



## **GROUP AGAINST SMOG & POLLUTION**

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### **Via Email**

February 23, 2015

Pennsylvania Dept. of Environmental Protection  
Air Quality Program  
400 Waterfront Drive  
Pittsburgh, PA, 15222  
asandy@pa.gov

### **GASP comments regarding Air Quality Plan Approval 65-00990C - Tenaska Pennsylvania Partners, LLC Westmoreland Generating Station**

Dear Mr. Sandy,

Please accept these comments regarding proposed Air Quality Plan Approval 65-00990C for the Tenaska Pennsylvania Partners, LLC Westmoreland Generating Station<sup>1</sup> on behalf of the Group Against Smog and Pollution (GASP).

If you have any questions or require any additional information please feel free to contact me. Thank you for providing this opportunity to comment.

Sincerely,

Joe Osborne  
Legal Director

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<sup>1</sup> 45 Pa.B. 316 (Jan. 17, 2015 ).

## **GASP comments regarding Air Quality Plan Approval 65-00990C - Tenaska Pennsylvania Partners, LLC Westmoreland Generating Station**

### **1. The applicant has failed to provide source-specific equipment information for multiple emission units and control devices to be located at the proposed facility.**

Tenaska has yet to select specific equipment models or finalize the design for multiple emission units and control devices to be installed at the proposed facility, including,

- the selective catalytic reduction (SCR) unit to control emissions from the combustion turbines and heat recovery steam generator (HRSG) duct burners,<sup>2</sup>
- the oxidation catalyst to control emissions from the combustion turbines and HRSG duct burners,<sup>3</sup>
- the diesel-fired emergency generator engine,<sup>4</sup>
- the diesel-fired emergency fire pump engine,<sup>5</sup>
- the cooling tower and cooling tower drift eliminators.<sup>6</sup> and
- the auxiliary boiler.<sup>7</sup>

According to the EPA NSR Workshop Manual:

"technical specifications may be considered the core of the [preconstruction] permit in that they specifically identify the emissions unit(s) covered by the permit and the corresponding emission limits with which the source must comply. Properly identifying each emissions unit is important so that (1) inspectors can easily identify the unit in the field and (2) the permit leaves no question as to which unit the various permit limitations and conditions apply. Identification usually includes a brief description of the source or type of equipment, size or capacity, model number or serial number, and the source's identification of the unit."<sup>8</sup>

Specifications for yet-to-be constructed sources often involve some acceptable degree of uncertainty; however, for the reasons discussed below, in this instance the applicant has failed to provide sufficient information to demonstrate that the facility will comply with applicable requirements of the Federal Clean Air Act and the Pennsylvania Air Pollution Control Act.<sup>9</sup>

<sup>2</sup> Letter from Tenaska Pennsylvania Partners, LLC to Alexander Sandy, PADEP (received Apr. 22, 2014) at 5.

<sup>3</sup> *Id.*

<sup>4</sup> *Id.* at 2 (the applicant did provide a generator specification sheet to the Department, but stated that "the make and model are indicative only as the specific engine has not yet been selected.")

<sup>5</sup> *Id.* (the applicant provided a fire pump specification sheet, but again stated that "the make and model are indicative only as the specific engine has not yet been selected.")

<sup>6</sup> *Id.* at 6.

<sup>7</sup> Email from Larry Carlson, Tenaska, to Alexander Sady, PADEP (Nov. 11, 2014).

<sup>8</sup> US EPA, Draft NSR Workshop Manual (Oct. 1990) at H.32, *available at* <http://www.epa.gov/ttn/nsr/gen/wkshpman.pdf>.

<sup>9</sup> See 25 Pa.Code § 127.12(a), "An application for approval shall: . . . (4) Show that the source will comply with applicable requirements of this article and requirements promulgated by the Administrator of the EPA under the Clean Air Act."

**(a) Failure to provide source-specific equipment information may greatly compromise the accuracy of facility emission estimates.**

As a result of Tenaska's failure to provide source-specific equipment information, projected emissions from these devices must be derived from generic emission factors that may not accurately represent the emissions performance of the specific equipment that is ultimately installed at the facility. In the introduction to AP-42, EPA states:

"[S]ource-specific tests or continuous emission monitors can determine the actual pollutant contribution from an existing source better than can [AP-42] emission factors. . . . If representative source-specific data cannot be obtained, emissions information from equipment vendors, particularly emission performance guarantees or actual test data from similar equipment, is a better source of information for permitting decisions than an AP-42 emission factor "<sup>10</sup>

For example, not only has the applicant failed to provide specific model information for the proposed auxiliary boiler, it cannot even say whether the model it ultimately installs will be equipped with a flue gas recirculation (FGR) system.<sup>11</sup> FGR systems reduce NO<sub>x</sub> emissions and may also increase CO emissions; thus by failing to provide this information the applicant increases the level of uncertainty regarding the emissions estimate for the auxiliary boiler.

The SCR unit and oxidation catalyst are the primary pollution controls for the proposed Westmoreland Generating Station; thus if the estimated control efficiencies for these particular devices prove to be inaccurate, the magnitude of the resulting error in estimated facility emissions could be significant. Inaccurate emissions estimates may, in turn, result in errors in numerous other elements of the preconstruction permitting process (e.g., major source applicability determinations, modeled ambient air impacts, BACT and LAER requirements, etc.) as well as permit noncompliance when the facility commences operation.

**(b) BACT and LAER analyses generally require consideration of source-specific equipment information.**

EPA's NSR Workshop Manual recommends consideration of source-specific equipment information at multiple points in a BACT/LAER analysis. For example, the manual instructs applicants to determine source-specific "control system design parameters" and states that, "[i]n general, the BACT analysis should present vendor supplied design parameters."<sup>12</sup> EPA also notes that both the technical feasibility of a potential pollution control technology, as well as the control method's ability to achieve a specified emission limit may vary depending on the specific equipment model being evaluated.<sup>13</sup> Finally, when estimating control system costs, EPA directs

<sup>10</sup> US EPA, Introduction to AP 42, Volume I, Fifth Edition (Jan. 1995) at 3, *available at* <http://www.epa.gov/ttn/chief/ap42/c00s00.pdf>.

<sup>11</sup> Email from Larry Carlson, Tenaska, to Alexander Sady, PADEP (Nov. 11, 2014).

<sup>12</sup> NSR Workshop Manual, *supra* note 8 at B.32.

<sup>13</sup> *Id.* at B. 61.

applicants to either provide "site-specific" cost estimates or use general cost estimates "adjusted due to site specific conditions."<sup>14</sup>

- (c) **Prior to issuing a final permit the DEP should require Tenaska to provide sufficient source-specific equipment information and equipment design parameters to demonstrate compliance with facility emission limits and other applicable requirements.**

Plan approval applications must "show that the source will comply with applicable requirements of this article and requirements promulgated by the Administrator of the EPA under the Clean Air Act."<sup>15</sup> Tenaska's plan approval application does not currently satisfy this requirement because it fails to provide relevant technical specifications for multiple devices it intends to operate at the facility, including the SCR unit, oxidation catalyst, emergency generator, emergency fire pump, and the cooling tower and cooling tower drift eliminators. At present, the applicant relies almost entirely on generic source-category emission factors, assumed pollution control efficiencies unsupported by equipment-specific vendor guarantees or stack tests, and vendor specification sheets for equipment models the applicant does not intend to install at the facility.<sup>16</sup> Tenaska's current facility emissions calculations may ultimately prove to be a reasonably accurate estimate of actual facility emissions; however, that does not alter Tenaska's obligation to provide a defensible technical basis for its emissions estimates.

**2. The RBLC database lists several combined cycle gas turbines subject to more stringent BACT emission limits and averaging times than the current proposed BACT and LAER limits for the Westmoreland Generating Station.**

Facility	RBLC ID	NOx	VOC	CO	NH3
<b>Tenaska Westmoreland Generating Station</b>		2.0 ppmvd 3-hr avg.	2.4 ppmvd 3-hr avg.	2.0 ppmvd 3-hr avg.	5.0 ppmvd 3-hr avg.
<b>Calpine, Turner Energy Center</b>	OR-0046	2.0 ppmvd 1-hr avg.	1.0 ppmvd 3-hr avg.		
<b>IDC Bellingham</b>	CA-1050	1.5 ppmvd 1-hr avg.	1.0 ppmvd 1-hr avg.	2.0 ppmvd 1-hr avg.	2.0 ppmvd 1-hr avg.
<b>Avenal Energy Project</b>	CA-1192	2.0 ppmvd 1-hr avg.		1.5 ppmvd 1-hr avg.	

Unless the applicant can demonstrate that these lower RBLC emission limits do not constitute BACT or LAER for the Westmoreland Generating Station, the final plan approval must incorporate more stringent combustion turbine emission limits and averaging times comparable to those of the RBLC sources listed in the table above.

<sup>14</sup> *Id.* at Appendix B, b.3.

<sup>15</sup> 25 Pa.Code § 127.12(a)(4).

<sup>16</sup> Letter from Tenaska Pennsylvania Partners, LLC to Alexander Sandy, PADEP (Apr. 22, 2014) at 2.

### 3. Formaldehyde emissions from the facility may be underestimated.

The applicant uses AP-42 emission factors<sup>17</sup> to calculate combustion turbine emissions for all HAPs with the exception of formaldehyde (HCHO).<sup>18</sup> For HCHO emissions from combustion turbines, the applicant replaces the AP-42 emission factor (7.1e-4 lb/MMBtu) with its own, drastically lower, emission factor (3.13e-4 lb/MMBtu).<sup>19</sup>

The applicant states that this alternate emission factor is "based on stack test data from sites using similar turbines to units proposed in this configuration design. 3 times average of stack test data from 2003."<sup>20</sup> This stack test data was not included in the materials provided during GASP's file review. Presumably this information either was not provided to DEP or was among the application materials Tenaska deemed confidential.<sup>21</sup>

In any case, Tenaska has failed to provide sufficient information to justify use of its alternate HCHO emission factor. Tenaska cannot reasonably claim that this emission factor better represents the facility's turbine and HRSG emissions when it has yet to determine such fundamental source-specific emissions information as the design parameters and model information for the pollution control devices intended to reduce the turbine and HRSG emissions.<sup>22</sup>

Using the AP-42 HCHO emission factor for turbines would add an additional 10.95 TPY to the facility's HCHO PTE. This would cause the facility's total HAP PTE to increase to 32 TPY and exceed the 25 TPY major source threshold for combined HAPs.

The applicant also removed the AP-42 HCHO emission factor for the HRSG duct burners (7.5e-2 lb/MMscf or 7.35e-5 lb/MMBtu); however, the applicant did not provide an alternate emission factor in its place nor did it provide a rationale for the omissions. Presumably the failure to provide an HCHO emission factor for the HRSG duct burners was an oversight. Use of the AP-42 emission factor would add an additional 0.15 TPY to the facility's total HCHO PTE.

<sup>17</sup> AP-42 *supra* note 10, Chapter 3.1, Table 3.1-3 and Chapter 1.4, Table 1.4-3.

<sup>18</sup> Tenaska Pennsylvania Partners, LLC, Air Quality Plan Approval Application for Westmoreland Generating Station (Nov. 6, 2013, revised Apr. 22, 2014, revised Nov. 12, 2014) Appendix B at B-5 - B-6

<sup>19</sup> *Id.*

<sup>20</sup> *Id.*

<sup>21</sup> Letter from Tenaska to DEP (Apr. 22, 2014) *supra* note 16 at 1.

<sup>22</sup> *See* discussion in Section 1, *supra*.