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Via E-mail and Federal Express
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RE: Public Comments on the Draft PSD Permit, Draft NSR Permit, and Draft Permit to Construct for the Frederick/Carroll County Renewable Waste-To-Energy Facility

Dear Ms. Heafey:

Thank you for the opportunity to comment on the following permits for the proposed Frederick/Carroll County Renewable Waste-To-Energy Facility ("Incinerator" or "Frederick Incinerator"): Draft Prevention of Significant Deterioration Approval Conditions PSD Approval PSD-2012-01 ("Draft PSD Permit"); Draft New Source Review Approval Conditions NSR Approval NSR-2012-01 ("Draft NANSR Permit") and Draft Permit-To-Construct Conditions Permit No. 021-0692-2-0069 and 021-0692-9-0330 ("Draft Permit to Construct") (collectively "Draft Permits" or "Permits"). These comments are submitted by the Environmental Integrity Project, the Chesapeake Climate Action Network (CCAN) and the Energy Justice Network. Our specific comments are as follows:

I. The Permits Must Satisfy Nonattainment New Source Review Requirements, Including Offsets and Lowest Achievable Emissions Rate, for $PM_{2.5}$ or Limit $PM_{2.5}$ Emissions to 24 ppmvd @ 7% O_2 at All Times

The Maryland Department of the Environment ("MDE") has failed to limit emissions of fine particulate matter ("$PM_{2.5}$") from the Incinerator or to subject those emissions to nonattainment new source review ("NANSR") requirements. This is incorrect because, without

any $PM_{2.5}$ emissions limit in its permit, the Incinerator's $PM_{2.5}$ emissions cannot be considered to be under the 100 tons per year ("tpy") threshold for triggering NANSR.

NANSR applies in areas designated as not attaining National Ambient Air Quality Standards ("NAAQS"). The District of Columbia-Maryland-and Virginia ("DC-MD-VA") area, which includes Frederick County, Maryland, is currently a nonattainment area for the 1997 annual NAAQS and attainment for the 24-hour NAAQS, which was proposed in 1997 and finalized in 2006. 40 C.F.R. § 81.321. NANSR review is intended to be the strictest review to which a new source can be subject and is supposed to ensure that a nonattainment area comes into attainment with the NAAQS. Under NANSR, proposed sources must offset emissions of nonattainment pollutants and must subject those pollutants to emission limits constituting the Lowest Achievable Emissions Rate ("LAER"). 42 U.S.C. §§ 7502(c), 7503; 40 C.F.R. § 51.165.

When considering whether review is triggered, an agency must consider whether a proposed source has the "potential to emit" that pollutant in an amount over the regulatory threshold established for that type of review. For NANSR, the threshold is 100 tpy. 40 C.F.R. § 51.165(a)(1)(iv)(A)(1); Draft NANSR Permit at 4. "Potential to emit" is defined as follows:

> (a) "Potential to emit" means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design.
> (b) Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is federally enforceable.

COMAR 26.11.17.01(B)(21) (emphasis added); *see* 40 C.F.R. § 52.21(b)(4); 40 C.F.R. § 51.165(a)(iii).

MDE erred when it concluded that the Incinerator's potential to emit $PM_{2.5}$ was 66.7 tons per year (NANSR Permit Fact Sheet at 5), and therefore not subject to NANSR, because this calculation is based on an emissions rate for $PM_{2.5}$ that is not federally enforceable. This calculation is based on a short-term $PM_{2.5}$ emissions rate of 24 ppmvd at 7% O_2 at 8,760 hours per year (24 hours a day, 365 days a year). Table 2-3. Combustor—Criteria Pollutant Emissions Rates (per unit) ("Table 2-3"), Frederick/Carroll County Renewable Waste-To-Energy Facility Prevention of Significant Deterioration/Air Construction Permit Application, revised October 2012 ("October 2012 Application")(Attachment A), 2-48, *available at* http://www.nmwda.org/projects_and_services/documents/PSDFINALOct2012.pdf. However, that emissions rate is not federally enforceable because it is not set forth in any of the Draft Permits. In fact, there is no $PM_{2.5}$ limit at all in the Draft Permits. MDE must calculate the Incinerator's potential to emit $PM_{2.5}$ based on its full capacity without considering any condition that cannot be federally enforced to limit $PM_{2.5}$ emissions to 24 ppmvd @ 7% O_2 at all times. Unless MDE adopts a permit limit that can be federally enforced in this way, MDE cannot use 24

ppmvd @ 7% O_2 as a basis for calculating the Incinerator's potential to emit $PM_{2.5}$ and as a basis for avoiding NANSR for $PM_{2.5}$ emissions.

As discussed below in Section X, MDE must also revise the PSD Permit to adopt an annual mass emissions limit for $PM_{2.5}$ and limit flow rate from the municipal waste combustors in order to rely on a total 66.7 tpy as the Incinerator's potential to emit $PM_{2.5}$. In the case of $PM_{2.5}$, all emissions limits must be applicable to filterable and condensable portions, and MDE must revise the Fact Sheet to state that all calculation of potential to emit $PM_{2.5}$ account for filterable and condensable $PM_{2.5}$.

MDE's failure to limit $PM_{2.5}$ emissions from the Incinerator is particularly troubling in light of two additional facts. First, MDE also did not review $PM_{2.5}$ under the Prevention of Significant Deterioration ("PSD") program for attainment areas. PSD Permit Fact Sheet at 6. Thus, although the Incinerator's potential to emit $PM_{2.5}$ is above the PSD threshold of 40 tpy[1] (40 C.F.R. § 52.21(b)(23)(i)), the Northeast Maryland Waste Disposal Authority ("NEA") has avoided PSD requirements, including the required ambient impacts air quality analysis for $PM_{2.5}$, because $PM_{2.5}$ is a nonattainment pollutant. However, $PM_{2.5}$ has not been subject to NANSR review; most notably no $PM_{2.5}$ offsets have been required. Second, MDE concluded that the incinerator has the potential to emit $PM_{2.5}$ precursors in large amounts: 99.4 tpy of sulphur dioxide ("SO_2"), 229.8 tpy of nitrogen oxide ("NOx"), and 11.8 tpy of volatile organic compounds ("VOCs").[2] While NO_x offsets are being required because the area is nonattainment for ozone, $PM_{2.5}$ and SO_2 emissions together total 166.1 tpy, neither pollutant is being offset, and no ambient impacts analysis has been performed for $PM_{2.5}$.[3]

II. The Permits Must Satisfy NANSR Requirements, Including Offsets and LAER, for VOCs or Limit VOCs Emissions to 6.6 ppmvd @ 7% O_2 at All Times

[1] It is unclear why MDE has calculated the Incinerator's potential to emit $PM_{2.5}$ as 66.7 tpy for NANSR purposes and 26.8 tpy under its PSD review. NANSR Permit Fact Sheet at 5; PSD Permit Fact Sheet at 5. Potential to emit is defined in the same way in both programs and should not have been calculated differently for PSD and NANSR purposes. *See* 40 C.F.R. § 52.21(b)(4); 40 C.F.R. § 51.165(a)(iii).

[2] Volatile organic compounds (VOCs) and ammonia must be regulated as $PM_{2.5}$ precursors pursuant to the D.C. Circuit Court's opinion in *NRDC v. EPA*, 706 F.3d 428, 437 (D.C. Cir. 2013). In that case, the Court held that EPA impermissibly promulgated the nonattainment portions of it $PM_{2.5}$ implementation rule pursuant to the general implementation provisions of Subpart I of Part D of Title I of the Clean Air Act, rather than the stricter requirements of Subpart 4. *Id.* In doing so, the Court observed that under Subpart 4, precursor pollutants are presumptively regulated, and EPA may not create a rebuttable presumption that certain precursors, such as ammonia, are not regulated. *Id.* at 435; *see also* 42 U.S.C. § 7513a(e).

[3] MDE recently proposed to amend its NANSR regulation at COMAR 26.11.17.02 to include the following statement: "Major stationary sources and major modifications, whether located in attainment or nonattainment areas, may also be subject to the Prevention of Significant Deterioration requirements in COMAR 26.11.06.14." 40:7 Md. R. 595-684 (April 5, 2013), *available at* http://www.dsd.state.md.us/MDRegister/4007/Assembled.htm . If this regulation is finalized, MDE should use this authority to require PSD review of the Frederick Incinerator.

Similarly, the Permits must either satisfy NANSR requirements, including offsets and LAER, for VOCs or must limit VOCs emissions to 6.6 ppmvd @ 7% O_2. VOCs must be regulated as a criteria pollutant because it is a precursor for NO_x and $PM_{2.5}$. 40 C.F.R. § 51.165(a)(1)(xxxvii)(c)(1); *see NRDC,* 706 F.3d at 435 (holding that EPA cannot create a rebuttable presumption that VOCs are not regulated as a $PM_{2.5}$ precursor).

MDE concluded that the Incinerator's potential to emit VOCs is 11.8 tpy, lower than the NANSR threshold of 25 tpy, based on a short-term emissions limit of 6.6 ppmvd @7% O_2, which is assumed in the calculations to be met at all times. NANSR Permit Fact Sheet at 5; Table 2-3, October 2012 Application (Attachment A) at 2-48. As with $PM_{2.5}$, the emissions rate for VOCs cannot be used as a basis for calculating potential to emit unless it is federally enforceable. COMAR 26.11.17.01(B)(21); 40 C.F.R. § 52.21(b)(4); 40 C.F.R. § 51.165(a)(iii). MDE may not rely on this emissions rate as a basis for avoiding NANSR review of VOCs unless it adopts a permit requirement limiting the municipal waste combustors to an emissions rate of 6.6 ppmvd @7% O_2 at all times.

III. MDE Must Consider NO_x as a $PM_{2.5}$ Precursor in Its NANSR Applicability Analysis

MDE's analysis of NANSR applicability fails to consider NO_x as a $PM_{2.5}$ precursor. MDE states that "[i]f emissions of NO_x or VOCs (as ozone precursors) from the project are greater than 25 [tpy], then NA-NSR is triggered for ozone. Similarly, if direct emissions of $PM_{2.5}$ or its precursors (SO_2), are greater than 100 tpy, the project will trigger NA-NSR for $PM_{2.5}$ and/or SO_2." NANSR Permit Fact Sheet at 4. "Because the permit to construct the FCCRWTE imposes enforceable limits on the annual SO_2 emissions from the FCCRWTE below the NA-NSR threshold of 100 tpy, no NA-NSR review of $PM_{2.5}$ or its precursors (SO_2) is required." Permit to Construct Fact Sheet at 12.

This analysis does not acknowledge that NO_x, for which the Incinerator has an estimated potential to emit of 229.8 tpy, is a precursor to $PM_{2.5}$. NO_x is presumed to be a $PM_{2.5}$ precursor "unless the State demonstrates to the [EPA's] satisfaction or EPA demonstrates that emissions of [NO_x] from sources in a specific area are not a significant contributor to that area's ambient $PM_{2.5}$ concentrations." 40 C.F.R. § 51.165(a)(1)(xxxvii)(c)(3). Neither MDE nor EPA has made this demonstration, and, in fact, MDE and other agencies have recently acknowledged that NO_x is a significant contributor to ambient $PM_{2.5}$ in the DC-MD-VA area. *See* Draft Washington DC-MD-VA 1997 $PM_{2.5}$ Redesignation Request at 10 (Jan. 4, 2013), *available at* http://www.mwcog.org/environment/air/downloads/PM/Draft%20PM%20RR%2001-04-13.pdf .

MDE must revise its analysis of NANSR applicability to consider NO_x as a $PM_{2.5}$ precursor.

IV. If MDE Concludes That the Incinerator Does Not Meet Major Source Thresholds for $PM_{2.5}$, It Must Review $PM_{2.5}$ Under the Minor New Source Review Program, Which Should Include Dispersion Modeling

If MDE concludes that the Incinerator does not meet major source thresholds for $PM_{2.5}$, MDE must still review $PM_{2.5}$ under Clean Air Act New Source Review requirements for minor sources ("Minor NSR").

> Pursuant to section 110(a)(2)(C) of the Act, States must have a minor source permitting program. This applies to new and modified stationary sources that are not considered major for a criteria pollutant or a precursor for a criteria pollutant. Prior to [EPA's 2008 $PM_{2.5}$ NSR Implementation Rule], States were required to include the following pollutants in their minor NSR program: VOC, SO_2, NO_X, CO, PM_{10}, and Lead. Based on [the $PM_{2.5}$ NSR Implementation Rule], States [were required to amend] their minor source programs to include direct $PM_{2.5}$ emissions and precursor emissions in the same manner as included for purposes of $PM_{2.5}$ major NSR.

Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers ($PM_{2.5}$), 73 Fed. Reg. 28321, 28344 (May 16, 2008) ("$PM_{2.5}$ NSR Implementation Rule").

Minor NSR requirements are set forth at 40 C.F.R. § 51.160. Among other things, states must identify procedures for reviewing whether a minor source will "interfere with attainment or maintenance of a national standard in the State in which the proposed source . . . is located or in a neighboring state." 40 C.F.R. § 51.160(b)(2). Air quality data and dispersion or other modeling may be necessary in order to meet this requirement. 40 C.F.R. § 51.160(f). EPA stated in the $PM_{2.5}$ NSR Implementation Rule that states should use minor NSR programs to prevent further degradation of air quality in nonattainment areas due to the high 100 tpy NANSR threshold. EPA noted that

> [If] construction of $PM_{2.5}$ sources emitting 99 tpy with no major NSR controls and without mitigation would undermine a State's ability to achieve reasonable further progress or attain the $PM_{2.5}$ NAAQS, the State should consider imposing emissions controls or other requirements on these sources through the State's minor NSR program. Note that such programs are required under the existing statute and regulations to assure that the NAAQS are achieved. *See* section 110(a)(2)(C) of the Act and 40 CFR 51.160.

$PM_{2.5}$ NSR Implementation Rule, 73 Fed. Reg. at 28331.

MDE has not discussed in any of the permit fact sheets how Minor NSR requirements have been met for $PM_{2.5}$ emissions from the Incinerator. MDE must address this. Additionally, since MDE has determined the Incinerator has a potential to emit a total of 407.7 tpy of direct

$PM_{2.5}$ and three $PM_{2.5}$ precursors (NO_x, SO_2, and VOCs), MDE must explain how it has determined that the Incinerator will not cause interference with attainment or maintenance of $PM_{2.5}$ NAAQS. 42 U.S.C. § 7410(a)(2)(C); 40 C.F.R. § 51.160(b)(2). It appears that MDE should require dispersion modeling of $PM_{2.5}$ in order to comply with this requirement. Additionally, this analysis must address ammonia and VOCs as $PM_{2.5}$ precursors, in accordance with the D.C. Circuit Court's opinion in *NRDC*, 706 F.3d at 435.

V. The Permits Must Satisfy NANSR Requirements, Including Offsets and LAER, for SO_2 or Limit SO_2 Emissions to 14 ppmvd @ 7% O_2 at All Times

MDE erred when it concluded that SO_2 is not subject to NANSR because the Incinerator's potential to emit SO_2 does not exceed the NANSR threshold of 100 tpy. SO_2 is a precursor for $PM_{2.5}$, and is, therefore, subject to NANSR in the same way that $PM_{2.5}$ is. 40 C.F.R. § 51.165(a)(1)(xxxvii)(c)(2); $PM_{2.5}$ NSR Implementation Rule, 73 Fed. Reg. at 28327-28328. MDE concluded that the Incinerator is not subject to NANSR for $PM_{2.5}$ and SO_2 because its potential to emit SO_2 is 99.4 tpy, just below the 100 tpy threshold. This is incorrect because this calculation is based on a short-term SO_2 emissions limit that does not apply during startup, shutdown or malfunction (SSM) events.

A limitation on a source's emissions may only be considered in calculating its potential to emit if "the limitation or the effect it would have on emissions is federally enforceable." COMAR 26.11.17.01(B)(21); 40 C.F.R. § 52.21(b)(4); 40 C.F.R. § 51.165(a)(iii). EPA has stated that potential to emit must account for SSM events, noting that "[t]o determine PTE [(Potential to Emit)], a source must estimate its emissions based on the worst-case scenario taking into account startups, shutdowns and malfunctions." Letter from Steven C. Riva, Chief, Permitting Section Air Programs Branch, EPA Region II, to William O'Sullivan, Director, Division for Air Quality, New Jersey Dept. of Envt'l Protection (February 14, 2006) (Attachment B).

MDE incorrectly calculated the Incinerator's potential to emit SO_2 based on the assumption that the short-term emissions limit of 14 ppmvd @ 7% O_2 will be met at all times, despite the fact that the Draft PSD Permit conditions do not require that this limit be met during SSM. NANSR Fact Sheet at 5; PSD Fact Sheet at 6; Table 2-3, October 2012 Application (Attachment A) at 2-48. The Draft PSD Permit states that the best available control technology (BACT) -based limits set forth in Table 1 apply to the municipal waste combustors "when burning municipal solid waste (MSW) (alone or in conjunction with natural gas, tires, or acceptable sewage sludge)." Draft PSD Permit at 4. Thus, the BACT limits do not apply during startup and shutdown on natural gas or during periods when, for instance, the municipal waste combustors are burning only tires or only sewage sludge. There are no restrictions elsewhere in the PSD Permit that prevent the MWCs from burning only tires for a given period of time. These limits were assumed to apply at all times in potential to emit calculations and in ambient

impacts modeling. Therefore, the PSD Permit must clearly state that these limits apply at all times, including during startup, shutdown and malfunctions.

VI. MDE Must Revise the Permit to State That Short-Term PSD Emission Limits for PM, PM_{10}, $PM_{2.5}$, SO_2, VOCs, NO_x, CO, and Lead Apply at All Times, Including During Startup, Shutdown and Malfunctions

When short-term emissions limits have been assumed to apply at all times in potential to emit calculations and in ambient impacts modeling, a permit must make those limits applicable at all times, including during SSM.

As discussed above, NEA and MDE assumed that short-term BACT limits applied at all times when calculating the Incinerator's potential to emit, which, for SO_2, resulted in the decision that NANSR requirements, including offsets and setting the Lowest Achievable Emissions Rate, do not apply. Additionally, NEA and MDE assumed that these limits would be met at all times when conducting ambient impacts modeling. PSD Permit Fact Sheet at 23-34.

An ambient impacts analysis must be based on "allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reduction (including secondary emissions)." 40 C.F.R. § 52.21(k)(1). EPA has a long held policy that emission limits that are set based on ambient air quality standards apply at all times—including during SSM events. EPA has stated that sources may not be exempted from compliance with these limits during SSM events[4] "because excess emission might aggravate air quality so as to prevent attainment or interfere with maintenance of the ambient air quality standards." Memorandum from Steven A. Herman, Asst. Adm'r for Enforcement & Compliance, U.S. Envtl. Prot. Agency, on State Implementation Plans: Policy Regarding Excess Emissions During Malfunctions, Startup, and Shutdown to Regional Administrators, Regions I – X (Sept. 20, 1999) (Attachment C).

This rationale applies to PSD emission limits "not only because PSD is ambient-based but also because generally, the PSD program is part of the SIP. Even in States where the PSD program is not SIP approved, the emissions limits are established to protect increments and the national ambient air quality standards [NAAQS]." Memorandum from John B. Rasnic, Dir., Stationary Source Compliance Div., U.S. Envtl. Prot. Agency, on Automatic of Blanket Exemptions for Excess Emissions During Startup, and Shutdowns Under PSD to Linda M. Murphy, Dir., Air, Pesticides & Toxics Mgmt. Div., U.S. Envtl. Prot. Agency (Jan. 28, 1993) (Attachment D).

[4] At most, malfunction causing excess emission above limits may be an affirmative defense in an enforcement action as to penalty only.

The Draft PSD Permit states that the short-term limits set forth in Table 1 apply to the Incinerator "when burning municipal solid waste (MSW) (alone or in conjunction with natural gas, tires, or acceptable sewage sludge)." Draft PSD Permit at 4. However, it is not clear that these limits apply during SSM or during events where MSW may not be burned and the Incinerator may be burning only natural gas or only tires. Further, there are no restrictions elsewhere in the PSD Permit that prevent the Incinerator from burning only tires for a given period of time. The PSD Permit should be revised to state that the short-term BACT limits apply at all times, including during startup, shutdown and malfunctions.

VII. MDE Must Clarify that Continuous Emissions Monitoring System Data Recorded During Startup, Shutdown and Malfunctions Will Be Calculated in Compliance Determinations for BACT Limits

MDE must clarify that Continuous Emissions Monitoring System ("CEMS") data recorded during SSM events will be calculated in compliance with determinations for BACT limits. CEMS is the compliance determination method for BACT limits for SO_2, NO_x, carbon monoxide ("CO") and carbon dioxide ("CO_2"). Draft PSD Permit at 7, 8, 10, 11. As discussed below, CEMS or Continuous Opacity Monitoring System ("COMS") should also be the compliance demonstration method for PM, PM_{10} and $PM_{2.5}$.

The Draft PSD Permit states that "[u]se of CEMS for compliance demonstration shall be as specified in the Department's Air Management Administration Technical Memorandum 90-01 "Continuous Emission Monitoring (CEM) Policies and Procedures." Draft PSD Permit at 8. The PSD Permit Fact Sheet does not discuss the applicable provisions of this technical document or how they influence compliance demonstrations for SO_2, NO_x, CO and CO_2. The CEMS Technical Memorandum 90-01, which is attached hereto as Attachment E, was not made available online or as part of the docket for this permit. The memorandum does not identify which policies within in it are considered to govern compliance demonstration. It primarily sets forth enforcement and quality assurance/quality control requirements, some of which may conflict with the detailed CEMS requirements set forth under 40 C.F.R. § 60.58b, which are also made applicable by the Draft PSD Permit. MDE should revise the Draft PSD Permit to identify the specific portions of the CEMS Technical Memorandum 90-01 that apply with respect to compliance demonstrations.

Additionally, Table 1 states that compliance with BACT limits is to be determined using CEMS performance tests and procedures specified in certain subparagraphs under 40 C.F.R. § 60.58b. Draft PSD Permit at 10. Paragraph (a) in that section states:

> Except as provided by § 60.56b, the standards under this subpart apply at all times except during periods of startup, shutdown, and malfunction. Duration of startup, shutdown, or malfunction periods are limited to 3 hours per occurrence, except as provided in paragraph (a)(1)(iii) of this section. During periods of startup,

shutdown, or malfunction, monitoring data shall be dismissed or excluded from compliance calculations, but shall be recorded and reported in accordance with the provisions of 40 CFR 60.59b(d)(7).

40 C.F.R. § 60.58(a)(1). This paragraph is also made a condition of the Draft Permit to Construct. Draft Permit to Construct at 31-32.

MDE must clarify that it does not consider this provision, which is a New Source Performance Standard, applicable to compliance demonstrations required for BACT limits, which must be met at all times. In other words, MDE must clarify that CEMS data recorded during SSM events will be included in compliance demonstration calculations for all BACT emission limits.

VIII. The Permits Do Not Require Continuous Compliance for Emission Limits for Multiple Pollutants

The conditions do not require continuous compliance with PSD permit limits for particular matter ("PM") (PM_{10}"), lead, mercury, cadmium, dioxins/furans (MWC organics), hydrogen chloride ("HCl"), hydrogen fluoride ("HF"), and sulfuric acid ("H_2SO_4"). EPA has stated that "continuous, direct emission measurement is preferable" to periodic emissions testing to demonstrate compliance with NSR and PSD permit limits. *See* U.S. Envtl. Prot. Agency, New Source Review Workshop Manual, I.3 (1990), *available at* http://www.epa.gov/ttn/nsr/gen/wkshpman.pdf. "The monitoring provisions of a permit must ensure the performance standards are being met. If they do not do so, then they have the effect of weakening the permit limits, defeating the purpose of the BACT/MACT analyses that are central to the NSR/PSD preconstruction permitting process." *See* Pre-filed testimony of Alfredo Armanderiz, PhD, *In the matter of IPA Coleto Creek, LLC Application for State Air Quality Permit 83778*, TCEQ Docket No. 2009-0032-AIR (September 4, 2009).

Furthermore, Title V of the Clean Air Act requires that "each permit issued under [Title V] shall set forth … monitoring … requirements sufficient to assure compliance with the permit terms and conditions." 42 U.S.C. §7661c(c).. On August 19, 2008, the D.C. Circuit Court of Appeals struck down an EPA rule that would have prohibited MDE and other state and local authorities from adding monitoring provisions to Title V permits if needed to "assure compliance." *See Sierra Club v. EPA*, 536 F.3d 673 (D.C. Cir. 2008). The opinion emphasized the statutory duty to include adequate monitoring in Title V permits, noting that "[b]y its terms, this mandate means that a monitoring requirement insufficient 'to assure compliance' with emission limits has no place in a permit unless and until it is supplemented by more rigorous standards." *Id.* at 677.

The D.C. Circuit opinion makes clear that Title V Permits must include monitoring requirements that assure compliance with emission limits. The Court specifically noted that

annual testing is unlikely to assure compliance with a short term emission limit, and found that state permitting authorities have a statutory duty to include monitoring requirements that ensure compliance with emission limits in Title V operating permits. *See id.* at 675. In other words, the frequency of monitoring must bear some relationship to the averaging time used to determine compliance.

Although NEA has not yet applied for a Title V Permit for the Incinerator, MDE should anticipate that failure to include sufficient monitoring will result in an EPA objection.

A. PM, PM_{10} and $PM_{2.5}$

The compliance method identified for PM and PM_{10} is an annual stack test. Draft PSD Permit at 10. This is insufficient to assure continuous compliance with a limit that must be met at all times. While COMS is identified under Part E (Monitoring Requirements) and Part F (Compliance Demonstration) of the Draft PSD Permit as the method for demonstrating compliance with an opacity limit, no opacity limit is established in the Draft PSD Permit. COMS is not identified as the compliance demonstration method for PM or PM_{10}. The Draft PSD Permit contemplates the use of PM CEMS in lieu of COMS in footnote 4 on page 12, but this footnote is not referenced in any emissions limit in Table 1.

MDE should revise the Draft PSD Permit to require that either COMS or PM CEMS be used to demonstrate compliance with existing BACT limits for PM and PM_{10} and, as discussed above, should adopt a $PM_{2.5}$ emissions limit for which compliance should also be demonstrated using COMS or PM CEMS. This is what is required in the Certificate of Public Convenience and Necessity ("CPCN"), which is intended to be the equivalent of an NSR permit, for the Energy Answers incinerator in Baltimore City. Table A-Emissions Standards for Fairfield Project Generating Units, Final Recommended Licensing Conditions, PSC Case No. 9199, Energy Answers Baltimore, LLC – Fairfield Renewable Energy Project ("Energy Answers CPCN") (Attachment F) 30-38.

B. Dioxins/furans and mercury

The Draft PSD Permit does establish parametric monitoring requirements, using carbon mass feed rate, for mercury and dioxins/furans. Draft PSD Permit at 6. However, it does not identify those requirements as the methods for demonstrating compliance with dioxin/furan and mercury PSD limits. The compliance methods for dioxins/furans and mercury identified in Table 1 are initial and annual stack tests. Draft PSD Permit at 11. Additionally, Condition (3) under Part D (Testing Requirements) of the Draft PSD Permit states that "initial and annual stack performance tests shall be conducted to demonstrate compliance with annual BACT emission limitations for PM, PM10, SAM, HCL, HG, CD, Pb and dioxin/furans specified in Table 1." Draft PSD Permit at 7.

MDE should revise the permit to clearly identify parametric monitoring based on active carbon feed rate/carbon injection indicator as the compliance demonstration method for PSD limits for mercury and dioxins/furans. Additionally, MDE should require that mercury CEMS be used to demonstrate compliance with the mercury limit. Mercury CEMS is being required as the compliance demonstration method at the recently permitted Palm Beach Renewable Energy Facility No. 2 in West Palm Beach, Florida. Air Permit No. 0990234-017-AC (PSD-FL-413), Palm Beach Renewable Energy Park, Palm Beach Renewable Energy Facility No. 2 (Dec. 23, 2010) (Attachment G), 11-14. Mercury CEMS is also being required for informational purposes at the Energy Answers facility in Baltimore, and MDE has the option to require, after two years, that the mercury CEMS be used as the compliance demonstration method for mercury emissions at that plant. *See* Energy Answers CPCN (Attachment F), at 7. At the very least, the same should be required for the Frederick Incinerator.

C. Lead, cadmium, HCl, HF, and H_2SO_4

The Draft PSD Permit requires only initial and stack testing as the compliance demonstration method for short-term emissions of lead, cadmium, HCl, HF and H_2SO_4. Continuous demonstration methods should be specified that will assure compliance with each of these emission limits. For example, parametric monitoring is required for each of these pollutants in the Energy Answer CPCN. *See* Table A, Energy Answers CPCN (Attachment F).

IX. The Draft PSD Permit References an Opacity Limit Which Is Not Set Forth in the Permit

The Draft PSD Permit states that the Permittee shall use CEMS to monitor opacity from each municipal waste combustor and that CEMS shall be the compliance demonstration method for limits including the opacity limit specified in Table 1. Draft PSD Permit at 8. Table 1 does not include a limit on opacity. Further, the new source performance standards (NSPS) require that large municipal waste combustors be subject to an opacity limit, although this need not be set forth in the PSD permit. 40 C.F.R. § 60.52b(a)(2). MDE should revise the Draft PSD Permit or the Draft Permit To Construct to include an opacity limit for which COMs should be the compliance demonstration method.

X. MDE Must Revise the Permit to Include Mass Emission Limits, Must Limit Flow Rate at All Times and Must Require that Flow Be Measured Continuously and Reported to MDE

The permits lack annual mass emissions limits for all pollutants other than NO_x. MDE must revise the PSD Permit to include annual mass emissions limits in tons per year. MDE must also define and limit flow rate and require that flow rate be measured continuously and reported to MDE.

MDE and NEA's calculations of potential to emit all pollutants rest upon an assumption about the flow rate of the municipal waste combustors which is not federally enforceable under the draft permit conditions. The only mass limit in the permits is for NO_x and there is no limit on flow rate. Because concentration must be multiplied by flow in order to calculate mass, MDE cannot rely on the current calculations of potential to emit unless flow is limited in the permit conditions. Without a limit on flow rate, potential to emit is not based on federally enforceable permit limits. *See* COMAR 26.11.17.01(B)(21); 40 C.F.R. § 52.21(b)(4); 40 C.F.R. § 51.165(a)(iii).

MDE has calculated potential emissions based on the assumption that short-term BACT limits will be met at all times and the assumption that a consistent flow rate will be met at all times. NANSR Fact Sheet at 5; PSD Fact Sheet at 6; Table 2-3, October 2012 Application (Attachment A) at 2-48. This flow rate is the following, expressed under different conditions:

> Flow Rate: 103,868 ft^3/min (at 70 degrees F, 14,696 psia, wet, actual percent oxygen)
> "Actual Flow Rate": 140, 539 ft^3/min
> Standard Exhaust Flow Rate: 81,557 ft^3/min or 2,309 m^3/min (At 70 degrees F, 14,696 psia, dry, 7.0 percent oxygen)

Table B-5, 100 Percent of Maximum Continuous Rate (MCR), Short-Term and Annual Average Potential Emission Rates, October 2012 Application (Attachment H).

MDE must adopt permit conditions limiting the municipal waste combustors to this flow rate at all times. MDE must also require that flow rate be measured at all times and reported to MDE. The draft permits do not currently require that flow rate be measured or reported to MDE. *See* Draft PSD Permit at 8.

XI. MDE Erroneously Failed to Require an Oxidation Catalyst as Best Available Control Technology for CO From the Municipal Waste Combustors

MDE has failed to require use of an oxidation catalyst, which is the BACT for control of CO. CO is subject to PSD requirements under the Clean Air Act, which include the requirement that the emissions limit for CO be based on BACT for that pollutant. 40 C.F.R. § 52.21(j)(2). BACT is defined as

> an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines

> is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60 and 61. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.

40 C.F.R. § 52.21(b)(24).

MDE set a BACT emissions limit of 100 ppmvd @ 7% O_2 for CO based on the erroneous determination that an oxidation catalyst is technically infeasible at a large municipal waste combustor. PSD Permit Fact Sheet at 10. However, use of an oxidation catalyst for CO control is a required permit condition of the Energy Answers CPCN. Conditions A-2, A-20, Energy Answers CPCN (Attachment F) at 2, 9. After Energy Answers proposed adding an oxidation catalyst for CO control, it cut its CO emissions limit in half from 150 ppmvd @ 7% O_2 to 75 ppmvd @ 7% O_2. This new emissions limit is significantly lower than the 100 pmvd @ 7% O_2 being proposed at the Frederick Incinerator. MDE should require an oxidation catalyst for control of CO at the Frederick Incinerator.

XII. The Permittee Should Be Required to Submit All CEMS Emissions Data and All Data Regarding Monthly Throughput to MDE

The terms of the Draft PSD Permit currently require the Permittee to maintain on site records showing monthly throughput of tires measured in tons per month, monthly throughput of sewage sludge measured in tons per month, and all CEMS emission monitoring data. PSD Permit at 8. As an initial matter, the Permittee should also be required to maintain records regarding the other major source of waste it will burn: municipal solid waste. Additionally, the Permittee should be required to submit all of these records to MDE in its quarterly summary reports. It is especially important that MDE receive the CEMS emissions data in order to oversee compliance with emission limits, as no annual mass emission limits are included in the permits for any pollutant other than NO_x.

XII. MDE Must Explain Its Method of Calculating the Greenhouse Gases (GHGs) Limit and Must Revise the Draft PSD Permit to Clarify the Compliance Demonstration Method For That Limit and The Limit's Applicability to Biogenic Emissions

The Draft PSD Permit establishes a BACT greenhouse gases (GHGs) limit of 241 tons of carbon dioxide equivalent ("CO2e") per million pounds of steam produced (12 month rolling average). Draft PSD Permit at 5, 11. This is significantly higher than the GHGs emissions limit for the Energy Answers incinerator in Baltimore, which has a GHGs limit of 162 tons of CO2e per million pounds of steam produced, or approximately 1/3 fewer permitted GHGs per steam produced. Table A, Energy Answers CPCN (Attachment F) at 38. MDE must fully explain the method used to calculate the proposed GHGs limit for the Frederick Incinerator, including the rationale for the high CO_2 emissions factor and the method of calculating total steam load. MDE must also revise the permit to clarify the compliance demonstration method and to make the emissions limit clearly applicable to biogenic and non-biogenic emissions.

A. MDE must explain how the GHGs limit was calculated

MDE must explain how the extremely high GHGs limit was calculated. The GHGs limit proposed in the Draft PSD Permit is the same as that proposed in the October 2012 Application. October 2012 Application at 4-66 to 4-67 (Attachment I). Calculations are provided in the October 2012 Application but with two important omissions. First, there is no explanation of how the CO_2 emissions factor, which is 40% higher than that used by EPA, was calculated. Second, there is no explanation of how steam flow rate was calculated. October 2012 Application at 4-66 to 4-67(Attachment I); Table B-10 (Greenhouse Gas Emissions), Appendix B, October 2012 Application (Attachment J).

MDE must explain the basis for the high CO_2 emissions factor. The GHG emissions rate was calculated using emissions factors for the following gases: CO_2, CH_4 and N_2O. Table B-10, October 2012 Application (Attachment J). In the case of CH_4 and N_2O, the NEA applied emissions factors used by EPA for the production of these gases from combustion of municipal solid waste ("MSW"). *See* 40 CFR Part 98, Subpart C, Table C-2[5]. However, for CO_2, the NEA used an emissions factor, 278.2 lbs/MMBtu, that is 40% higher than EPA's emissions factor for MSW: 200 lbs/MMBtu. NEA's calculation states that this is based on "maximum" emissions from the "worst case fuel blend combustion using MWC design/operation CO_2 emission factor." October 2012 Application at 4-66 to 4-67 (Attachment I). However, Table B-10 in the October 2012 Application shows that this mix is considered by NEA to be 90% MSW and only 10% sewage sludge. Attachment J. It is unclear why such a small portion of the waste stream would result in such a large increase in CO_2 emissions. In fact, in order for 10% of the fuel to raise CO_2 emissions by 40%, the CO_2 emissions factor for sewage sludge would have to be 391% higher

[5] *See also* EPA, Emissions Factors for Greenhouse Gas Inventories, *available at* http://www.epa.gov/climateleadership/documents/emission-factors.pdf

than MSW. It is also unclear why it would be appropriate to use EPA's emissions factors for MSW for CH_4 and N_2O but not for CO_2. MDE must explain how the CO_2 emissions factor was calculated.

Additionally, the application, the permits, and the fact sheets do not provide information on how the steam flow rate was calculated. The application states that a steam flow rate of 3,539 million pounds/year was used and refers to this rate as a calculated rate. October 2012 Application at 4-66 to 4-67(Attachment I); Table B-10, October 2012 Application (Attachment J). However, the application provides no information with respect to *how* this rate was calculated. Table B-10 states that the steam flow rate is based on operations at 100% load, but, in the GHGs BACT analysis section, the application states that this number includes "low load and variable fuel operation." October 2012 Application at 4-66 to 4-67(Attachment I); Table B-10, October 2012 Application (Attachment J). These statements appear to be inconsistent. MDE must provide the methodology and inputs used to calculate this steam flow rate.

It also appears from the application that NEA calculated its total GHGs based on worst-case fuel blend operating at all time (8,760 hours per year) but used variable load and variable fuel content when calculating its steam flow. October 2012 Application at 4-66 to 4-67(Attachment I); Table B-10, October 2012 Application (Attachment J). MDE must explain why it is appropriate to use two different sets of assumptions when calculating these different rates.

B. MDE must revise the Draft PSD Permit to clarify the compliance demonstration method for the GHGs limit

The statements in the PSD Permit Fact Sheet regarding compliance demonstration for the GHGs limit are not consistent with the language of the Draft PSD Permit. The PSD Permit Fact Sheet states that

> FCCRWTE is proposing to demonstrate compliance with the GHG BACT limit by using CO2 CEMS during period of normal operation when burning MSW and during periods of startup and shutdown when burning natural gas in accordance with EPA's Mandatory Greenhouse Gas Reporting Rule (MGGRR). Other GHG emissions such as methane and nitrous oxides will also be calculated in accordance with the MGGRR and multiplied by their potential global warming potential to determine total CO2e emissions. MDE-ARMA concurs with the GHG BACT proposed by FCCRWTE.

PSD Permit Fact Sheet at 13. This, however, is not the method of compliance demonstration that is set forth in the Draft PSD Permit, which merely identifies CO_2 CEMS as the compliance demonstration method for the GHGs limit. Draft

PSD Permit at 8, 11. If MDE has determined that the appropriate methods for demonstrating compliance with the GHGs limit are those set forth in the PSD Permit Fact Sheet, these methods must be made an enforceable requirement in the PSD Permit.

C. MDE must revise the PSD Permit to state that the GHGs limits applies to biogenic and non-biogenic emissions

The PSD Permit Fact Sheet state that the GHGs limit is inclusive of biogenic and non-biogenic emissions. PSD Permit Fact Sheet at 13-16. However, this is not stated in the permit. The Draft PSD Permit must be revised to identify that the limit is inclusive of biogenic and non-biogenic emissions.

XIII. MDE Should Require the NEA to Submit Preconstruction Monitoring Data for NO_x, CO, SO_2 and PM_{10}

MDE incorrectly exempted the NEA from the requirement to obtain preconstruction monitoring data and make that data available to the public.

The Clean Air Act requires that, as part of PSD review, an applicant must gather continuous air quality monitoring data prior to the application for purposes of determining whether PSD increments or NAAQS will be violated. 42 U.S.C. § 7475(e)(2). This data is to be gathered "over a period of one year preceding the date of the application for a permit . . . unless the State . . . determines that a complete and adequate analysis for such purposes may be accomplished in a shorter period. *Id.* The results of this analysis must be available to the public. *Id.*

In accordance with federal regulations, MDE allowed NEA to avoid this requirement by showing that modeled impacts from the Incinerator are not above prescribed significant monitoring concentrations (SMCs). PSD Fact Sheet at 24. SMCs are intended to be *de minimis* concentrations which act as a screening tool to show that no further analysis is warranted. However, in January of 2013, the D.C. Circuit Court of Appeals held that the EPA lacks the authority to rely on the $PM_{2.5}$ SMC to exempt applicants from the "extraordinarily rigid" statutory mandate of the Clean Air Act that an applicant must gather continuous air quality data preceding the application and make its analysis of that data available to the public. *Sierra Club v. EPA*, 705 F.3d 458, 467-469 (D.C. Cir. Jan. 22, 2013).

While this holding was issued in the context of a challenge to the $PM_{2.5}$ SMC, the "extraordinarily rigid" mandate is applicable not only to $PM_{2.5}$, but also to "each pollutant subject to regulation under this chapter which will be emitted from such facility." 42 U.S.C. § 7475(e)(1); *see* 42 U.S.C. § 7475(e)(2). The Court held that "EPA has no *de minimis* authority to exempt the [preconstruction monitoring] requirement." *Sierra Club*, 705 F.3d at 468. Therefore, a permitting agency should not rely on an SMC for any pollutant to excuse an

applicant from the preconstruction monitoring requirement that would be otherwise applicable to that pollutant under 42 § U.S.C. 7475(e)(2). *See also* 40 C.F.R. 52.21(m).

In the present case, the NEA was exempted from the preconstruction monitoring requirement for NO_x, CO, SO_2 and PM_{10}. PSD Fact Sheet at 24. MDE should require the NEA to obtain and submit monitoring data for these pollutants, in according with the Court's decision in *Sierra Club*.

XIV. MDE Must Ensure That NEA Has Analyzed the Impact of All Allowable Emissions on PSD Increments and the NAAQS

MDE and the NEA must provide additional explanations with respect to the ambient air quality impacts analyses and must revise the permit to ensure that the Incinerator will operate under modeled conditions.

The NEA is required to demonstrate that emissions from the Incinerator will not cause or contribute to a violation of a PSD increment or the NAAQS. 40 C.F.R. 52.21(k). This analysis must be based on "allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reduction (including secondary emissions)." 40 C.F.R. § 52.21(k)(1). "Allowable emissions means the emissions rate of a stationary source calculated using the maximum rated capacity of the source (unless the source is subject to federally enforceable limits which restrict the operating rate, or hours of operation, or both)." 40 C.F.R. § 52.21(b)(16). "The rated capacity shall be the maximum guaranteed by the equipment manufacturer or the maximum normally achieved during use, whichever is greater." 40 C.F.R. § 52.01(h). According to NEA's Application, the maximum rated heat input capacity for the municipal waste combustors is 687.5 MMBtu/hour and 6,022,500 MMBtu/year. Table B-10, October 2012 Application (Attachment J).

A. MDE Must Define the Incinerator's "Maximum Continuous Rating" and Must Revise the Permit to Limit the Incinerator to Operation Under Modeled Conditions

NEA conducted its ambient impacts modeling under different operating scenarios: 110%, 100%, 78%, and 60% of maximum continuous rating (MCR). As an initial matter, MCR is not defined in the permit fact sheets, draft permits, or the application. The NEA must define what the MCR is and whether it is the same as the maximum rated heat input capacity for the Incinerator.

Additionally, NEA failed to analyze emissions at 110% MCR for 24 hours a day, 365 days a year. According to the PSD Fact Sheet, at the 110% scenario, "only short-term impacts (i.e. 1-,3-,8-, and 24-hour averaging periods) were assessed since the combustors will not operate at this load for a full year." PSD Fact Sheet at 27. However, there are no conditions set forth in

any of the permits which prevent the Incinerator from operating at 110% of its MCR for a full year. In other words, there are no permit conditions which restrict the Incinerator to operating under the modeled conditions of 110% MCR for a maximum of 24 hours. As discussed above, there are no mass emission limits for any pollutant other than NO_x and no restriction on flow rate, operating capacity, or operating hours of the Incinerator. Lastly, the Incinerator is not required to comply with the short-term PSD emission limits for SO_2 and PM_{10} during startups, shutdowns or malfunctions, and not required to comply with short-term PSD limits for NO_x and CO during malfunctions. Draft PSD Permit at 10-11. Therefore, NEA is not prohibited under its permit from operating the Incinerator at 110% of MCR for 24 hours a day, 365 days a year.

MDE must either establish conditions which restrict the Incinerator to operate under the modeled conditions, which would prohibit operation at 110% of MCR for any period longer than 24 hours, or it must model the air quality impacts of the Incinerator based on the maximum allowable emissions from the Incinerator. 40 C.F.R. § 52.21(k)(1).

B. MDE Must Identify Which SO_2 Emissions Rate Was Used in Evaluating SO_2 Impacts on Short-Term Air Quality Standards

MDE must also explain which SO_2 emissions rate was used when conducting the SO_2 impacts analysis. An analysis was required for 1-hour, 3-hour, 8-hour and 24-hour SO_2 standards, and the PSD Permit establishes a higher emissions limit with a 24-hour averaging period than the SO_2 emissions limit with an annual averaging period. Specifically, the 24-hour averaging limit is 24 ppmdv @ 7% O_2 and the annual averaging limit is 14 ppmvd @ 7% O_2. As the Incinerator does not have to demonstrate that it will meet the 14 ppmvd limit on a 24-hour or less average, the 24 ppmdv rate should have been used when modeling impacts for the 1-hour, 3-hour, 8-hour and 24-hour standards. MDE must confirm that the 24 ppmvd limit was, in fact, used for this calculation.

Thank you for your consideration of these comments.

Sincerely,

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