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October 16, 2014

Ms. Gina McCarthy
EPA Docket Center (EPA/DC)
Docket ID EPA-HQ-OAR-2013-0603
U.S. Environmental Protection Agency
Mailcode: 28221T
1200 Pennsylvania Ave. NW.
Washington DC 20460

Subject: State of Wisconsin Comments Regarding EPA's Proposed Carbon Pollution Standards for Modified and Reconstructed EGUs

Dear Ms. McCarthy:

The Wisconsin Department of Natural Resources (WDNR) hereby submits comments on EPA's proposed rule for carbon standards of performance for modified and reconstructed electric utility generating units (EGUs), published on June 18, 2014 (*79 FR 34960*). WDNR is concerned about the impact on modified and reconstructed EGUs from the proposed rule in several areas. Particular areas of concern for Wisconsin are:

- Sources potentially triggering New Source Review (NSR) by complying with the proposed standards.
- EPA's method of setting the best system of emission reduction (BSER) based on the "best one year" historic emission rate.
- The additional 2% emission reduction requirement on top of the "best one year" historic emission rate.

WDNR provides the following comments on these and other issues:

1. <u>EPA must ensure that sources will not trigger NSR requirements when making physical or operational changes to comply with the proposed rule.</u>

EPA's proposed standards could potentially cause sources to trigger NSR permitting requirements, due to the heat rate improvement (HRI) requirements inherent in the BSER, combined with potential increased utilization of EGUs after their HRI activities. This increased utilization may result from a lower cost for electricity production relative to other EGUs, and would be beyond the control of the EGU owners/operators. EPA should not set standards under one rule requirement that create the risk of triggering permitting requirements, such as NSR. EPA should instead provide guidance to ensure that sources with projected emission increases due to increased utilization after implementing HRI requirements do not trigger NSR requirements. Allowing states to evaluate HRI opportunities on a unit-by-unit basis, as indicated in comment 3 below, could also help address this issue. EPA should also consider that the potential to trigger NSR will be a disincentive for operators to pursue HRI, generally.

Note that WDNR intends to submit a similar comment on EPA's 111(d) proposal for existing EGUs. In that proposal, EPA's proposed building blocks for HRI and increased dispatch of natural gas units could also potentially trigger NSR for sources.

2. <u>In setting the BSER limit, utilities should be allowed to use a period of years to establish the best historical annual emission rate, instead of the "best one year" as proposed by EPA.</u>

EPA solicits comments on whether the unit-specific emission standard should be based on the best annual emission rate (for the period 2002 until the date of modification) or the best three consecutive year average emission rate.

The BSER standard should not be the best historical annual emissions rate, since this does not factor in variables that can affect a unit's performance and CO_2 emissions, such as load, fuel quality, and temperature. At a minimum, the best three consecutive year average emission rate is more appropriate in order to account for these variables. However, EPA should consider allowing an averaging period up to five years, which is the period allowed for evaluating a modification under NSR air permitting requirements. EPA should also accommodate cases where there is insufficient historic operation data to reflect recent physical or operational changes at a source, such as switching from bituminous to sub-bituminous coal or adding on air pollution control equipment. These types of operational changes would result in a higher net heat rate at the source, and EPA should ensure that the BSER emission limit reflects those higher heat rates.

3. <u>In setting the BSER limit, the additional percent emission reduction (on top of the best annual emission rate) to reflect equipment upgrades should be determined on a unit-by-unit basis, versus a fleet-wide 2% reduction as proposed by EPA.</u>

EPA solicits comments on whether there are circumstances in which the 2% additional emission reduction should not apply.

It is inappropriate to apply the 2% additional emission reduction as EPA proposes for sources that have already implemented aggressive measures to improve operating efficiency. The ability to achieve a 2% improvement through equipment upgrades will vary from plant to plant. In general, plants that have already implemented equipment upgrades will have less opportunity to make further improvements. EGUs in Wisconsin are regulated by the state Public Service Commission, and, as a regulated utility sector, already implement equipment upgrades (including periodic overhauls) on a regular basis to return efficiency to near original heat rates. EPA should also recognize that new plants, particularly supercritical units such as Elm Road 1 and 2 and Weston 4 in Wisconsin, will likely not be able to improve their heat rates.

As part of our review of EPA's concurrent 111(d) proposal for existing sources – which supposes a 4% HRI due to best operating practices and an additional 2% HRI due to equipment improvements – we performed an initial review of EPA's assumed HRI actions with many Wisconsin EGU operators. All of these utilities have operating and administrative programs in place to constantly maintain and improve coal-fired EGU heat rates. A summary table of this review is attached in Appendix A. The EGUs listed in the appendix generated approximately 95% of the electricity generated by the Wisconsin coal-fired EGU fleet in 2012. The last four columns in Appendix A contain the HRI actions that EPA associates with equipment improvements – turbine overhaul/maintenance, flue gas system improvements, economizer replacement, and acid dew point control. As the table shows, most EGUs in Wisconsin have already undertaken these improvements, if appropriate. This indicates that any one unit is not likely to be able to achieve EPA's assumed 2% HRI due to equipment improvements. This also indicates that any EGU that becomes a "modified source" should instead be evaluated on a case-by-case basis to see what HRI equipment improvements are actually feasible at that unit, based on improvements completed to date.

4. <u>The BSER emission limits that EPA proposes for modified coal-fired units are too stringent and should also account for the unit's steam cycle.</u>

EPA proposes "most stringent" emission standards for modified coal-fired units of 1,900 Lb CO_2/MWh-net with a heat input rating of greater than 2,000 MMBtu/h, and 2,100 Lb CO_2/MWh-net for units with a heat input rating of 2,000 MMBtu/h or less. EPA solicits comments on a range of 1,700 to 2,100 lb CO_2/MWh-net for units greater than 2,000 MMBtu/h. EPA also solicits comments on whether the "most stringent" standard should take into account the current steam cycle of the facility.

We disagree with the proposed "most stringent" standard for modified units, which accounts only for the size of a unit. Instead, we agree with the alternative option suggested by EPA, that the "most stringent" standard should also take into account the current steam cycle of the facility. Under this alternative option, EPA first suggests an emission standard for supercritical boilers of 1,900 Lb CO_2/MWh-net for units with a heat input rating of greater than 2,000 MMBtu/h. EPA then suggests a higher (i.e., less stringent) standard for all modified subcritical sources and for modified supercritical sources of 2,100 Lb CO_2/MWh-net with a heat input rating of 2,000 MMBtu/h or less. We agree with this alternative option, with a key exception: the 1,900 Lb/MWh-net standard for supercritical units with a heat input rating of greater than 2,000 MMBtu/h is too stringent.

The "most stringent" limit for supercritical units is based on the BSER limit that EPA proposes for a reconstructed fossil fuel-fired boiler, which EPA determined based on their review of emission rate information submitted by owners/operators of coal-fired EGUs to EPA's Clean Air Markets Division (CAMD). However, Wisconsin believes this limit should be evaluated further in light of what modern units are actually achieving. For example, the Elm Road power plant operated by We Energies in Wisconsin is powered by supercritical boilers firing bituminous and sub-bituminous coal. This plant began operation in 2009 and is one of the most modern and efficient coal fired power plants operating in the country. Yet Elm Road is only demonstrating a CO_2 emission rate of 2,061 Lb/MWh-net.[1] Based on this example, EPA needs to reevaluate the proposed "most stringent" limits for supercritical coal-fired units.

5. EPA should avoid conflicting or redundant energy efficiency improvement requirements between the 111(b) and 111(d) rules.

EPA solicits comment on, where a modified source is subject to a 111(d) plan, whether it should be required to take, as its unit-specific emission rate, the lower of (1) the emission rate it is subject to under the 111(d) plan, or (2) the emission rate that is 2% less than the unit's best demonstrated annual performance.

In general, EPA should assess the energy efficiency improvement requirements under the 111(b) rule for modified and reconstructed sources and the 111(d) rule for existing sources, and ensure that redundant requirements are avoided. When the 111(b) and 111(d) limits/requirements differ, EPA should provide guidance on which requirement is controlling. Also, as noted in comment (3) above, the additional percent emission reduction (on top of the best annual emission rate) should be less than the 2% proposed by EPA for sources that have already implemented aggressive measures to improve operating efficiency.

[1] Emission rate based on 2014 operational data (January through September) submitted by We Energies for EPA's CAMD database and Department of Energy's EIA-923 form. Elm Road operated at 63% capacity during this period.

Finally, the comments set forth in this letter should not be interpreted as Wisconsin's endorsement of this initiative. We note there are significant legal and policy issues regarding EPA's authority to regulate CO2 emitted from modified and reconstructed fossil fuel electric power plants. Therefore, these comments do not waive any future legal claims that Wisconsin may have regarding the promulgation or enforcement of the regulations.

Thank you for the opportunity to comment on the proposed rule for carbon standards of performance for modified and reconstructed EGUs. Please contact Jonathan Loftus in the WDNR's Air Management program at (608) 264-8868 or Jonathan.Loftus@wisconsin.gov if you have any questions concerning our comments.

Sincerely,

Bart Sponseller
Director, Air Management Program

Attachment

Appendix A – Initial Analysis of HRI Actions Implemented Prior to 2012 by Wisconsin Utilities.

Category	EGU	2012 Gross Generation (MWH)	HRI Action												
			Neural Network	Intelligent Sootblowers	Air heater and duct leakage	Condenser Cleaning	Boiler feedpump	Cooling tower packing	FGD modifications	SCR modifications	ESP modifications	Turbine Overall / Maintenance	Flue Gas System	Economizer replacement	Acid dew point
New Since 2008	Elm Road 1	602,115	X	X	X	X	X	NA	X	X	X	X	X	X	X
	Elm Road 2	1,639,751	X	X	X	X	X	NA	X	X	X	X	X	X	X
	Weston 4	3,625,282	X	X	X	X	X	X	X	X	X	X	X	X	NA
Vintage Units (Coal EGUs in place prior to 2008)	Columbia 1	3,930,969	X	X		X	X	X	NA	NA	X	X	\	X	NA
	Columbia 2	3,825,340	X	X		X	X	X	NA	NA	X	X	\	X	NA
	Edgewater 5	2,196,957	X	X		X	X	NA	NA	NA	X	X	\	\	NA
	Genoa	982,144	X			X	X	NA	NA	NA	X	X	X	ORH	NA
	JP Madget	2,103,104	X	X		X	X	NA	X	NA	X	X	X	ORH	NA
	Pleasant Prairie 1	3,397,014	X	X		X	X		NA	X	X	X	\		NA
	Pleasant Prairie 2	2,543,590	X	X		X	X		NA	X	X	X	\		NA
	Pulliam 7	129,240	X	X		X	X	NA	NA	NA	X	X	\		NA
	Pulliam 8	391,430	X	X		X	X	NA	NA	NA	X	X	\		NA
	Oak Creek 5	866,824	X	X		X	X	NA	NA	X	X	X	X	X	NA
	Oak Creek 6	1,060,146	X	X		X	X	NA	NA	X	X	X	X	X	NA
	Oak Creek 7	1,227,790	X	X		X	X	NA	NA	X	X	X	X	X	NA
	Oak Creek 8	1,217,134	X	X		X	X	NA	NA	X	X	X	X	X	NA
	Weston 3	3,625,282	X	X		X	X	OHR	X	X	X	X	X	ORH	NA

Note: The "X" represent where the action has been completed or actions have been taken which appear to achieve the equivalent outcomes. The "\" indicates where activity has occurred equivalent to some extent with the HRI action. "ORH" indicates where action has been specifically taken to maintain the heat rate. NA identifies cases where the action is not applicable.