

# West Virginia NO<sub>x</sub> SIP Call Non-EGU Budget Demonstration

**West Virginia Department of Environmental Protection (DEP), Division of Air Quality (DAQ)**

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45CSR40 “Control of Ozone Season Nitrogen Oxides Emissions” establishes an ozone season budget for oxides of nitrogen (NO<sub>x</sub>). The ozone season NO<sub>x</sub> budget is 2,184 tons for units that have a maximum design heat input greater than 250 mmBtu/hr, excluding any unit subject to the federal Cross-State Air Pollution Rule NO<sub>x</sub> Ozone Season Trading Program established under 40 CFR Part 97, Subpart BBBBB or an equivalent trading program established under regulations approved as a state implementation plan revision pursuant to 40 CFR § 52.38(b)(5). The rule also requires West Virginia to demonstrate to the U.S. Environmental Protection Agency (EPA) how the budget will be met.

## *Background*

In October 1998, the EPA finalized a “Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone” - commonly referred to as the NO<sub>x</sub> SIP Call. It required twenty-two (22) states and the District of Columbia to submit State Implementation Plans to address the regional transport of ground-level ozone. West Virginia is subject to the NO<sub>x</sub> SIP Call.

West Virginia was subject to the subsequent NO<sub>x</sub> Budget Trading Program (NBP) which began in 2003. The NBP was designed to mitigate the transport of ozone in response to the NO<sub>x</sub> SIP Call, and required the reduction of NO<sub>x</sub>, one of the precursors of ozone, during the warm summer months, referred to as the ozone season. The Clean Air Interstate Rule (CAIR) was finalized by the EPA in 2005 and although it did not technically replace the NBP, electric generating units (EGUs) that met the requirements of CAIR also met the NO<sub>x</sub> SIP Call requirements. In July of 2011, the EPA finalized the Cross-State Air Pollution Rule (CSAPR) to replace CAIR; however, CSAPR does not apply to the non-EGU large boilers and combustion turbines that were included in West Virginia’s original NO<sub>x</sub> SIP Call compliance strategy.

In response to CAIR, the DEP promulgated 45CSR40 “Control of Ozone Season Nitrogen Oxides Emissions”, which included the provisions of the CAIR program for EGUs and the NBP provisions for non-EGUs. The DEP then repealed 45CSR1 “NO<sub>x</sub> Budget Trading Program as a Means of Control and Reduction of Nitrogen Oxides From Non-Electric Generating Units” and 45CSR26 “NO<sub>x</sub> Budget Trading Program as a Means of Control and Reduction of Nitrogen Oxides from Electric Generating Units”. In 2016, when CSAPR replaced CAIR, 45CSR40 was revised to remove the CAIR provisions, retaining the NO<sub>x</sub> SIP Call requirements for non-EGUs which were beyond the scope of CSAPR. 45CSR40 requires West Virginia to show continuing compliance with the NO<sub>x</sub> SIP Call through a demonstration to the EPA that the ozone season NO<sub>x</sub> budget of 2,184 tons for non-EGUs will be achieved [65FR2767, January 18, 2000].

## *Methodology*

The tables below identify the facilities and units with a maximum design heat input greater than 250 mmBtu/hr that were included in the NBP and are not subject to CSAPR, or an equivalent trading program established under regulations approved as a state implementation plan revision pursuant to 40 CFR §52.38(b)(5). Table 1 identifies units that were included in the NBP that have been permanently

shut down. Table 2 identifies the subject units that are currently operating. The “Ozone Season NO<sub>x</sub> Emissions” are the maximum potential NO<sub>x</sub> emissions calculated by assuming each unit operates at its maximum design heat input for the entire ozone season (3,672 hours) or for its maximum permitted annual operating hours (if less than 3,672 hours).

This demonstration is based on the maximum potential NO<sub>x</sub> emissions during the ozone season, starting with the 2017 ozone season. If a new unit meeting the applicability requirements of 45CSR40 is permitted, the DEP will update the ozone season NO<sub>x</sub> budget demonstration to include the new unit and verify that the ozone season NO<sub>x</sub> budget will not be exceeded.

#### *Demonstration*

The owner or operator of a unit with a maximum design heat input greater than 250 mmBtu/hr, except for any unit subject to the federal Cross-State Air Pollution Rule NO<sub>x</sub> Ozone Season Trading Program established under 40 CFR Part 97, Subpart BBBBBB, or an equivalent trading program is subject to 45CSR40 “Control of Ozone Season Nitrogen Oxides Emissions”. This rule requires the owners or operators of subject units to limit ozone season NO<sub>x</sub> emissions pursuant to a permit issued under 45CSR13, 45CSR14, 45CSR19, or via consent order beginning May 1, 2016. 45CSR40 further requires that certified continuous emission monitoring systems be operated in accordance with 40 CFR Part 75, Subpart H. The NO<sub>x</sub> mass emissions measurements recorded and reported in accordance with 40 CFR Part 75, Subpart H will determine compliance with the ozone season NO<sub>x</sub> emission limitation.

In Table 2, West Virginia clearly demonstrates that the ozone season NO<sub>x</sub> budget of 2,184 tons for units subject to subsection 4.1 of 45CSR40 cannot be exceeded, considering the legally enforceable NO<sub>x</sub> emission limits of the currently operating units. The legally enforceable maximum potential ozone season NO<sub>x</sub> emissions total of 941 tons, is less than 50% of the total budget and leaves 1,245 tons in the budget available for new units.

**Table 1: West Virginia Ozone Season NO<sub>x</sub> Budget Demonstration Large Non-EGU Boilers - Permanently Shut Down**

Facility Name	WV Facility ID#	ORISPL Facility ID#	CAMD Unit ID#	Boiler #	Date Permanently Shut Down
ArcelorMittal Weirton, Inc. <sup>1</sup>	029-00001	54344	89	3	2015
			90	4	2015
			91	5	2015
Westlake Chemical, Natrium <sup>2</sup>	051-00002	50491	2	3	July, 2016
			1	4	August, 2016
Union Carbide Corporation, Institute <sup>3</sup>	039-00007	88053	70	10	January, 2017
			80	11	January, 2017
			90	12	January, 2017
Union Carbide Corporation, South Charleston	039-00003	50151	B25	25	2012
WV Manufacturing LLC, Alloy <sup>4</sup>	019-00001	50012	BLR4	4	2008

<sup>1</sup> ArcelorMittal Weirton, Inc. was previously Weirton Steel Corporation.

<sup>2</sup> Westlake Chemical, Natrium was PPG Industries in 2003.

<sup>3</sup> Union Carbide Corporation, Institute was Aventis CropScience in 2003.

<sup>4</sup> WV Manufacturing LLC, Alloy was Elkem Metals Company, Alloy in 2003.

**Table 2: West Virginia Ozone Season NO<sub>x</sub> Budget Demonstration for Current Large Non-EGU Boilers**

Facility Name	WV Facility ID#	ORISPL Facility ID#	CAMD Unit ID#	Boiler #	Enforceable Mechanism	Specific condition(s) incorporated by reference (IBR)	Max Design Heat Input (mmBtu/hr)	Ozone Season Operating Time (hrs)	NO <sub>x</sub> Limit (lb/mmBtu) or (lb/hr)	Ozone Season NO <sub>x</sub> Emissions (tons)
Appalacian Power Company, John E Amos	079-00006	3935	AUX1	AUX1	R13-2663E	4.1.17	642	876	0.20 lb/mmBtu	56
			AUX3	AUX3	R13-2663E	4.1.18	600	876	0.20 lb/mmBtu	53
Appalacian Power Company, Mountaineer (1301)	053-00009	6264	AUX1	AUX1	R13-0075I	4.1.3	600	876	99.67 lb/hr	44
			AUX2	AUX2	R13-0075I	4.1.4	600	876	99.67 lb/hr	44
Westlake Chemical, Natrium <sup>1,2</sup>	051-00002	50491	3	5	R14-0027E	4.1.3.b	999	3,672	0.16 lb/mmBtu	293
Chemours Company, Belle <sup>3</sup>	039-00001	10788	612	10	CO-R40-C-2016-30	1	275	3,672	0.20 lb/mmBtu	101
Kentucky Power Company, Mitchell (WV) <sup>4</sup>	051-00005	3948	AUX1	AUX1	R13-2608E	5.1.1	663	876	99.45 lb/hr	44
Union Carbide Corporation, Institute <sup>5</sup>	039-00007	880053	BO16	16	R13-3111D	4.1.2.b	350	3,672	0.036 lb/mmBtu	23
			BO17	17	R13-3111D	4.1.2.b	350	3,672	0.036 lb/mmBtu	23
Union Carbide Corporation, South Charleston	039-00003	50151	B26	26	R13-2033D	4.1.1	352	3,672	70.4 lb/hr	130
			B27	27	R13-2141C	A.6	353	3,672	70.6 lb/hr	130
<b>Total Ozone Season NO<sub>x</sub> (tons)</b>										<b>941</b>
<b>WV Non-EGU Ozone Season NO<sub>x</sub> Budget</b>										<b>2,184</b>
<b>Reserve</b>										<b>1,245</b>

<sup>1</sup> Westlake Chemical, Natrium was PPG Industries in 2003.

<sup>2</sup> The NO<sub>x</sub> limit for the Natrium plant is after the conversion to natural gas from coal.

<sup>3</sup> The Chemours Company was DuPont in 2003.

<sup>4</sup> Kentucky Power Company, Mitchell (WV) was Ohio Power Company, Mitchell in 2003.

<sup>5</sup> Union Carbide Corporation, Institute was Aventis CropScience in 2003.