (3) differences in the magnetite content of the ore body used by Minntac and United Taconite are significant; and 4) high-stoichiometric LNBs will require more fuel and result in higher $NO_X$ emissions.

*Response:* The basis for the above points questioned by U.S. Steel is presented in the proposed FIP at 80 FR 64163, which is in turn based upon the November 26, 2013 declaration by Eric Wagner, the Manager of Process Engineering for Metso Minerals Pyro Division, a ''global expert in the design of iron ore pelletizing furnaces.'' This declaration is attached to Cliffs' November 26, 2013 Petition for Administrative Reconsideration of the Partial Disapproval of Air Quality Implementation Plans for Regional Haze for the States of Michigan and Minnesota. Although a hard copy of this document was included in EPA's Regional docket, and available for inspection at EPA's Region 5 office, EPA mistakenly did not include this Petition for Reconsideration in the electronic docket for this rule until after the comment period had closed. U.S. Steel's comment questions the basis for several of Eric Wagner's statements regarding factors affecting indurating furnace operation and $NO_X$ emissions. We do not believe this omission was material, however, because U.S. Steel is seeking information, not challenging or suggesting revisions to the proposal.

*Comment:* U.S. Steel stated that EPA should reconsider the partial disapproval of Minnesota's SIP.

*Response:* This comment is outside the scope of this rulemaking.

*Comment:* U.S. Steel stated that, for each of the affected facilities, there is a schedule prescribed for installation of the technology and period to collect data to confirm or adjust the limit based upon the data. The period allows for eight months of data collection. If an affected facility elects to install the technology earlier than prescribed by rule, the facility should have the ability to utilize a more robust data set greater than the eight months specified. Due to seasonal variations, a facility should have the ability to use at a minimum 12 months of data if the installation of technology occurs prior to the compliance date.

*Response:* This notice is intended to capture the details agreed upon by EPA, Cliffs and ArcelorMittal in a settlement agreement. This comment comes from a commenter who was not party to the settlement agreement. The detailed compliance schedules contained in the proposed FIP are based upon the settlement terms agreed to by Cliffs and ArcelorMittal, who operate all of the taconite furnaces subject to this FIP. The eight month testing period that was originally proposed was considered by them to be of sufficient duration to evaluate the performance of their control systems and their effect on pellet quality. There is therefore no benefit to extending the testing period when such an extension is not necessary. The requirements of BART, and not the compliance schedule in this rule, establish the most appropriate compliance schedule to be followed by any other taconite facility.

*Comment:* U.S. Steel supported the provision allowing Tilden to exclude emissions data during a natural gas curtailment that is beyond a facility's control. These events are typically infrequent, unplanned, and may cause the facility to operate in a manner that is not typical.

*Response:* EPA appreciates U.S. Steel's support for the provision stating that the $SO_2$ limit for Tilden's grate kiln does not apply during a natural gas curtailment.

**IV. Revision to Equation for Normally Distributed but Not Statistically Independent Data**

The proposal describes the process for establishing final emission limits to which the identified facilities shall become subject. As discussed in the proposal, the final limit must be based on the 95 percent upper predictive limit (UPL) using CEMS data compiled over an eight-month testing period. The UPL is a statistical technique that examines an existing set of data points and predicts the chances (*i.e.,* the probability) of future data points (in this case, emission rates). In general terms, the UPL is a value that is calculated from a data set that identifies the emission rate that a source is meeting and would be expected to meet a specified percent of the time that the source is operating. In this case, the UPL will be the emission rate that the taconite facilities are predicted to be below during 95 out of 100 720-hour averaging periods. The UPL will be based on data obtained during an eight-month testing period during which Cliffs and ArcelorMittal are primarily focused on operating the controls in a manner that does not adversely affect pellet quality, with a wide variability in emissions expected. The UPL must be calculated using an equation based on the average and variance of a data set, the distribution of the data, the quantity of data points, and the compliance period (*e.g.,* a 720-hour compliance period).

The settlement agreement and proposed FIP specified three equations for determining the UPL depending upon whether the data are normally distributed and, if so, whether the data are statistically independent or not statistically independent. In the proposal (the equation numbers have been changed in the final), Equation 1 applied to normally distributed, statistically independent data sets; Equation 3 applied to normally distributed, but not statistically independent data sets; and Equation 4, the non-parametric UPL equation, applied to data sets that do not conform to a specific distribution. EPA's statistical guidance for environmental applications, the ProUCL User Guide,

includes UPL equations for different types of distributions, as well as a non-parametric equation for data sets that do not conform to a specific distribution. The guidance does not, however, include an equation for normally distributed, but not statistically independent (that is, highly correlated) data. Because Cliffs and ArcelorMittal were concerned about this latter category of data, we proposed what was purported to be an appropriate equation for normally distributed, but not statistically independent data (Equation 3). We subsequently found that Equation 3 is not valid for large data sets, which is what will result from eight months of hourly data. When we applied Equation 3 to a large data set, the resulting UPL was higher than the highest 720-hour average, a nonsensical and mathematically unreasonable result. We are therefore eliminating Equation 3 from the final FIP. Instead, we are requiring use of the fall back non-parametric equation (Equation 4) for data that are normally distributed, but not statistically independent.

We are finalizing the non-parametric equation contained in the proposal with a clarification regarding the appropriate data set to be used. As stated above, the UPL equations are used to determine emission limits. To correctly calculate the UPL using the non-parametric equation, the data that is ranked from smallest to highest must be in the same form as the emission limit. The final emission limits are expressed in terms of 720-hour averages, so the ranked data set used in the non-parametric equation must be a set of 720-hour averages as well. Using data sets based upon an averaging time inconsistent with the form of the emission limit would be an improper use of the equation. For instance, calculating the 95 percent non-parametric limit using a data set of ranked one-hour values would establish the emission rate (based upon a one-hour average) that the source would be predicted to be below during 95 out of 100 one-hour averaging periods, *i.e.,* an emission limit based on hourly compliance. The resulting emission limit would be improper if compliance is to be based upon a 720-hour average. Based upon our evaluation of existing data sets, using the 95th percentile of the one-hour values to establish a 720-hour average emission limit would result in a limit that is higher than the highest 720-hour average in the data sets, which is clearly inconsistent with the purpose of a 95 percent UPL.

To reiterate, the purpose of a 95 percent UPL is to establish an emission rate that a source is predicted to be below during 95 out of 100 averaging periods. Importantly, however, this does not mean that the source would be expected to exceed its emission limit five percent of the time once the limit is in place. During the eight-month testing period, Cliffs and ArcelorMittal will operate their furnaces and the new control technologies in a manner that will not interfere with pellet quality. The furnace operators will be adjusting numerous variables to optimize control technology performance, which will result in higher emissions at times. These periods of higher emissions will factor into the UPL calculation. Once the eight-month testing period is over, however, the operators will have gained sufficient experience to run the furnaces and control technologies with fewer adjustments, meaning less emission variations and lower emissions overall. Using the 95 percent UPL ensures that the final emission limits will be consistent with the actual emission reduction capabilities of the BART controls, as required by 40 CFR 51.301, which defines BART as ''the degree of reduction achievable.'' We also note that the 720-hour averaging period for the final emission limits will provide considerable flexibility for the sources. The operators will be able to continually review CEMS data on an hourly basis and make any necessary adjustments over the remaining 719 hours to ensure compliance.

## V. What action is EPA taking?

For the reasons stated in the proposed FIP revision and the response to comments, EPA is finalizing the new BART emission limits and related requirements for taconite furnaces as proposed, with two exceptions. First, EPA is revising the requirement to report CEMS and pellet quality data at the end of a period that did not fall within the preceding calendar quarter from within 7 days of the close of the period to within 30 days of the close of the period. This revision will allow the facilities sufficient time to complete the appropriate laboratory analyses and quality assurance for the data and will not significantly interfere with expeditiously setting the final limits. Second, EPA is replacing the incorrect equation for normally distributed but not statistically independent data with the non-parametric UPL equation, which is consistent with EPA guidance. A summary of our final decision is included in the table below.

SUMMARY OF FINAL EMISSION LIMITS AND COMPLIANCE SCHEDULES

| Source | Compliance schedule (months) | $NO_X$ limit for gas/coal mix (lbs/MMBtu) | $NO_X$ limit for gas only (lbs/MMBtu) | $SO_2$ limit |
|---|---|---|---|---|
| Tilden | 60 | 1.5–2.5 | 2.8–3.0 | 500 lbs/hr and 0.6%S. |
| Hibbing 1 | 37 | ..... | 1.2–1.8 | |
| Hibbing 2 | 55 | ..... | 1.2–1.8 | |
| Hibbing 3 | 60 | ..... | 1.2–1.8 | |
| UTAC 1 | 37 | 1.5–2.5 | 2.8–3.0 | 529 lbs/hr (combined L1&2) and 1.5%S. |
| UTAC 2 | 55 | 1.5–2.5 | 2.8–3.0 | 529 lbs/hr (combined L1&2) and 1.5%S. |
| Minorca Mine | 55 | ..... | 1.2–1.8 | |

## VI. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *http://www2.epa.gov/laws-regulations/laws-and-executive-orders.*

### *A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review*

This action is exempt from review by the Office of Management and Budget (OMB) because it is a rule of particular applicability and only affects four facilities.

### *B. Paperwork Reduction Act (PRA)*

This action does not impose an information collection burden under the PRA. Because the FIP applies to just four facilities, the Paperwork Reduction Act does not apply. *See* 5 CFR 1320.3(c).

*C. Regulatory Flexibility Act (RFA)*

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. 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, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. EPA's rule adds additional controls to certain sources. The Regional Haze FIP revisions that EPA is promulgating here would impose Federal control requirements to meet the BART requirement for $NO_X$ and $SO_2$ emissions on specific units at three sources in Minnesota and one in Michigan. The net result of the FIP action is that EPA is requiring emission controls on the indurating furnaces at four taconite furnaces and none of these sources are owned by small entities, and therefore are not small entities.

*D. Unfunded Mandates Reform Act (UMRA)*

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local or tribal governments or the private sector.

*E. Executive Order 13132: Federalism*

This action 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.

*F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments*

This action does not have tribal implications as specified in Executive Order 13175. It will not have substantial direct effects on tribal governments. Thus, Executive Order 13175 does not apply to this rule. However, EPA did discuss this action on a number of occasions, including a June 28, 2015, conference call with the Michigan and Minnesota tribes.

*G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks*

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. However, to the extent this rule will limit emissions of $NO_X$ and $SO_2$, the rule will have a beneficial effect on children's health by reducing air pollution.

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

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

*I. National Technology Transfer and Advancement Act (NTTAA)*

This rulemaking does not involve technical standards.

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

EPA believes the human health or environmental risk addressed by this action will not have potential disproportionately high and adverse human health or environmental effects on minority, low-income or indigenous populations. We have determined that this rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population.

*K. Congressional Review Act (CRA)*

This rule is exempt from the CRA because it is a rule of particular applicability.

*L. Judicial Review*

Under section 307(b)(1) of the CAA, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by June 13, 2016. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

**List of Subjects in 40 CFR Part 52**

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Nitrogen dioxide, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Regional haze, Volatile organic compounds.

Dated: March 18, 2016.

**Gina McCarthy,**

*Administrator.*

For the reasons stated in the preamble, 40 CFR chapter I is amended as follows:

## PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

■ 1. The authority citation for part 52 continues to read as follows:

**Authority:** 42 U.S.C. 7401 *et seq.*

■ 2. Section 52.1183 is amended by revising paragraphs (k), (l), (m), and (n) and adding paragraph (p) to read as follows:

**§ 52.1183 Visibility protection.**

* * * * *

(k) Tilden Mining Company, or any subsequent owner/operator of the Tilden Mining Company facility in Ishpeming, Michigan, shall meet the following requirements:

(1) *$NO_X$ Emission Limits.* (i) An emission limit of 2.8 lbs $NO_X$/MMBTU, based on a 720-hour rolling average, shall apply to Tilden Grate Kiln Line 1 when burning natural gas, and an emission limit of 1.5 lbs $NO_X$/MMBTU, based on a 720-hour rolling average, shall apply to Tilden Grate Kiln Line 1 when burning coal or a mixture of coal and natural gas. These emission limits will become enforceable 60 months after May 12, 2016 and only after EPA's confirmation or modification of the emission limit in accordance with the procedures set forth in paragraphs (k)(1)(ii) through (viii) of this section.

(ii) Compliance with these emission limits shall be demonstrated with data collected by a continuous emissions monitoring system (CEMS) for $NO_X$. The owner or operator must start collecting CEMS data for $NO_X$ upon May 12, 2016 and submit the data to EPA no later than 30 days from the end of each calendar quarter. Any remaining data through the end of the 57th month from May 12, 2016, that does not fall within a calendar quarter, must be submitted to EPA no later than 30 days from the end of the 57th month. Although CEMS data must continue to be collected, it does

not need to be submitted to EPA starting 57 months after May 12, 2016.

(iii) No later than 48 months from May 12, 2016, the owner or operator must submit to EPA a report, including any final report(s) completed by the selected $NO_X$ reduction technology supplier and furnace retrofit engineer, containing a detailed engineering analysis and modeling of the $NO_X$ reduction control technology being installed on Tilden Grate Kiln Line 1. This report must include a list of all variables that can reasonably be expected to have an impact on $NO_X$ emission control technology performance, as well as a description of how these variables can be adjusted to reduce $NO_X$ emissions to meet the $NO_X$ design emission limit. This $NO_X$ reduction control technology must be designed to meet emission limits of 2.8 lbs $NO_X$/MMBTU when burning natural gas and 1.5 lbs $NO_X$/MMBTU when burning coal or a mixture of coal and natural gas.

(iv) The $NO_X$ reduction control technology shall be installed on Tilden Grate Kiln Line 1 furnace no later than 50 months from May 12, 2016.

(v) Commencing on the earlier of: Six months from the installation of the $NO_X$ reduction control technology or 50 months from May 12, 2016, the owner or operator must provide to EPA the results from pellet quality analyses. The owner or operator shall provide the results from pellet quality analyses no later than 30 days from the end of each calendar quarter up until 57 months after May 12, 2016. Any remaining results through the end of the 57th month that do not fall within a calendar quarter must be submitted to EPA no later than 30 days from the end of the 57th month. The pellet quality analyses shall include results for the following factors: Compression, reducibility, before tumble, after tumble, and low temperature disintegration. For each of the pellet quality analysis factors the owner or operator must explain the pellet quality analysis factor as well as the defined acceptable range for each factor using the applicable product quality standards based upon customers' pellet specifications that are contained in Tilden's ISO 9001 quality management system. The owner or operator shall provide pellet quality analysis testing results that state the date and time of the analysis and, in order to define the time period when pellets were produced outside of the defined acceptable range for the pellet quality factors listed, provide copies of the production logs that document the starting and ending times for such periods. The owner or operator shall provide an explanation of causes for pellet samples that fail to meet the acceptable range for any pellet quality analysis factor. Pellet quality information and data may be submitted to EPA as Confidential Business Information.

(vi) No later than 57 months after May 12, 2016, the owner or operator may submit to EPA a report to either confirm or modify the $NO_X$ limits for Tilden Grate Kiln Line 1 within the upper and lower bounds described below. EPA will review the report and either confirm or modify the $NO_X$ limits. If the CEMS data collected during operating periods between months 50 and 57 that both meet pellet quality specifications and proper furnace/burner operation is normally distributed, the limit adjustment determination shall be based on the appropriate (depending upon whether data are statistically independent or dependent) 95% upper predictive limit (UPL) equations in paragraph (p) of this section. If the CEMS data collected during operating periods between months 50 and 57 that both meet pellet quality specifications and proper furnace/burner operation are not normally distributed, the limit adjustment determination shall be based on the non-parametric equation provided in paragraph (p) of this section. The data set for the determination shall exclude periods when pellet quality did not fall within the defined acceptable ranges of the pellet quality factors identified pursuant to paragraph (k)(1)(v) of this section and for any subsequent period when production had been reduced in response to pellet quality concerns consistent with Tilden's ISO 9001 operating standards. Any excluded period will commence at the time documented on the production log demonstrating pellet quality did not fall within the defined acceptable range and shall end when pellet quality within the defined acceptable range has been re-established at planned production levels, which will be presumed to be the level that existed immediately prior to the reduction in production due to pellet quality concerns. EPA may also exclude data where operations are inconsistent with the reported design parameters of the $NO_X$ reduction control technology that were installed.

(vii) EPA will take final agency action by publishing its final confirmation or modification of the $NO_X$ limits in the **Federal Register** no later than 60 months after May 12, 2016. The confirmed or modified $NO_X$ limit for Tilden Grate Kiln Line 1 when burning only natural gas may be no lower than 2.8 lbs $NO_X$/MMBTU, based on a 720-hour rolling average, and may not exceed 3.0 lbs $NO_X$/MMBTU, based on a 720-hour rolling average. The confirmed or modified $NO_X$ limit for Tilden Grate Kiln Line 1 when burning coal or a mixture of coal and natural gas may be no lower than 1.5 lbs $NO_X$/MMBTU, based on a 720-hour rolling average, and may not exceed 2.5 lbs $NO_X$/MMBTU, based on a 720-hour rolling average.

(viii) If the owner or operator submits a report proposing a single $NO_X$ limit for all fuels, EPA may approve the proposed $NO_X$ limit for all fuels based on a 30-day rolling average. The confirmed or modified limit will be established and enforceable within 60 months from May 12, 2016.

(2) *$SO_2$ Emission Limits.* A fuel sulfur content limit of no greater than 1.20 percent sulfur content by weight shall apply to fuel combusted in Process Boiler #1 (EUBOILER1) and Process Boiler #2 (EUBOILER2) beginning three months from March 8, 2013. A fuel sulfur content limit of no greater than 1.50 percent sulfur content by weight shall apply to fuel combusted in the Line 1 Dryer (EUDRYER1) beginning 3 months from March 8, 2013. The sampling and calculation methodology for determining the sulfur content of fuel must be described in the monitoring plan required at paragraph (n)(8)(x) of this section.

(3) The owner or operator of the Tilden Grate Kiln Line 1 furnace shall meet an emission limit of 500 lbs $SO_2$/hr based on a 30-day rolling average beginning six months after May 12, 2016. Compliance with these emission limits shall be demonstrated with data collected by a continuous emissions monitoring system (CEMS) for $SO_2$. The owner or operator must start collecting CEMS data for $SO_2$ beginning six months after May 12, 2016 and submit the data to EPA no later than 30 days from the end of each calendar quarter. The Tilden Grate Kiln Line 1 furnace shall not be limited to natural gas fuel. Beginning six months after May 12, 2016, any coal burned on Tilden Grate Kiln Line 1 shall have no more than 0.60 percent sulfur by weight based on a monthly block average. The sampling and calculation methodology for determining the sulfur content of coal must be described in the monitoring plan required for this furnace. The owner or operator must calculate an $SO_2$ limit based on 12 continuous months of CEMS emissions data and submit such limit, calculations, and CEMS data to EPA no later than 36 months after May 12, 2016. If the submitted CEMS $SO_2$ hourly data are normally distributed, the $SO_2$ lbs/hr emission rate shall be

based on the appropriate (depending upon whether data are statistically independent or dependent) 99% upper predictive limit (UPL) equation. If the submitted CEMS $SO_2$ hourly data are not normally distributed, the $SO_2$ lbs/hr emission rate shall be based on the non-parametric equation provided in paragraph (p) of this section. Compliance with the $SO_2$ lbs/hr emission rate shall be determined on a 30-day rolling average basis. EPA will take final agency action by publishing a confirmation or modification of the $SO_2$ limit in the **Federal Register** no later than 39 months after May 12, 2016. EPA may adjust the 500 lbs $SO_2$/hr limit downward to reflect the calculated $SO_2$ emission rate; however, EPA will not increase the $SO_2$ limit above 500 lbs $SO_2$/hr.

(4) Starting 26 months from May 12, 2016, records shall be kept for any day during which fuel oil is burned as fuel (either alone or blended with other fuels) in Grate Kiln Line 1. These records must include, at a minimum, the gallons of fuel oil burned per hour, the sulfur content of the fuel oil, and the $SO_2$ emissions in pounds per hour.

(5) Starting 26 months from May 12, 2016, the $SO_2$ limit for Grate Kiln Line 1 does not apply for any hour in which it is documented that there is a natural gas curtailment beyond Cliffs' control necessitating that the supply of natural gas to Tilden's Line 1 indurating furnace is restricted or eliminated. Records must be kept of the cause of the curtailment and duration of such curtailment. During such curtailment, the use of backup coal is restricted to coal with no greater than 0.60 percent sulfur by weight.

(l) *Testing and monitoring.* (1) The owner or operator shall install, certify, calibrate, maintain, and operate a CEMS for $NO_X$ on Tilden Grate Kiln Line 1. Compliance with the emission limits for $NO_X$ shall be determined using data from the CEMS.

(2) The owner or operator shall install, certify, calibrate, maintain, and operate a CEMS for $SO_2$ on Tilden Grate Kiln Line 1. Compliance with the emission standard selected for $SO_2$ shall be determined using data from the CEMS.

(3) The owner or operator shall install, certify, calibrate, maintain, and operate one or more continuous diluent monitor(s) ($O_2$ or $CO_2$) and continuous flow rate monitor(s) on Tilden Grate Kiln Line 1 to allow conversion of the $NO_X$ and $SO_2$ concentrations to units of the standard (lbs/MMBTU and lbs/hr, respectively) unless a demonstration is made that a diluent monitor and continuous flow rate monitor are not needed for the owner or operator to demonstrate compliance with applicable emission limits in units of the standards.

(4) For purposes of this section, all CEMS required by this section must meet the requirements of paragraphs (l)(4)(i) through (xiv) of this section.

(i) All CEMS must be installed, certified, calibrated, maintained, and operated in accordance with 40 CFR part 60, appendix B, Performance Specification 2 (PS–2) and appendix F, Procedure 1.

(ii) All CEMS associated with monitoring $NO_X$ (including the $NO_X$ monitor and necessary diluent and flow rate monitors) must be installed and operational upon May 12, 2016. All CEMS associated with monitoring $SO_2$ must be installed and operational no later than six months after May 12, 2016. Verification of the CEMS operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the devices.

(iii) The owner or operator must conduct a performance evaluation of each CEMS in accordance with 40 CFR part 60, appendix B, PS–2. The performance evaluations must be completed no later than 60 days after the respective CEMS installation.

(iv) The owner or operator of each CEMS must conduct periodic Quality Assurance, Quality Control (QA/QC) checks of each CEMS in accordance with 40 CFR part 60, appendix F, Procedure 1. The first CEMS accuracy test will be a relative accuracy test audit (RATA) and must be completed no later than 60 days after the respective CEMS installation.

(v) The owner or operator of each CEMS must furnish the Regional Administrator two, or upon request, more copies of a written report of the results of each performance evaluation and QA/QC check within 60 days of completion.

(vi) The owner or operator of each CEMS must check, record, and quantify the zero and span calibration drifts at least once daily (every 24 hours) in accordance with 40 CFR part 60, appendix F, Procedure 1, Section 4.

(vii) Except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, all CEMS required by this section shall be in continuous operation during all periods of process operation of the indurating furnaces, including periods of process unit startup, shutdown, and malfunction.

(viii) All CEMS required by this section must meet the minimum data requirements at paragraphs (l)(4)(viii)(A) through (C) of this section.

(A) Complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute quadrant of an hour.

(B) Sample, analyze, and record emissions data for all periods of process operation except as described in paragraph (l)(4)(viii)(C) of this section.

(C) When emission data from CEMS are not available due to continuous monitoring system breakdowns, repairs, calibration checks, or zero and span adjustments, emission data must be obtained using other monitoring systems or emission estimation methods approved by the EPA. The other monitoring systems or emission estimation methods to be used must be incorporated into the monitoring plan required by this section and provide information such that emissions data are available for a minimum of 18 hours in each 24-hour period and at least 22 out of 30 successive unit operating days.

(ix) Owners or operators of each CEMS required by this section must reduce all data to 1-hour averages. Hourly averages shall be computed using all valid data obtained within the hour but no less than one data point in each 15-minute quadrant of an hour. Notwithstanding this requirement, an hourly average may be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant in an hour) if data are unavailable as a result of performance of calibration, quality assurance, preventive maintenance activities, or backups of data from data acquisition and handling systems and recertification events.

(x) The 30-day rolling average emission rate determined from data derived from the CEMS required by this section (in lbs/MMBTU or lbs/hr depending on the emission standard selected) must be calculated in accordance with paragraphs (l)(4)(x)(A) through (F) of this section.

(A) Sum the total pounds of the pollutant in question emitted from the unit during an operating day and the previous 29 operating days.

(B) Sum the total heat input to the unit (in MMBTU) or the total actual hours of operation (in hours) during an operating day and the previous 29 operating days.

(C) Divide the total number of pounds of the pollutant in question emitted during the 30 operating days by the total heat input (or actual hours of operation depending on the emission limit selected) during the 30 operating days.

(D) For purposes of this calculation, an operating day is any day during

which fuel is combusted in the BART affected unit regardless of whether pellets are produced. Actual hours of operation are the total hours a unit is firing fuel regardless of whether a complete 24-hour operational cycle occurs (*i.e.*, if the furnace is firing fuel for only five hours during a 24-hour period, then the actual operating hours for that day are five. Similarly, total number of pounds of the pollutant in question for that day is determined only from the CEMS data for the five hours during which fuel is combusted.)

(E) If the owner or operator of the CEMS required by this section uses an alternative method to determine 30-day rolling averages, that method must be described in detail in the monitoring plan required by this section. The alternative method will only be applicable if the final monitoring plan and the alternative method are approved by EPA.

(F) A new 30-day rolling average emission rate must be calculated for the period ending each new operating day.

(xi) The 720-hour rolling average emission rate determined from data derived from the CEMS required by this section (in lbs/MMBTU) must be calculated in accordance with paragraphs (l)(4)(xi)(A) through (C) of this section.

(A) Sum the total pounds of $NO_X$ emitted from the unit every hour and the previous (not necessarily consecutive) 719 hours for which that type of fuel (either natural gas or mixed coal and natural gas) was used.

(B) Sum the total heat input to the unit (in MMBTU) every hour and the previous (not necessarily consecutive) 719 hours for which that type of fuel (either natural gas or mixed coal and natural gas) was used.

(C) Divide the total number of pounds of $NO_X$ emitted during the 720 hours, as defined above, by the total heat input during the same 720-hour period. This calculation must be done separately for each fuel type (either for natural gas or mixed coal and natural gas).

(xii) Data substitution must not be used for purposes of determining compliance under this regulation.

(xiii) All CEMS data shall be reduced and reported in units of the applicable standard.

(xiv) A Quality Control Program must be developed and implemented for all CEMS required by this section in accordance with 40 CFR part 60, appendix F, Procedure 1, Section 3. The program will include, at a minimum, written procedures and operations for calibration checks, calibration drift adjustments, preventative maintenance, data collection, recording and reporting, accuracy audits/procedures, periodic performance evaluations, and a corrective action program for malfunctioning CEMS.

(m) *Recordkeeping requirements.* (1)(i) Records required by this section must be kept in a form suitable and readily available for expeditious review.

(ii) Records required by this section must be kept for a minimum of five years following the date of creation.

(iii) Records must be kept on site for at least two years following the date of creation and may be kept offsite, but readily accessible, for the remaining three years.

(2) The owner or operator of the BART affected unit must maintain the records identified in paragraphs (m)(2)(i) through (xi) of this section.

(i) A copy of each notification and report developed for and submitted to comply with this section including all documentation supporting any initial notification or notification of compliance status submitted, according to the requirements of this section.

(ii) Records of the occurrence and duration of each startup, shutdown, and malfunction of the BART affected unit, air pollution control equipment, and CEMS required by this section.

(iii) Records of activities taken during each startup, shutdown, and malfunction of the BART affected unit, air pollution control equipment, and CEMS required by this section.

(iv) Records of the occurrence and duration of all major maintenance conducted on the BART affected unit, air pollution control equipment, and CEMS required by this section.

(v) Records of each excess emission report, including all documentation supporting the reports, dates and times when excess emissions occurred, investigations into the causes of excess emissions, actions taken to minimize or eliminate the excess emissions, and preventative measures to avoid the cause of excess emissions from occurring again.

(vi) Records of all CEMS data including, as a minimum, the date, location, and time of sampling or measurement, parameters sampled or measured, and results.

(vii) All records associated with quality assurance and quality control activities on each CEMS as well as other records required by 40 CFR part 60, appendix F, Procedure 1 including, but not limited to, the quality control program, audit results, and reports submitted as required by this section.

(viii) Records of the $NO_X$ emissions during all periods of BART affected unit operation, including startup, shutdown, and malfunction, in the units of the standard. The owner or operator shall convert the monitored data into the appropriate unit of the emission limitation using appropriate conversion factors and F-factors. F-factors used for purposes of this section shall be documented in the monitoring plan and developed in accordance with 40 CFR part 60, appendix A, Method 19. The owner or operator may use an alternate method to calculate the $NO_X$ emissions upon written approval from EPA.

(ix) Records of the $SO_2$ emissions or records of the removal efficiency (based on CEMS data), depending on the emission standard selected, during all periods of operation, including periods of startup, shutdown, and malfunction, in the units of the standard.

(x) Records associated with the CEMS unit including type of CEMS, CEMS model number, CEMS serial number, and initial certification of each CEMS conducted in accordance with 40 CFR part 60, appendix B, Performance Specification 2 must be kept for the life of the CEMS unit.

(xi) Records of all periods of fuel oil usage as required in paragraph (k)(4) of this section.

(n) *Reporting requirements.* (1) All requests, reports, submittals, notifications, and other communications to the Regional Administrator required by this section shall be submitted, unless instructed otherwise, to the Air and Radiation Division, U.S. Environmental Protection Agency, Region 5 (A–18J) at 77 West Jackson Boulevard, Chicago, Illinois 60604. References in this section to the Regional Administrator shall mean the EPA Regional Administrator for Region 5.

(2) The owner or operator of each BART affected unit identified in this section and CEMS required by this section must provide to the Regional Administrator the written notifications, reports, and plans identified at paragraphs (n)(2)(i) through (viii) of this section. If acceptable to both the Regional Administrator and the owner or operator of each BART affected unit identified in this section and CEMS required by this section the owner or operator may provide electronic notifications, reports, and plans.

(i) A notification of the date construction of control devices and installation of burners required by this section commences postmarked no later than 30 days after the commencement date.

(ii) A notification of the date the installation of each CEMS required by this section commences postmarked no later than 30 days after the commencement date.

(iii) A notification of the date the construction of control devices and installation of burners required by this section is complete postmarked no later than 30 days after the completion date.

(iv) A notification of the date the installation of each CEMS required by this section is complete postmarked no later than 30 days after the completion date.

(v) A notification of the date control devices and burners installed by this section startup postmarked no later than 30 days after the startup date.

(vi) A notification of the date CEMS required by this section postmarked no later than 30 days after the startup date.

(vii) A notification of the date upon which the initial CEMS performance evaluations are planned. This notification must be submitted at least 60 days before the performance evaluation is scheduled to begin.

(viii) A notification of initial compliance signed by the responsible official, who shall certify its accuracy, attesting to whether the source has complied with the requirements of this section, including, but not limited to, applicable emission standards, control device and burner installations, and CEMS installation and certification. This notification must be submitted before the close of business on the 60th calendar day following the completion of the compliance demonstration and must include, at a minimum, the information in paragraphs (n)(2)(viii)(A) through (F) of this section.

(A) The methods used to determine compliance.

(B) The results of any CEMS performance evaluations and other monitoring procedures or methods that were conducted.

(C) The methods that will be used for determining continuing compliance, including a description of monitoring and reporting requirements and test methods.

(D) The type and quantity of air pollutants emitted by the source, reported in units of the standard.

(E) A description of the air pollution control equipment and burners installed as required by this section for each emission point.

(F) A statement by the owner or operator as to whether the source has complied with the relevant standards and other requirements.

(3) The owner or operator must develop and implement a written startup, shutdown, and malfunction plan for $NO_X$ and $SO_2$. The plan must include, at a minimum, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for a malfunctioning process and air pollution control and monitoring equipment used to comply with the relevant standard. The plan must ensure that, at all times, the owner or operator operates and maintains each affected source, including associated air pollution control and monitoring equipment, in a manner which satisfies the general duty to minimize or eliminate emissions using good air pollution control practices. The plan must ensure that owners or operators are prepared to correct malfunctions as soon as practicable after their occurrence.

(4) The written reports of the results of each performance evaluation and QA/QC check in accordance with and as required in paragraph (l)(4)(v) of this section.

(5) *Compliance reports.* The owner or operator of each BART affected unit must submit semiannual compliance reports. The semiannual compliance reports must be submitted in accordance with paragraphs (n)(5)(i) through (iv) of this section, unless the Regional Administrator has approved a different schedule.

(i) The first compliance report must cover the period beginning on the compliance date that is specified for the affected source through June 30 or December 31, whichever date comes first after the compliance date that is specified for the affected source.

(ii) The first compliance report must be postmarked no later than 30 calendar days after the reporting period covered by that report (July 30 or January 30), whichever comes first.

(iii) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(iv) Each subsequent compliance report must be postmarked no later than 30 calendar days after the reporting period covered by that report (July 30 or January 30).

(6) *Compliance report contents.* Each compliance report must include the information in paragraphs (n)(6)(i) through (vi) of this section.

(i) Company name and address.

(ii) Statement by a responsible official, with the official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(iii) Date of report and beginning and ending dates of the reporting period.

(iv) Identification of the process unit, control devices, and CEMS covered by the compliance report.

(v) A record of each period of a startup, shutdown, or malfunction during the reporting period and a description of the actions the owner or operator took to minimize or eliminate emissions arising as a result of the startup, shutdown, or malfunction and whether those actions were or were not consistent with the source's startup, shutdown, and malfunction plan.

(vi) A statement identifying whether there were or were not any deviations from the requirements of this section during the reporting period. If there were deviations from the requirements of this section during the reporting period, then the compliance report must describe in detail the deviations which occurred, the causes of the deviations, actions taken to address the deviations, and procedures put in place to avoid such deviations in the future. If there were no deviations from the requirements of this section during the reporting period, then the compliance report must include a statement that there were no deviations. For purposes of this section, deviations include, but are not limited to, emissions in excess of applicable emission standards established by this section, failure to continuously operate an air pollution control device in accordance with operating requirements designed to assure compliance with emission standards, failure to continuously operate CEMS required by this section, and failure to maintain records or submit reports required by this section.

(7) Each owner or operator of a CEMS required by this section must submit quarterly excess emissions and monitoring system performance reports to the Regional Administrator for each pollutant monitored for each BART affected unit monitored. All reports must be postmarked by the 30th day following the end of each 3-month period of a calendar year (January–March, April–June, July–September, October–December) and must include, at a minimum, the requirements of paragraphs (n)(7)(i) through (xv) of this section.

(i) Company name and address.

(ii) Identification and description of the process unit being monitored.

(iii) The dates covered by the reporting period.

(iv) Total source operating hours for the reporting period.

(v) Monitor manufacturer, monitor model number, and monitor serial number.

(vi) Pollutant monitored.

(vii) Emission limitation for the monitored pollutant.

(viii) Date of latest CEMS certification or audit.

(ix) A description of any changes in continuous monitoring systems, processes, or controls since the last reporting period.

(x) A table summarizing the total duration of excess emissions, as defined in paragraphs (n)(7)(x)(A) through (B) of this section, for the reporting period broken down by the cause of those excess emissions (startup/shutdown, control equipment problems, process problems, other known causes, unknown causes), and the total percent of excess emissions (for all causes) for the reporting period calculated as described in paragraph (n)(7)(x)(C) of this section.

(A) For purposes of this section, an excess emission is defined as any 30-day or 720-hour rolling average period, including periods of startup, shutdown, and malfunction, during which the 30-day or 720-hour (as appropriate) rolling average emissions of either regulated pollutant ($SO_2$ and $NO_X$), as measured by a CEMS, exceeds the applicable emission standards in this section.

(B)(*1*) For purposes of this section, if a facility calculates a 30-day rolling average emission rate in accordance with this section which exceeds the applicable emission standards of this section, then it will be considered 30 days of excess emissions. If the following 30-day rolling average emission rate is calculated and found to exceed the applicable emission standards of this section as well, then it will add one more day to the total days of excess emissions (*i.e.* 31 days). Similarly, if an excess emission is calculated for a 30-day rolling average period and no additional excess emissions are calculated until 15 days after the first, then that new excess emission will add 15 days to the total days of excess emissions (*i.e.* 30 + 15 = 45). For purposes of this section, if an excess emission is calculated for any period of time within a reporting period, there will be no fewer than 30 days of excess emissions but there should be no more than 121 days of excess emissions for a reporting period.

(*2*) For purposes of this section, if a facility calculates a 720-hour rolling average emission rate in accordance with this section which exceeds the applicable emission standards of this section, then it will be considered 30 days of excess emissions. If the 24th following 720-hour rolling average emission rate is calculated and found to exceed the applicable emission standards of the rule as well, then it will add one more day to the total days of excess emissions (*i.e.* 31 days). Similarly, if an excess emission is calculated for a 720-hour rolling average period and no additional excess emissions are calculated until 360 hours after the first, then that new excess emission will add 15 days to the total days of excess emissions (*i.e.* 30+15 = 45). For purposes of this section, if an excess emission is calculated for any period of time with a reporting period, there will be no fewer than 30 days of excess emissions but there should be no more than 121 days of excess emissions for a reporting period.

(C) For purposes of this section, the total percent of excess emissions will be determined by summing all periods of excess emissions (in days) for the reporting period, dividing that number by the total BART affected unit operating days for the reporting period, and then multiplying by 100 to get the total percent of excess emissions for the reporting period. An operating day, as defined previously, is any day during which fuel is fired in the BART affected unit for any period of time. Because of the possible overlap of 30-day rolling average excess emissions across quarters, there are some situations where the total percent of excess emissions could exceed 100 percent. This extreme situation would only result from serious excess emissions problems where excess emissions occur for nearly every day during a reporting period.

(xi) A table summarizing the total duration of monitor downtime, as defined in paragraph (n)(7)(xi)(A) of this section, for the reporting period broken down by the cause of the monitor downtime (monitor equipment malfunctions, non-monitor equipment malfunctions, quality assurance calibration, other known causes, unknown causes), and the total percent of monitor downtime (for all causes) for the reporting period calculated as described in paragraph (n)(7)(xi)(B) of this section.

(A) For purposes of this section, monitor downtime is defined as any period of time (in hours) during which the required monitoring system was not measuring emissions from the BART affected unit. This includes any period of CEMS QA/QC, daily zero and span checks, and similar activities.

(B) For purposes of this section, the total percent of monitor downtime will be determined by summing all periods of monitor downtime (in hours) for the reporting period, dividing that number by the total number of BART affected unit operating hours for the reporting period, and then multiplying by 100 to get the total percent of excess emissions for the reporting period.

(xii) A table which identifies each period of excess emissions for the reporting period and includes, at a minimum, the information in paragraphs (n)(7)(xii)(A) through (F) of this section.

(A) The date of each excess emission.

(B) The beginning and end time of each excess emission.

(C) The pollutant for which an excess emission occurred.

(D) The magnitude of the excess emission.

(E) The cause of the excess emission.

(F) The corrective action taken or preventative measures adopted to minimize or eliminate the excess emissions and prevent such excess emission from occurring again.

(xiii) A table which identifies each period of monitor downtime for the reporting period and includes, at a minimum, the information in paragraphs (n)(7)(xiii)(A) through (D) of this section.

(A) The date of each period of monitor downtime.

(B) The beginning and end time of each period of monitor downtime.

(C) The cause of the period of monitor downtime.

(D) The corrective action taken or preventative measures adopted for system repairs or adjustments to minimize or eliminate monitor downtime and prevent such downtime from occurring again.

(xiv) If there were no periods of excess emissions during the reporting period, then the excess emission report must include a statement which says there were no periods of excess emissions during this reporting period.

(xv) If there were no periods of monitor downtime, except for daily zero and span checks, during the reporting period, then the excess emission report must include a statement which says there were no periods of monitor downtime during this reporting period except for the daily zero and span checks.

(8) The owner or operator of each CEMS required by this section must develop and submit for review and approval by the Regional Administrator a site specific monitoring plan. The purpose of this monitoring plan is to establish procedures and practices which will be implemented by the owner or operator in its effort to comply with the monitoring, recordkeeping, and reporting requirements of this section. The monitoring plan must include, at a minimum, the information in paragraphs (n)(8)(i) through (x) of this section.

(i) Site specific information including the company name, address, and contact information.

(ii) The objectives of the monitoring program implemented and information

describing how those objectives will be met.

(iii) Information on any emission factors used in conjunction with the CEMS required by this section to calculate emission rates and a description of how those emission factors were determined.

(iv) A description of methods to be used to calculate emission rates when CEMS data are not available due to downtime associated with QA/QC events.

(v) A description of the QA/QC program to be implemented by the owner or operator of CEMS required by this section. This can be the QA/QC program developed in accordance with 40 CFR part 60, appendix F, Procedure 1, Section 3.

(vi) A list of spare parts for CEMS maintained on site for system maintenance and repairs.

(vii) A description of the procedures to be used to calculate 30-day rolling averages and 720-hour rolling averages and example calculations which show the algorithms used by the CEMS to calculate 30-day rolling averages and 720-hour rolling averages.

(viii) A sample of the document to be used for the quarterly excess emission reports required by this section.

(ix) A description of the procedures to be implemented to investigate root causes of excess emissions and monitor downtime and the proposed corrective actions to address potential root causes of excess emissions and monitor downtime.

(x) A description of the sampling and calculation methodology for determining the percent sulfur by weight as a monthly block average for coal used during that month.

(p) *Equations for establishing the upper predictive limit*—(1) *Equation for normal distribution and statistically independent data.*

$$UPL = \bar{x} + t_{[(n-1),(0.95)]}\sqrt{s^2\left(\frac{1}{n}+\frac{1}{m}\right)}$$

Where:

$\bar{x}$ = average or mean of hourly test run data;

$t_{[(n-1),(0.95)]}$ = t score, the one-tailed t value of the Student's t distribution for a specific degree of freedom (n − 1) and a confidence level (0.95; 0.99 for Tilden $SO_2$)

$s^2$ = variance of the hourly data set;

$n$ = number of values (*e.g.* 5,760 if 8 months of valid lbs $NO_X$/MMBTU hourly values)

$m$ = number of values used to calculate the test average (m = 720 as per averaging time)

(i) To determine if statistically independent, use the Rank von Neumann Test on p. 137 of data Quality Assessment: Statistical Methods for Practitioners EPA QA/G–9S.

(ii) Alternative to Rank von Neumann test to determine if data are dependent, data are dependent if t test value is greater than t critical value, where:

$$t\ test = \frac{\rho}{\sqrt{\frac{1-\rho^2}{n-2}}}$$

ρ = correlation between data points

*t critical* = $t_{[(n-2),(0.95)]}$ = t score, the two-tailed t value of the Student's t distribution for a specific degree of freedom (n − 2) and a confidence level (0.95)

(iii) The Anderson-Darling normality test is used to establish whether the data are normally distributed. That is, a distribution is considered to be normally distributed when p > 0.05.

(2) *Non-parametric equation for data not normally distributed and normally distributed but not statistically independent.*

$m = (n + 1) * \alpha$

$m$ = the rank of the ordered data point, when data are sorted smallest to largest. The data points are 720-hour averages for establishing $NO_X$ limits.

$n$ = number of data points (*e.g.,* 5040 720-hourly averages for eight months of valid $NO_X$ lbs/MMBTU values)

α = 0.95, to reflect the 95th percentile

If $m$ is a whole number, then the limit, UPL, shall be computed as:

$UPL = X_m$

Where:

$X_m$ = value of the $m^{th}$ data point in terms of lbs $SO_2$/hr or lbs $NO_X$/MMBTU, when the data are sorted smallest to largest.

If $m$ is not a whole number, the limit shall be computed by linear interpolation according to the following equation.

$$UPL = X_m = X_{m_i \cdot m_d} = X_{m_i} + 0.m_d\left(X_{m_i+1} - X_{m_i}\right)$$

Where:

$m_i$ = the integer portion of $m$, *i.e., m* truncated at zero decimal places, and

$m_d$ = the decimal portion of $m$

■ 3. Section 52.1235 is amended by revising paragraphs (b)(1)(ii), (b)(1)(iv), (b)(1)(v), (b)(2)(iv), (c), (d), and (e) and by adding paragraph (f) to read as follows:

**§ 52.1235 Regional haze.**

* * * * *

(b)

(1) * * *

(ii) *Hibbing Taconite Company*—(A) *Hibbing Line 1.* (*1*) An emission limit of 1.2 lbs $NO_X$/MMBTU, based on a 30-day rolling average, shall apply to Hibbing Line 1 when burning natural gas. This emission limit will become enforceable 37 months after May 12, 2016 and only after EPA's confirmation or modification of the emission limit in accordance with the procedures set forth in paragraphs (b)(1)(ii)(A)(*2*) through (*7*) of this section.

(*2*) Compliance with this emission limit will be demonstrated with data collected by a continuous emissions monitoring system (CEMS) for $NO_X$. The owner or operator of Hibbing Line 1 must install a CEMS for $NO_X$ and $SO_2$ within six months from May 12, 2016. The owner or operator must start collecting CEMS data and submit the data to EPA no later than 30 days from the end of each calendar quarter after that installation deadline. Any remaining data through the end of the 34th month from May 12, 2016, that does not fall within a calendar quarter, must be submitted to EPA no later than 30 days from the end of the 34th month. Although CEMS data must continue to be collected, it does not need to be submitted to EPA starting 34 months after May 12, 2016.

(*3*) No later than 24 months after May 12, 2016 the owner or operator must submit to EPA a report, including any final report(s) completed by the selected $NO_X$ reduction technology supplier and furnace retrofit engineer, containing a detailed engineering analysis and modeling of the $NO_X$ reduction control technology being installed on Hibbing Line 1. The $NO_X$ reduction control technology must be designed to meet an emission limit of 1.2 lbs $NO_X$/MMBTU. This report must include a list of all process and control technology variables that can reasonably be expected to have an impact on $NO_X$ emissions control technology performance, as well as a description of how these variables can be adjusted to reduce $NO_X$ emissions to meet the $NO_X$ design emission limit.

(*4*) The $NO_X$ reduction control technology shall be installed on Hibbing Line 1 furnace no later than 26 months after May 12, 2016.

(*5*) Commencing on the earlier of: Six months from the installation of the $NO_X$ reduction control technology; or 26 months from May 12, 2016, the owner or operator must provide to EPA the results from pellet quality analyses. The owner or operator shall provide the results from pellet quality analyses no later than 30 days from the end of each calendar quarter up until 34 months after May 12, 2016. Any remaining results through the end of the 34th month from May 12, 2016, that do not fall within a calendar quarter, must be submitted to EPA no later than 30 days from the end of the 34th month. The

pellet quality analyses shall include results for the following factors: Compression, reducibility, before tumble, after tumble, low temperature disintegration, and swelling. For each of the pellet quality analysis factors, the owner or operator must explain the pellet quality analysis factor, as well as the defined acceptable range for each factor using the applicable product quality standards based upon customers' pellet specifications that are contained in Hibbing's ISO 9001 quality management system. The owner or operator shall provide pellet quality analysis testing results that state the date and time of the analysis and, in order to define the time period when pellets were produced outside of the defined acceptable range for the pellet quality factors listed, provide copies of the production logs that document the starting and ending times for such periods. The owner or operator shall provide an explanation of causes for pellet samples that fail to meet the acceptable range for any pellet quality analysis factor. Pellet quality information and data may be submitted to EPA as Confidential Business Information.

(*6*) No later than 34 months after May 12, 2016, the owner or operator may submit to EPA a report to either confirm or modify the $NO_X$ limits for Hibbing Line 1 furnace within the upper and lower bounds described below. EPA will review the report and either confirm or modify the $NO_X$ limits. If the CEMS data collected during operating periods between months 26 and 34 that both meet pellet quality specifications and proper furnace/burner operation is normally distributed, the limit adjustment determination shall be based on the appropriate (depending upon whether data are statistically independent or dependent) 95% upper predictive limit (UPL) equations in paragraph (f) of this section. If the CEMS data collected during operating periods between months 26 and 34 that both meet pellet quality specifications and proper furnace/burner operation are not normally distributed, the limit adjustment determination shall be based on the non-parametric equation provided in paragraph (f) of this section. The data set for the determination shall exclude periods when pellet quality did not fall within the defined acceptable ranges of the pellet quality factors identified pursuant to paragraph (b)(1)(ii)(E) of this section and for any subsequent period when production has been reduced in response to pellet quality concerns consistent with Hibbing's ISO 9001 operating standards. Any excluded period will commence at the time documented on the production log demonstrating that pellet quality did not fall within the defined acceptable range and shall end when pellet quality within the defined acceptable range has been re-established at planned production levels, which will be presumed to be the level that existed immediately prior to the reduction in production due to pellet quality concerns. EPA may also exclude data where operations are inconsistent with the reported design parameters of the $NO_X$ reduction control technology installed.

(*7*) EPA will take final agency action by publishing its final confirmation or modification of the $NO_X$ limit in the **Federal Register** no later than 37 months after May 12, 2016. The confirmed or modified $NO_X$ limit for Hibbing Line 1 when burning only natural gas may be no lower than 1.2 lbs $NO_X$/MMBTU, based on a 30-day rolling average, and may not exceed 1.8 lbs $NO_X$/MMBTU, based on a 30-day rolling average.

(B) *Hibbing Line 2.* (*1*) An emission limit of 1.2 lbs $NO_X$/MMBTU, based on a 30-day rolling average, shall apply to Hibbing Line 2 when burning natural gas. This emission limit will become enforceable 55 months after May 12, 2016 and only after EPA's confirmation or modification of the emission limit in accordance with the procedures set forth in paragraphs (b)(1)(ii)(B)(*2*) through (*7*) of this section.

(*2*) Compliance with this emission limit will be demonstrated with data collected by a continuous emissions monitoring system (CEMS) for $NO_X$. The owner or operator of Hibbing Line 2 must install a CEMS for $NO_X$ and $SO_2$ within six months from May 12, 2016. The owner or operator must start collecting CEMS data and submit the data to EPA no later than 30 days from the end of each calendar quarter after that installation deadline. Any remaining data through the end of the 52nd month from May 12, 2016, that does not fall within a calendar quarter, must be submitted to EPA no later than 30 days from the end of the 52nd month. Although CEMS data must continue to be collected, it does not need to be submitted to EPA starting 52 months after May 12, 2016.

(*3*) No later than 42 months after May 12, 2016 the owner or operator must submit to EPA a report, including any final report(s) completed by the selected $NO_X$ reduction technology supplier and furnace retrofit engineer, containing a detailed engineering analysis and modeling of the $NO_X$ reduction control technology being installed on Hibbing Line 2. The $NO_X$ reduction control technology must be designed to meet an emission limit of 1.2 lbs $NO_X$/MMBTU. This report must include a list of all process and control technology variables that can reasonably be expected to have an impact on $NO_X$ emissions control technology performance, as well as a description of how these variables can be adjusted to reduce $NO_X$ emissions to meet the $NO_X$ design emission limit.

(*4*) The $NO_X$ reduction control technology shall be installed on Hibbing Line 2 furnace no later than 44 months after May 12, 2016.

(*5*) Commencing on the earlier of: Six months from the installation of the $NO_X$ reduction control technology; or 44 months from May 12, 2016, the owner or operator must provide to EPA the results from pellet quality analyses. The owner or operator shall provide the results from pellet quality analyses no later than 30 days from the end of each calendar quarter up until 52 months after May 12, 2016. Any remaining results through the end of the 52nd month from May 12, 2016, that do not fall within a calendar quarter, must be submitted to EPA no later than 30 days from the end of the 52nd month. The pellet quality analyses shall include results for the following factors: Compression, reducibility, before tumble, after tumble, low temperature disintegration, and swelling. For each of the pellet quality analysis factors, the owner or operator must explain the pellet quality analysis factor, as well as the defined acceptable range for each factor using the applicable product quality standards based upon customers' pellet specifications that are contained in Hibbing's ISO 9001 quality management system. The owner or operator shall provide pellet quality analysis testing results that state the date and time of the analysis and, in order to define the time period when pellets were produced outside of the defined acceptable range for the pellet quality factors listed, provide copies of the production logs that document the starting and ending times for such periods. The owner or operator shall provide an explanation of causes for pellet samples that fail to meet the acceptable range for any pellet quality analysis factor. Pellet quality information and data may be submitted to EPA as Confidential Business Information.

(*6*) No later than 52 months after May 12, 2016, the owner or operator may submit to EPA a report to either confirm or modify the $NO_X$ limits for Hibbing Line 2 furnace within the upper and lower bounds described below. EPA

will review the report and either confirm or modify the $NO_X$ limits. If the CEMS data collected during operating periods between months 44 and 52 that both meet pellet quality specifications and proper furnace/burner operation is normally distributed, the limit adjustment determination shall be based on the appropriate (depending upon whether data are statistically independent or dependent) 95% upper predictive limit (UPL) equations in paragraph (f) of this section. If the CEMS data collected during operating periods between months 44 and 52 that both meet pellet quality specifications and proper furnace/burner operation are not normally distributed, the limit adjustment determination shall be based on the non-parametric equation provided in paragraph (f) of this section. The data set for the determination shall exclude periods when pellet quality did not fall within the defined acceptable ranges of the pellet quality factors identified pursuant to paragraph (b)(1)(ii)(E) of this section and for any subsequent period when production has been reduced in response to pellet quality concerns consistent with Hibbing's ISO 9001 operating standards. Any excluded period will commence at the time documented on the production log demonstrating that pellet quality did not fall within the defined acceptable range and shall end when pellet quality within the defined acceptable range has been re-established at planned production levels, which will be presumed to be the level that existed immediately prior to the reduction in production due to pellet quality concerns. EPA may also exclude data where operations are inconsistent with the reported design parameters of the $NO_X$ reduction control technology installed.

(*7*) EPA will take final agency action by publishing its final confirmation or modification of the $NO_X$ limit in the **Federal Register** no later than 55 months after May 12, 2016. The confirmed or modified $NO_X$ limit for Hibbing Line 2 when burning only natural gas may be no lower than 1.2 lbs $NO_X$/MMBTU, based on a 30-day rolling average, and may not exceed 1.8 lbs $NO_X$/MMBTU, based on a 30-day rolling average.

(C) *Hibbing Line 3.* (*1*) An emission limit of 1.2 lbs $NO_X$/MMBTU, based on a 30-day rolling average, shall apply to Hibbing Line 3 when burning natural gas. This emission limit will become enforceable 60 months after May 12, 2016 and only after EPA's confirmation or modification of the emission limit in accordance with the procedures set forth in paragraphs (b)(1)(ii)(C)(2) through (*7*) of this section.

(*2*) Compliance with this emission limit will be demonstrated with data collected by a continuous emissions monitoring system (CEMS) for $NO_X$. The owner or operator of Hibbing Line 3 must install a CEMS for $NO_X$ and $SO_2$ within six months from May 12, 2016. The owner or operator must start collecting CEMS data and submit the data to EPA no later than 30 days from the end of each calendar quarter after that installation deadline. Any remaining data through the end of the 57th month from May 12, 2016, that does not fall within a calendar quarter, must be submitted to EPA no later than 30 days from the end of the 57th month. Although CEMS data must continue to be collected, it does not need to be submitted to EPA starting 57 months after May 12, 2016.

(*3*) No later than 48 months after May 12, 2016 the owner or operator must submit to EPA a report, including any final report(s) completed by the selected $NO_X$ reduction technology supplier and furnace retrofit engineer, containing a detailed engineering analysis and modeling of the $NO_X$ reduction control technology being installed on Hibbing Line 3. The $NO_X$ reduction control technology must be designed to meet an emission limit of 1.2 lbs $NO_X$/MMBTU. This report must include a list of all process and control technology variables that can reasonably be expected to have an impact on $NO_X$ emissions control technology performance, as well as a description of how these variables can be adjusted to reduce $NO_X$ emissions to meet the $NO_X$ design emission limit.

(*4*) The $NO_X$ reduction control technology shall be installed on Hibbing Line 3 furnace no later than 50 months after May 12, 2016.

(*5*) Commencing on the earlier of: Six months from the installation of the $NO_X$ reduction control technology; or 50 months from May 12, 2016, the owner or operator must provide to EPA the results from pellet quality analyses. The owner or operator shall provide the results from pellet quality analyses no later than 30 days from the end of each calendar quarter up until 57 months after May 12, 2016. Any remaining results through the end of the 57th month from May 12, 2016, that do not fall within a calendar quarter, must be submitted to EPA no later than 30 days from the end of the 57th month. The pellet quality analyses shall include results for the following factors: Compression, reducibility, before tumble, after tumble, low temperature disintegration, and swelling. For each of the pellet quality analysis factors, the owner or operator must explain the pellet quality analysis factor, as well as the defined acceptable range for each factor using the applicable product quality standards based upon customers' pellet specifications that are contained in Hibbing's ISO 9001 quality management system. The owner or operator shall provide pellet quality analysis testing results that state the date and time of the analysis and, in order to define the time period when pellets were produced outside of the defined acceptable range for the pellet quality factors listed, provide copies of the production logs that document the starting and ending times for such periods. The owner or operator shall provide an explanation of causes for pellet samples that fail to meet the acceptable range for any pellet quality analysis factor. Pellet quality information and data may be submitted to EPA as Confidential Business Information.

(*6*) No later than 57 months after May 12, 2016, the owner or operator may submit to EPA a report to either confirm or modify the $NO_X$ limits for Hibbing Line 3 furnace within the upper and lower bounds described below. EPA will review the report and either confirm or modify the $NO_X$ limits. If the CEMS data collected during operating periods between months 50 and 57 that both meet pellet quality specifications and proper furnace/burner operation is normally distributed, the limit adjustment determination shall be based on the appropriate (depending upon whether data are statistically independent or dependent) 95% upper predictive limit (UPL) equations in paragraph (f) of this section. If the CEMS data collected during operating periods between months 50 and 57 that both meet pellet quality specifications and proper furnace/burner operation are not normally distributed, the limit adjustment determination shall be based on the non-parametric equation provided in paragraph (f) of this section. The data set for the determination shall exclude periods when pellet quality did not fall within the defined acceptable ranges of the pellet quality factors identified pursuant to paragraph (b)(1)(ii)(E) of this section and for any subsequent period when production has been reduced in response to pellet quality concerns consistent with Hibbing's ISO 9001 operating standards. Any excluded period will commence at the time documented on the production log demonstrating that pellet quality did not fall within the defined acceptable range and shall end when pellet quality

within the defined acceptable range has been re-established at planned production levels, which will be presumed to be the level that existed immediately prior to the reduction in production due to pellet quality concerns. EPA may also exclude data where operations are inconsistent with the reported design parameters of the $NO_X$ reduction control technology installed.

(*7*) EPA will take final agency action by publishing its final confirmation or modification of the $NO_X$ limit in the **Federal Register** no later than 60 months after May 12, 2016. The confirmed or modified $NO_X$ limit for Hibbing Line 3 when burning only natural gas may be no lower than 1.2 lbs $NO_X$/MMBTU, based on a 30-day rolling average, and may not exceed 1.8 lbs $NO_X$/MMBTU, based on a 30-day rolling average.

* * * * *

(iv) *United Taconite*—(A) *United Taconite Line 1.* (*1*) An emission limit of 2.8 lbs $NO_X$/MMBTU, based on a 720-hour rolling average, shall apply to United Taconite Grate Kiln Line 1 when burning natural gas, and an emission limit of 1.5 lbs $NO_X$/MMBTU, based on a 720-hour rolling average, shall apply to United Taconite Grate Kiln Line 1 when burning coal or a mixture of coal and natural gas. These emission limits will become enforceable 37 months after May 12, 2016 and only after EPA's confirmation or modification of the emission limit in accordance with the procedures set forth in paragraphs (b)(1)(iv)(A)(*2*) through (*8*) of this section.

(*2*) Compliance with these emission limits shall be demonstrated with data collected by a continuous emissions monitoring system (CEMS) for $NO_X$. The owner or operator must start collecting CEMS data for $NO_X$ on May 12, 2016 and submit the data to EPA no later than 30 days from the end of each calendar quarter. Any remaining data through the end of the 34th month from May 12, 2016, that does not fall within a calendar quarter, must be submitted to EPA no later than 30 days from the end of the 34th month. Although CEMS data must continue to be collected, it does not need to be submitted to EPA starting 34 months after May 12, 2016.

(*3*) No later than 24 months from May 12, 2016, the owner or operator must submit to EPA a report, including any final report(s) completed by the selected $NO_X$ reduction technology supplier and furnace retrofit engineer, containing a detailed engineering analysis and modeling of the $NO_X$ reduction control technology being installed on United Taconite Grate Kiln Line 1. This report must include a list of all variables that can reasonably be expected to have an impact on $NO_X$ emission control technology performance, as well as a description of how these variables can be adjusted to reduce $NO_X$ emissions to meet the $NO_X$ design emission limit. This $NO_X$ reduction control technology must be designed to meet emission limits of 2.8 lbs $NO_X$/MMBTU when burning natural gas and 1.5 lbs $NO_X$/MMBTU when burning coal or a mixture of coal and natural gas.

(*4*) The $NO_X$ reduction control technology shall be installed on United Taconite Grate Kiln Line 1 furnace no later than 26 months from May 12, 2016.

(*5*) Commencing on the earlier of: Six months from the installation of the $NO_X$ reduction control technology or 26 months from May 12, 2016, the owner or operator must provide to EPA the results from pellet quality analyses. The owner or operator shall provide the results from pellet quality analyses no later than 30 days from the end of each calendar quarter up until 34 months after May 12, 2016. Any remaining results through the end of the 34th month, that do not fall within a calendar quarter, must be submitted to EPA no later than 30 days from the end of the 34th month. The pellet quality analyses shall include results for the following factors: Compression, reducibility, before tumble, after tumble, and low temperature disintegration. For each of the pellet quality analysis factors, the owner or operator must explain the pellet quality analysis factor, as well as the defined acceptable range for each factor using the applicable product quality standards based upon customers' pellet specifications that are contained in United Taconite's ISO 9001 quality management system. The owner or operator shall provide pellet quality analysis testing results that state the date and time of the analysis and, in order to define the time period when pellets were produced outside of the defined acceptable range for the pellet quality factors listed, provide copies of the production logs that document the starting and ending times for such periods. The owner or operator shall provide an explanation of causes for pellet samples that fail to meet the acceptable range for any pellet quality analysis factor. Pellet quality information and data may be submitted to EPA as Confidential Business Information.

(*6*) No later than 34 months after May 12, 2016, the owner or operator may submit to EPA a report to either confirm or modify the $NO_X$ limits for United Taconite Grate Kiln Line 1 within the upper and lower bounds described below. EPA will review the report and either confirm or modify the $NO_X$ limits. If the CEMS data collected during operating periods between months 26 and 34 that both meet pellet quality specifications and proper furnace/burner operation is normally distributed, the limit adjustment determination shall be based on the appropriate (depending upon whether data are statistically independent or dependent) 95% upper predictive limit (UPL) equations in paragraph (f) of this section. If the CEMS data collected during operating periods between months 26 and 34 that both meet pellet quality specifications and proper furnace/burner operation are not normally distributed, the limit adjustment determination shall be based on the non-parametric equation provided in paragraph (f) of this section. The data set for the determination shall exclude periods when pellet quality did not fall within the defined acceptable ranges of the pellet quality factors identified pursuant to paragraph (b)(1)(iv)(A)(*5*) of this section and for any subsequent period when production had been reduced in response to pellet quality concerns consistent with United Taconite's ISO 9001 operating standards. Any excluded period will commence at the time documented on the production log demonstrating pellet quality did not fall within the defined acceptable range, and shall end when pellet quality within the defined acceptable range has been re-established at planned production levels, which will be presumed to be the level that existed immediately prior to the reduction in production due to pellet quality concerns. EPA may also exclude data where operations are inconsistent with the reported design parameters of the $NO_X$ reduction control technology that were installed.

(*7*) EPA will take final agency action by publishing its final confirmation or modification of the $NO_X$ limits in the **Federal Register** no later than 37 months after May 12, 2016. The confirmed or modified $NO_X$ limit for United Taconite Grate Kiln Line 1 when burning only natural gas may be no lower than 2.8 lbs $NO_X$/MMBTU, based on a 720-hour rolling average, and may not exceed 3.0 lbs $NO_X$/MMBTU, based on a 720-hour rolling average. The confirmed or modified $NO_X$ limit for United Taconite Grate Kiln Line 1 when burning coal or a mixture of coal and natural gas may be no lower than 1.5 lbs $NO_X$/MMBTU, based on a 720-hour rolling average, and may not exceed 2.5

lbs $NO_X$/MMBTU, based on a 720-hour rolling average.

(*8*) If the owner or operator submits a report proposing a single $NO_X$ limit for all fuels, EPA may approve the proposed $NO_X$ limit for all fuels based on a 30-day rolling average. The confirmed or modified limit will be established and enforceable within 37 months from May 12, 2016.

(B) *United Taconite Line 2.* (*1*) An emission limit of 2.8 lbs $NO_X$/MMBTU, based on a 720-hour rolling average, shall apply to United Taconite Grate Kiln Line 2 when burning natural gas, and an emission limit of 1.5 lbs $NO_X$/MMBTU, based on a 720-hour rolling average, shall apply to United Taconite Grate Kiln Line 2 when burning coal or a mixture of coal and natural gas. These emission limits will become enforceable 55 months after May 12, 2016 and only after EPA's confirmation or modification of the emission limit in accordance with the procedures set forth in paragraphs (b)(1)(iv)(B)(*2*) through (*8*) of this section.

(*2*) Compliance with these emission limits shall be demonstrated with data collected by a continuous emissions monitoring system (CEMS) for $NO_X$. The owner or operator must start collecting CEMS data for $NO_X$ on May 12, 2016 and submit the data to EPA no later than 30 days from the end of each calendar quarter. Any remaining data through the end of the 52nd month from May 12, 2016, that does not fall within a calendar quarter, must be submitted to EPA no later than 30 days from the end of the 52nd month. Although CEMS data must continue to be collected, it does not need to be submitted to EPA starting 52 months after May 12, 2016.

(*3*) No later than 42 months from May 12, 2016, the owner or operator must submit to EPA a report, including any final report(s) completed by the selected $NO_X$ reduction technology supplier and furnace retrofit engineer, containing a detailed engineering analysis and modeling of the $NO_X$ reduction control technology being installed on United Taconite Grate Kiln Line 2. This report must include a list of all variables that can reasonably be expected to have an impact on $NO_X$ emission control technology performance, as well as a description of how these variables can be adjusted to reduce $NO_X$ emissions to meet the $NO_X$ design emission limit. This $NO_X$ reduction control technology must be designed to meet emission limits of 2.8 lbs $NO_X$/MMBTU when burning natural gas and 1.5 lbs $NO_X$/MMBTU when burning coal or a mixture of coal and natural gas.

(*4*) The $NO_X$ reduction control technology shall be installed on United Taconite Grate Kiln Line 2 furnace no later than 44 months from May 12, 2016.

(*5*) Commencing on the earlier of: Six months from the installation of the $NO_X$ reduction control technology or 44 months from May 12, 2016, the owner or operator must provide to EPA the results from pellet quality analyses. The owner or operator shall provide the results from pellet quality analyses no later than 30 days from the end of each calendar quarter up until 52 months after May 12, 2016. Any remaining results through the end of the 52nd month, that do not fall within a calendar quarter, must be submitted to EPA no later than 30 days from the end of the 52nd month. The pellet quality analyses shall include results for the following factors: Compression, reducibility, before tumble, after tumble, and low temperature disintegration. For each of the pellet quality analysis factors, the owner or operator must explain the pellet quality analysis factor, as well as the defined acceptable range for each factor using the applicable product quality standards based upon customers' pellet specifications that are contained in United Taconite's ISO 9001 quality management system. The owner or operator shall provide pellet quality analysis testing results that state the date and time of the analysis and, in order to define the time period when pellets were produced outside of the defined acceptable range for the pellet quality factors listed, provide copies of the production logs that document the starting and ending times for such periods. The owner or operator shall provide an explanation of causes for pellet samples that fail to meet the acceptable range for any pellet quality analysis factor. Pellet quality information and data may be submitted to EPA as Confidential Business Information.

(*6*) No later than 52 months after May 12, 2016, the owner or operator may submit to EPA a report to either confirm or modify the $NO_X$ limits for United Taconite Grate Kiln Line 2 within the upper and lower bounds described below. EPA will review the report and either confirm or modify the $NO_X$ limits. If the CEMS data collected during operating periods between months 44 and 52 that both meet pellet quality specifications and proper furnace/burner operation is normally distributed, the limit adjustment determination shall be based on the appropriate (depending upon whether data are statistically independent or dependent) 95% upper predictive limit (UPL) equations in paragraph (f) of this section. If the CEMS data collected during operating periods between months 44 and 52 that both meet pellet quality specifications and proper furnace/burner operation are not normally distributed, the limit adjustment determination shall be based on the non-parametric equation provided in paragraph (f) of this section. The data set for the determination shall exclude periods when pellet quality did not fall within the defined acceptable ranges of the pellet quality factors identified pursuant to paragraph (b)(1)(iv)(B)(*5*) of this section and for any subsequent period when production had been reduced in response to pellet quality concerns consistent with United Taconite's ISO 9001 operating standards. Any excluded period will commence at the time documented on the production log demonstrating pellet quality did not fall within the defined acceptable range, and shall end when pellet quality within the defined acceptable range has been re-established at planned production levels, which will be presumed to be the level that existed immediately prior to the reduction in production due to pellet quality concerns. EPA may also exclude data where operations are inconsistent with the reported design parameters of the $NO_X$ reduction control technology that were installed.

(*7*) EPA will take final agency action by publishing its final confirmation or modification of the $NO_X$ limits in the **Federal Register** no later than 55 months after May 12, 2016. The confirmed or modified $NO_X$ limit for United Taconite Grate Kiln Line 2 when burning only natural gas may be no lower than 2.8 lbs $NO_X$/MMBTU, based on a 720-hour rolling average, and may not exceed 3.0 lbs $NO_X$/MMBTU, based on a 720-hour rolling average. The confirmed or modified $NO_X$ limit for United Taconite Grate Kiln Line 2 when burning coal or a mixture of coal and natural gas may be no lower than 1.5 lbs $NO_X$/MMBTU, based on a 720-hour rolling average, and may not exceed 2.5 lbs $NO_X$/MMBTU, based on a 720-hour rolling average.

(*8*) If the owner or operator submits a report proposing a single $NO_X$ limit for all fuels, EPA may approve the proposed $NO_X$ limit for all fuels based on a 30-day rolling average. The confirmed or modified limit will be established and enforceable within 55 months from May 12, 2016.

(v) *ArcelorMittal USA*—(A) *ArcelorMittal Minorca Mine.* (*1*) An emission limit of 1.2 lbs $NO_X$/MMBTU, based on a 30-day rolling average, shall apply to the ArcelorMittal Minorca Mine indurating furnace when burning natural gas. This emission limit will become enforceable 55 months after

May 12, 2016 and only after EPA's confirmation or modification of the emission limit in accordance with the procedures set forth in paragraphs (b)(1)(v)(A)(*2*) through (*7*) of this section.

(*2*) Compliance with this emission limit will be demonstrated with data collected by a continuous emissions monitoring system (CEMS) for $NO_X$. The owner or operator of the ArcelorMittal Minorca Mine indurating furnace must install a CEMS for $NO_X$ and $SO_2$ within six months from May 12, 2016. The owner or operator must start collecting CEMS data and submit the data to EPA no later than 30 days from the end of each calendar quarter after that installation deadline. Any remaining data through the end of the 52nd month from May 12, 2016, that does not fall within a calendar quarter, must be submitted to EPA no later than 30 days from the end of the 52nd month. Although CEMS data must continue to be collected, it does not need to be submitted to EPA starting 52 months after May 12, 2016.

(*3*) No later than 42 months after May 12, 2016 the owner or operator must submit to EPA a report, including any final report(s) completed by the selected $NO_X$ reduction technology supplier and furnace retrofit engineer, containing a detailed engineering analysis and modeling of the $NO_X$ reduction control technology being installed on the ArcelorMittal Minorca Mine indurating furnace. The $NO_X$ reduction control technology must be designed to meet an emission limit of 1.2 lbs $NO_X$/MMBTU. This report must include a list of all process and control technology variables that can reasonably be expected to have an impact on $NO_X$ emissions control technology performance, as well as a description of how these variables can be adjusted to reduce $NO_X$ emissions to meet the $NO_X$ design emission limit.

(*4*) The $NO_X$ reduction control technology shall be installed on the ArcelorMittal Minorca Mine indurating furnace no later than 44 months after May 12, 2016.

(*5*) Commencing on the earlier of: Six months from the installation of the $NO_X$ reduction control technology; or 44 months from May 12, 2016, the owner or operator must provide to EPA the results from pellet quality analyses. The owner or operator shall provide the results from pellet quality analyses no later than 30 days from the end of each calendar quarter up until 52 months after May 12, 2016. Any remaining results through the end of the 52nd month from May 12, 2016, that do not fall within a calendar quarter, must be submitted to EPA no later than 30 days from the end of the 52nd month. The pellet quality analyses shall include results for the following factors: Compression, reducibility, before tumble, after tumble, low temperature disintegration, and contraction. For each of the pellet quality analysis factors, the owner or operator must explain the pellet quality analysis factor, as well as the defined acceptable range for each factor using the applicable product quality standards based upon customers' pellet specifications that are contained in the ArcelorMittal Minorca Mine's Standard Product Parameters. The owner or operator shall provide pellet quality analysis testing results that state the date and time of the analysis and, in order to define the time period when pellets were produced outside of the defined acceptable range for the pellet quality factors listed, provide copies of production or scale data that document the starting and ending times for such periods. The owner or operator shall provide an explanation of causes for pellet samples that fail to meet the acceptable range for any pellet quality analysis factor. Pellet quality information and data may be submitted to EPA as Confidential Business Information.

(*6*) No later than 52 months after May 12, 2016, the owner or operator may submit to EPA a report to either confirm or modify the $NO_X$ limits for the ArcelorMittal Minorca Mine indurating furnace within the upper and lower bounds described below. EPA will review the report and either confirm or modify the $NO_X$ limits. If the CEMS data collected during operating periods between months 44 and 52 that both meet pellet quality specifications and proper furnace/burner operation is normally distributed, the limit adjustment determination shall be based on the appropriate (depending upon whether data are statistically independent or dependent) 95% upper predictive limit (UPL) equations in paragraph (f) of this section. If the CEMS data collected during operating periods between months 44 and 52 that both meet pellet quality specifications and proper furnace/burner operation are not normally distributed, the limit adjustment determination shall be based on the non-parametric equation provided in paragraph (f) of this section. The data set for the determination shall exclude periods when pellet quality did not fall within the defined acceptable ranges of the pellet quality factors identified pursuant to paragraph (b)(1)(v)(A)(*5*) of this section and for any subsequent period when production has been reduced in response to pellet quality concerns consistent with the ArcelorMittal Minorca Mine's Standard Product Parameters. Any excluded period will commence at the time documented in related quality reports demonstrating that pellet quality did not fall within the defined acceptable range and shall end when pellet quality within the defined acceptable range has been re-established at planned production levels, which will be presumed to be the level that existed immediately prior to the reduction in production due to pellet quality concerns. EPA may also exclude data where operations are inconsistent with the reported design parameters of the $NO_X$ reduction control technology installed.

(*7*) EPA will take final agency action by publishing its final confirmation or modification of the $NO_X$ limit in the **Federal Register** no later than 55 months after May 12, 2016. The confirmed or modified $NO_X$ limit for the ArcelorMittal Minorca Mine indurating furnace when burning only natural gas may be no lower than 1.2 lbs $NO_X$/MMBTU, based on a 30-day rolling average, and may not exceed 1.8 lbs $NO_X$/MMBTU, based on a 30-day rolling average.

(B) [Reserved]

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(2) * * *

(iv) United Taconite: An aggregate emission limit of 529.0 lbs $SO_2$/hr, based on a 30-day rolling average, shall apply to the Line 1 pellet furnace (EU040) and Line 2 pellet furnace (EU042) beginning six months after May 12, 2016. Compliance with this aggregate emission limit shall be demonstrated with data collected by a continuous emissions monitoring system (CEMS) for $SO_2$. The owner or operator must start collecting CEMS data for $SO_2$ beginning six months after May 12, 2016 and submit the data to EPA no later than 30 days from the end of each calendar quarter. Beginning six months after May 12, 2016, any coal burned on UTAC Grate Kiln Line 1 or Line 2 shall have no more than 1.5 percent sulfur by weight based on a monthly block average. The sampling and calculation methodology for determining the sulfur content of coal must be described in the monitoring plan required for this furnace.

* * * * *

(c) *Testing and monitoring.* (1) The owner or operator of the respective facility shall install, certify, calibrate, maintain and operate continuous emissions monitoring systems (CEMS) for $NO_X$ on United States Steel

Corporation, Keetac unit EU030; Hibbing Taconite Company units EU020, EU021, and EU022; United States Steel Corporation, Minntac units EU225, EU261, EU282, EU315, and EU334; United Taconite units EU040 and EU042; ArcelorMittal Minorca Mine unit EU026; and Northshore Mining Company-Silver Bay units Furnace 11 (EU100/EU104) and Furnace 12 (EU110/EU114). Compliance with the emission limits for $NO_X$ shall be determined using data from the CEMS.

(2) The owner or operator shall install, certify, calibrate, maintain, and operate CEMS for $SO_2$ on United States Steel Corporation, Keetac unit EU030; Hibbing Taconite Company units EU020, EU021, and EU022; United States Steel Corporation, Minntac units EU225, EU261, EU282, EU315, and EU334; United Taconite units EU040 and EU042; ArcelorMittal Minorca Mine unit EU026; and Northshore Mining Company-Silver Bay units Furnace 11 (EU100/EU104) and Furnace 12 (EU110/EU114).

(3) The owner or operator shall install, certify, calibrate, maintain, and operate one or more continuous diluent monitor(s) ($O_2$ or $CO_2$) and continuous flow rate monitor(s) on the BART affected units to allow conversion of the $NO_X$ and $SO_2$ concentrations to units of the standard (lbs/MMBTU and lbs/hr, respectively) unless a demonstration is made that a diluent monitor and continuous flow rate monitor are not needed for the owner or operator to demonstrate compliance with applicable emission limits in units of the standards.

(4) For purposes of this section, all CEMS required by this section must meet the requirements of paragraphs (c)(4)(i) through (xiv) of this section.

(i) All CEMS must be installed, certified, calibrated, maintained, and operated in accordance with 40 CFR part 60, appendix B, Performance Specification 2 (PS–2) and appendix F, Procedure 1.

(ii) CEMS must be installed and operational as follows:

(A) All CEMS associated with monitoring $NO_X$ (including the $NO_X$ monitor and necessary diluent and flow rate monitors) at the following facilities: U.S. Steel Keetac, U.S. Steel Minntac, and Northshore Mining Company-Silver Bay, must be installed and operational no later than the unit specific compliance dates for the emission limits identified at paragraphs (b)(1)(i), (iii) and (vi) of this section, respectively.

(B) All CEMS associated with monitoring $NO_X$ (including the $NO_X$ monitor and necessary diluent and flow rate monitors) at the following facilities: Hibbing Taconite Company, United Taconite, and ArcelorMittal Minorca Mine, must be installed and operational no later than the unit specific installation dates for the installation and operation of CEMS identified at paragraphs (b)(1)(ii), (iv) and (v) of this section, respectively.

(C) All CEMS associated with monitoring $SO_2$ at the following facilities: U.S. Steel Keetac, U.S. Steel Minntac, and Northshore Mining Company-Silver Bay, must be installed and operational no later than six months after May 12, 2016.

(D) All CEMS associated with monitoring $SO_2$ at the following facilities: Hibbing Taconite Company, United Taconite, and ArcelorMittal Minorca Mine, must be installed and operational no later than six months after May 12, 2016.

(E) The operational status of the CEMS identified in paragraphs (c)(1) and (2) of this section shall be verified by, as a minimum, completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the devices.

(iii) The owner or operator must conduct a performance evaluation of each CEMS in accordance with 40 CFR part 60, appendix B, PS–2. The performance evaluations must be completed no later than 60 days after the respective CEMS installation.

(iv) The owner or operator of each CEMS must conduct periodic Quality Assurance, Quality Control (QA/QC) checks of each CEMS in accordance with 40 CFR part 60, appendix F, Procedure 1. The first CEMS accuracy test will be a relative accuracy test audit (RATA) and must be completed no later than 60 days after the respective CEMS installation.

(v) The owner or operator of each CEMS must furnish the Regional Administrator two, or upon request, more copies of a written report of the results of each performance evaluation and QA/QC check within 60 days of completion.

(vi) The owner or operator of each CEMS must check, record, and quantify the zero and span calibration drifts at least once daily (every 24 hours) in accordance with 40 CFR part 60, appendix F, Procedure 1, Section 4.

(vii) Except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, all CEMS required by this section shall be in continuous operation during all periods of BART affected process unit operation, including periods of process unit startup, shutdown, and malfunction.

(viii) All CEMS required by this section must meet the minimum data requirements at paragraphs (c)(4)(viii)(A) through (C) of this section.

(A) Complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute quadrant of an hour.

(B) Sample, analyze, and record emissions data for all periods of process operation except as described in paragraph (c)(4)(viii)(C) of this section.

(C) When emission data from CEMS are not available due to continuous monitoring system breakdowns, repairs, calibration checks, or zero and span adjustments, emission data must be obtained using other monitoring systems or emission estimation methods approved by the EPA. The other monitoring systems or emission estimation methods to be used must be incorporated into the monitoring plan required by this section and provide information such that emissions data are available for a minimum of 18 hours in each 24-hour period and at least 22 out of 30 successive unit operating days.

(ix) Owners or operators of each CEMS required by this section must reduce all data to 1-hour averages. Hourly averages shall be computed using all valid data obtained within the hour but no less than one data point in each 15-minute quadrant of an hour. Notwithstanding this requirement, an hourly average may be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant in an hour) if data are unavailable as a result of performance of calibration, quality assurance, preventive maintenance activities, or backups of data from data acquisition and handling systems and recertification events.

(x) The 30-day rolling average emission rate determined from data derived from the CEMS required by this section (in lbs/MMBTU or lbs/hr depending on the emission standard selected) must be calculated in accordance with paragraphs (c)(4)(x)(A) through (F) of this section.

(A) Sum the total pounds of the pollutant in question emitted from the unit during an operating day and the previous 29 operating days.

(B) Sum the total heat input to the unit (in MMBTU) or the total actual hours of operation (in hours) during an operating day and the previous 29 operating days.

(C) Divide the total number of pounds of the pollutant in question emitted during the 30 operating days by the total heat input (or actual hours of operation depending on the emission limit selected) during the 30 operating days.

(D) For purposes of this calculation, an operating day is any day during which fuel is combusted in the BART affected unit regardless of whether pellets are produced. Actual hours of operation are the total hours a unit is firing fuel regardless of whether a complete 24-hour operational cycle occurs (*i.e.* if the furnace is firing fuel for only five hours during a 24-hour period, then the actual operating hours for that day are five. Similarly, total number of pounds of the pollutant in question for that day is determined only from the CEMS data for the five hours during which fuel is combusted.)

(E) If the owner or operator of the CEMS required by this section uses an alternative method to determine 30-day rolling averages, that method must be described in detail in the monitoring plan required by this section. The alternative method will only be applicable if the final monitoring plan and the alternative method are approved by EPA.

(F) A new 30-day rolling average emission rate must be calculated for each new operating day.

(xi) The 720-hour rolling average emission rate determined from data derived from the CEMS required by this section (in lbs/MMBTU) must be calculated in accordance with (c)(4)(xi)(A) through (C).

(A) Sum the total pounds of $NO_X$ emitted from the unit every hour and the previous (not necessarily consecutive) 719 hours for which that type of fuel (either natural gas or mixed coal and natural gas) was used.

(B) Sum the total heat input to the unit (in MMBTU) every hour and the previous (not necessarily consecutive) 719 hours for which that type of fuel (either natural gas or mixed coal and natural gas) was used.

(C) Divide the total number of pounds of $NO_X$ emitted during the 720 hours, as defined above, by the total heat input during the same 720 hour period. This calculation must be done separately for each fuel type (either for natural gas or mixed coal and natural gas).

(xii) Data substitution must not be used for purposes of determining compliance under this section.

(xiii) All CEMS data shall be reduced and reported in units of the applicable standard.

(xiv) A Quality Control Program must be developed and implemented for all CEMS required by this section in accordance with 40 CFR part 60, appendix F, Procedure 1, Section 3. The program will include, at a minimum, written procedures and operations for calibration checks, calibration drift adjustments, preventative maintenance, data collection, recording and reporting, accuracy audits/procedures, periodic performance evaluations, and a corrective action program for malfunctioning CEMS.

(d) *Recordkeeping requirements.* (1)(i) Records required by this section must be kept in a form suitable and readily available for expeditious review.

(ii) Records required by this section must be kept for a minimum of five years following the date of creation.

(iii) Records must be kept on site for at least two years following the date of creation and may be kept offsite, but readily accessible, for the remaining three years.

(2) The owner or operator of the BART affected units must maintain the records at paragraphs (d)(2)(i) through (xi) of this section.

(i) A copy of each notification and report developed for and submitted to comply with this section including all documentation supporting any initial notification or notification of compliance status submitted according to the requirements of this section.

(ii) Records of the occurrence and duration of startup, shutdown, and malfunction of the BART affected units, air pollution control equipment, and CEMS required by this section.

(iii) Records of activities taken during each startup, shutdown, and malfunction of the BART affected unit, air pollution control equipment, and CEMS required by this section.

(iv) Records of the occurrence and duration of all major maintenance conducted on the BART affected units, air pollution control equipment, and CEMS required by this section.

(v) Records of each excess emission report, including all documentation supporting the reports, dates and times when excess emissions occurred, investigations into the causes of excess emissions, actions taken to minimize or eliminate the excess emissions, and preventative measures to avoid the cause of excess emissions from occurring again.

(vi) Records of all CEMS data including, as a minimum, the date, location, and time of sampling or measurement, parameters sampled or measured, and results.

(vii) All records associated with quality assurance and quality control activities on each CEMS as well as other records required by 40 CFR part 60, appendix F, Procedure 1 including, but not limited to, the quality control program, audit results, and reports submitted as required by this section.

(viii) Records of the $NO_X$ emissions during all periods of BART affected unit operation, including startup, shutdown, and malfunction in the units of the standard. The owner or operator shall convert the monitored data into the appropriate unit of the emission limitation using appropriate conversion factors and F-factors. F-factors used for purposes of this section shall be documented in the monitoring plan and developed in accordance with 40 CFR part 60, appendix A, Method 19. The owner or operator may use an alternate method to calculate the $NO_X$ emissions upon written approval from EPA.

(ix) Records of the $SO_2$ emissions in lbs/MMBTUs or lbs/hr(based on CEMS data), depending on the emission standard selected, during all periods of operation, including periods of startup, shutdown, and malfunction, in the units of the standard.

(x) Records associated with the CEMS unit including type of CEMS, CEMS model number, CEMS serial number, and initial certification of each CEMS conducted in accordance with 40 CFR part 60, appendix B, Performance Specification 2 must be kept for the life of the CEMS unit.

(xi) Records of all periods of fuel oil usage as required at paragraph (b)(2)(vii) of this section.

(e) *Reporting requirements.* (1) All requests, reports, submittals, notifications, and other communications to the Regional Administrator required by this section shall be submitted, unless instructed otherwise, to the Air and Radiation Division, U.S. Environmental Protection Agency, Region 5 (A–18J), at 77 West Jackson Boulevard, Chicago, Illinois 60604.

(2) The owner or operator of each BART affected unit identified in this section and CEMS required by this section must provide to the Regional Administrator the written notifications, reports and plans identified at paragraphs (e)(2)(i) through (viii) of this section. If acceptable to both the Regional Administrator and the owner or operator of each BART affected unit identified in this section and CEMS required by this section the owner or operator may provide electronic notifications, reports, and plans.

(i) A notification of the date construction of control devices and installation of burners required by this section commences postmarked no later than 30 days after the commencement date.

(ii) A notification of the date the installation of each CEMS required by this section commences postmarked no later than 30 days after the commencement date.

(iii) A notification of the date the construction of control devices and installation of burners required by this

section is complete postmarked no later than 30 days after the completion date.

(iv) A notification of the date the installation of each CEMS required by this section is complete postmarked no later than 30 days after the completion date.

(v) A notification of the date control devices and burners installed by this section startup postmarked no later than 30 days after the startup date.

(vi) A notification of the date CEMS required by this section startup postmarked no later than 30 days after the startup date.

(vii) A notification of the date upon which the initial CEMS performance evaluations are planned. This notification must be submitted at least 60 days before the performance evaluation is scheduled to begin.

(viii) A notification of initial compliance, signed by the responsible official who shall certify its accuracy, attesting to whether the source has complied with the requirements of this section, including, but not limited to, applicable emission standards, control device and burner installations, CEMS installation and certification. This notification must be submitted before the close of business on the 60th calendar day following the completion of the compliance demonstration and must include, at a minimum, the information at paragraphs (e)(2)(viii)(A) through (F) of this section.

(A) The methods used to determine compliance.

(B) The results of any CEMS performance evaluations, and other monitoring procedures or methods that were conducted.

(C) The methods that will be used for determining continuing compliance, including a description of monitoring and reporting requirements and test methods.

(D) The type and quantity of air pollutants emitted by the source, reported in units of the standard.

(E) A description of the air pollution control equipment and burners installed as required by this section, for each emission point.

(F) A statement by the owner or operator as to whether the source has complied with the relevant standards and other requirements.

(3) The owner or operator must develop and implement a written startup, shutdown, and malfunction plan for $NO_X$ and $SO_2$. The plan must include, at a minimum, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; and a program of corrective action for a malfunctioning process and air pollution control and monitoring equipment used to comply with the relevant standard. The plan must ensure that, at all times, the owner or operator operates and maintains each affected source, including associated air pollution control and monitoring equipment, in a manner which satisfies the general duty to minimize or eliminate emissions using good air pollution control practices. The plan must ensure that owners or operators are prepared to correct malfunctions as soon as practicable after their occurrence.

(4) The written reports of the results of each performance evaluation and QA/QC check in accordance with and as required by paragraph (c)(4)(v) of this section.

(5) *Compliance reports.* The owner or operator of each BART affected unit must submit semiannual compliance reports. The semiannual compliance reports must be submitted in accordance with paragraphs (e)(5)(i) through (iv) of this section, unless the Administrator has approved a different schedule.

(i) The first compliance report must cover the period beginning on the compliance date that is specified for the affected source through June 30 or December 31, whichever date comes first after the compliance date that is specified for the affected source.

(ii) The first compliance report must be postmarked no later than 30 calendar days after the reporting period covered by that report (July 30 or January 30), whichever comes first.

(iii) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(iv) Each subsequent compliance report must be postmarked no later than 30 calendar days after the reporting period covered by that report (July 30 or January 30).

(6) *Compliance report contents.* Each compliance report must include the information in paragraphs (e)(6)(i) through (vi) of this section.

(i) Company name and address.

(ii) Statement by a responsible official, with the official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(iii) Date of report and beginning and ending dates of the reporting period.

(iv) Identification of the process unit, control devices, and CEMS covered by the compliance report.

(v) A record of each period of startup, shutdown, or malfunction during the reporting period and a description of the actions the owner or operator took to minimize or eliminate emissions arising as a result of the startup, shutdown or malfunction and whether those actions were or were not consistent with the source's startup, shutdown, and malfunction plan.

(vi) A statement identifying whether there were or were not any deviations from the requirements of this section during the reporting period. If there were deviations from the requirements of this section during the reporting period, then the compliance report must describe in detail the deviations which occurred, the causes of the deviations, actions taken to address the deviations, and procedures put in place to avoid such deviations in the future. If there were no deviations from the requirements of this section during the reporting period, then the compliance report must include a statement that there were no deviations. For purposes of this section, deviations include, but are not limited to, emissions in excess of applicable emission standards established by this section, failure to continuously operate an air pollution control device in accordance with operating requirements designed to assure compliance with emission standards, failure to continuously operate CEMS required by this section, and failure to maintain records or submit reports required by this section.

(7) Each owner or operator of a CEMS required by this section must submit quarterly excess emissions and monitoring system performance reports for each pollutant monitored for each BART affected unit monitored. All reports must be postmarked by the 30th day following the end of each three-month period of a calendar year (January-March, April-June, July-September, October-December) and must include, at a minimum, the requirements at paragraphs (e)(7)(i) through (xv) of this section.

(i) Company name and address.

(ii) Identification and description of the process unit being monitored.

(iii) The dates covered by the reporting period.

(iv) Total source operating hours for the reporting period.

(v) Monitor manufacturer, monitor model number, and monitor serial number.

(vi) Pollutant monitored.

(vii) Emission limitation for the monitored pollutant.

(viii) Date of latest CEMS certification or audit.

(ix) A description of any changes in continuous monitoring systems, processes, or controls since the last reporting period.

(x) A table summarizing the total duration of excess emissions, as defined at paragraphs (e)(7)(x)(A) through (B) of this section, for the reporting period broken down by the cause of those excess emissions (startup/shutdown, control equipment problems, process problems, other known causes, unknown causes), and the total percent of excess emissions (for all causes) for the reporting period calculated as described at paragraph (e)(7)(x)(C) of this section.

(A) For purposes of this section, an excess emission is defined as any 30-day or 720-hour rolling average period, including periods of startup, shutdown, and malfunction, during which the 30-day or 720-hour (as appropriate) rolling average emissions of either regulated pollutant ($SO_2$ and $NO_X$), as measured by a CEMS, exceeds the applicable emission standards in this section.

(B)(*1*) For purposes of this rule, if a facility calculates a 30-day rolling average emission rate in accordance with this rule which exceeds the applicable emission standards of this rule, then it will be considered 30 days of excess emissions. If the following 30-day rolling average emission rate is calculated and found to exceed the applicable emission standards of this rule as well, then it will add one more day to the total days of excess emissions (*i.e.* 31 days). Similarly, if an excess emission is calculated for a 30-day rolling average period and no additional excess emissions are calculated until 15 days after the first, then that new excess emission will add 15 days to the total days of excess emissions (*i.e.* 30 + 15 = 45). For purposes of this section, if an excess emission is calculated for any period of time within a reporting period, there will be no fewer than 30 days of excess emissions but there should be no more than 121 days of excess emissions for a reporting period.

(*2*) For purposes of this section, if a facility calculates a 720-hour rolling average emission rate in accordance with this rule which exceeds the applicable emission standards of this section, then it will be considered 30 days of excess emissions. If the 24th following 720-hour rolling average emission rate is calculated and found to exceed the applicable emission standards of the rule as well, then it will add one more day to the total days of excess emissions (*i.e.* 31 days). Similarly, if an excess emission is calculated for a 720-hour rolling average period and no additional excess emissions are calculated until 360 hours after the first, then that new excess emission will add 15 days to the total days of excess emissions (*i.e.* 30+15 = 45). For purposes of this section, if an excess emission is calculated for any period of time with a reporting period, there will be no fewer than 30 days of excess emissions but there should be no more than 121 days of excess emissions for a reporting period.

(C) For purposes of this section, the total percent of excess emissions will be determined by summing all periods of excess emissions (in days) for the reporting period, dividing that number by the total BART affected unit operating days for the reporting period, and then multiplying by 100 to get the total percent of excess emissions for the reporting period. An operating day, as defined previously, is any day during which fuel is fired in the BART affected unit for any period of time. Because of the possible overlap of 30-day rolling average excess emissions across quarters, there are some situations where the total percent of excess emissions could exceed 100 percent. This extreme situation would only result from serious excess emissions problems where excess emissions occur for nearly every day during a reporting period.

(xi) A table summarizing the total duration of monitor downtime, as defined at paragraph (e)(7)(xi)(A) of this section, for the reporting period broken down by the cause of the monitor downtime (monitor equipment malfunctions, non-monitor equipment malfunctions, quality assurance calibration, other known causes, unknown causes), and the total percent of monitor downtime (for all causes) for the reporting period calculated as described at paragraph (e)(7)(xi)(B) of this section.

(A) For purposes of this section, monitor downtime is defined as any period of time (in hours) during which the required monitoring system was not measuring emissions from the BART affected unit. This includes any period of CEMS QA/QC, daily zero and span checks, and similar activities.

(B) For purposes of this section, the total percent of monitor downtime will be determined by summing all periods of monitor downtime (in hours) for the reporting period, dividing that number by the total number of BART affected unit operating hours for the reporting period, and then multiplying by 100 to get the total percent of excess emissions for the reporting period.

(xii) A table which identifies each period of excess emissions for the reporting period and includes, at a minimum, the information in paragraphs (e)(7)(xii)(A) through (F) of this section.

(A) The date of each excess emission.

(B) The beginning and end time of each excess emission.

(C) The pollutant for which an excess emission occurred.

(D) The magnitude of the excess emission.

(E) The cause of the excess emission.

(F) The corrective action taken or preventative measures adopted to minimize or eliminate the excess emissions and prevent such excess emission from occurring again.

(xiii) A table which identifies each period of monitor downtime for the reporting period and includes, at a minimum, the information in paragraphs (e)(7)(xiii)(A) through (D) of this section.

(A) The date of each period of monitor downtime.

(B) The beginning and end time of each period of monitor downtime.

(C) The cause of the period of monitor downtime.

(D) The corrective action taken or preventative measures adopted for system repairs or adjustments to minimize or eliminate monitor downtime and prevent such downtime from occurring again.

(xiv) If there were no periods of excess emissions during the reporting period, then the excess emission report must include a statement which says there were no periods of excess emissions during this reporting period.

(xv) If there were no periods of monitor downtime, except for daily zero and span checks, during the reporting period, then the excess emission report must include a statement which says there were no periods of monitor downtime during this reporting period except for the daily zero and span checks.

(8) The owner or operator of each CEMS required by this section must develop and submit for review and approval by the Regional Administrator a site specific monitoring plan. The purpose of this monitoring plan is to establish procedures and practices which will be implemented by the owner or operator in its effort to comply with the monitoring, recordkeeping, and reporting requirements of this section. The monitoring plan must include, at a minimum, the information at paragraphs (e)(8)(i) through (x) of this section.

(i) Site specific information including the company name, address, and contact information.

(ii) The objectives of the monitoring program implemented and information describing how those objectives will be met.

(iii) Information on any emission factors used in conjunction with the

CEMS required by this section to calculate emission rates and a description of how those emission factors were determined.

(iv) A description of methods to be used to calculate emission rates when CEMS data are not available due to downtime associated with QA/QC events.

(v) A description of the QA/QC program to be implemented by the owner or operator of CEMS required by this section. This can be the QA/QC program developed in accordance with 40 CFR part 60, appendix F, Procedure 1, Section 3.

(vi) A list of spare parts for CEMS maintained on site for system maintenance and repairs.

(vii) A description of the procedures to be used to calculate 30-day rolling averages and 720-hour rolling averages and example calculations which show the algorithms used by the CEMS to calculate 30-day rolling averages and 720-hour rolling averages.

(viii) A sample of the document to be used for the quarterly excess emission reports required by this section.

(ix) A description of the procedures to be implemented to investigate root causes of excess emissions and monitor downtime and the proposed corrective actions to address potential root causes of excess emissions and monitor downtime.

(x) A description of the sampling and calculation methodology for determining the percent sulfur by weight as a monthly block average for coal used during that month.

(f) *Equations for establishing the upper predictive limit*—(1) *Equation for normal distribution and statistically independent data.*

$$UPL = \bar{x} + t_{[(n-1),(0.95)]}\sqrt{s^2\left(\frac{1}{n} + \frac{1}{m}\right)}$$

Where:

$\bar{x}$ = average or mean of hourly test run data;

$t_{[(n-1),(0.95)]}$ = t score, the one-tailed t value of the Student's t distribution for a specific degree of freedom (n − 1) and a confidence level (0.95; 0.99 for Tilden $SO_2$)

$s^2$ = variance of the hourly data set;

$n$ = number of values (*e.g.* 5,760 if 8 months of valid lbs $NO_X$/MMBTU hourly values)

$m$ = number of values used to calculate the test average (m = 720 as per averaging time)

(i) To determine if statistically independent, use the Rank von Neumann Test on p. 137 of data Quality Assessment: Statistical Methods for Practitioners EPA QA/G–9S.

(ii) Alternative to Rank von Neumann test to determine if data are dependent, data are dependent if t test value is greater than t critical value, where:

$$t\ test = \frac{\rho}{\sqrt{\frac{1-\rho^2}{n-2}}}$$

ρ = correlation between data points

*t critical* = $t_{[(n-2),(0.95)]}$ = t score, the two-tailed t value of the Student's t distribution for a specific degree of freedom (n − 2) and a confidence level (0.95)

(iii) The Anderson-Darling normality test is used to establish whether the data are normally distributed. That is, a distribution is considered to be normally distributed when p > 0.05.

(2) *Non-parametric equation for data not normally distributed and normally distributed but not statistically independent.*

$m = (n + 1) * \alpha$

$m$ = the rank of the ordered data point, when data are sorted smallest to largest. The data points are 720-hour averages for establishing $NO_X$ limits.

$n$ = number of data points (*e.g.,* 5040 720-hourly averages for eight months of valid $NO_X$ lbs/MMBTU values)

α = 0.95, to reflect the 95th percentile

If $m$ is a whole number, then the limit, UPL, shall be computed as:

$UPL = X_m$

Where:

$X_m$ = value of the *mth* data point in terms of lbs $SO_2$/hr or lbs $NO_X$/MMBTU, when the data are sorted smallest to largest.

If $m$ is not a whole number, the limit shall be computed by linear interpolation according to the following equation.

$UPL = x_m = x_{m_i \cdot m_d} = x_{m_i} + 0.m_d\,(x_{m_i+1} - x_{m_i})$

Where:

$m_i$ = the integer portion of $m$, *i.e., m* truncated at zero decimal places, and

$m_d$ = the decimal portion of $m$

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