

Secretary's Order No.: 2010-A-0040

RE: Approving Final Amendments to 7 DE Admin. Code 1125, Requirements for Preconstruction Review, Section 3.0, "Prevention of Significant Deterioration of Air Quality" and 7 DE Admin. Code 1130, Title V State Operating Permit Program, Section 2.0, "Definitions": Greenhouse Gas (GHG) Emissions

Date of Issuance: November 17, 2010

Effective Date of the Amendment: December 11, 2010

Under the authority vested in the Secretary of the Department of Natural Resources and Environmental Control ("Department" or "DNREC") the following findings, reasons and conclusions are entered as an Order of the Secretary in the above-referenced rulemaking proceeding.

Background and Procedural History

This Order considers proposed regulatory amendments to 7 DE Admin. Code 1125, Requirements for Preconstruction Review, Section 3.0, "Prevention of Significant Deterioration of Air Quality" and 7 DE Admin. Code 1130, Title V State Operating Permit Program, Section 2.0, "Definitions": Greenhouse Gas (GHG) Emissions, to enable Delaware to conform to the requirements of a recent federal rule, 75 FR 31514, "Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule" (June 3, 2010), providing for the regulation of certain greenhouse gases, which are considered pollutants under existing Delaware air quality regulations.

The Department is proposing to amend existing Regulations 1125 and 1130 by adding definitions which describe greenhouse gases (GHG) as composed of the aggregate group of six greenhouse gases: carbon dioxide (CO₂), nitrous oxide (N₂O), methane

(CH₄), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF₆), as well as for carbon dioxide equivalent emissions (CO₂e). These regulations also will be amended to require consideration for permitting of certain GHG emitting sources, under Title V (Reg. 1130) and new source review (Reg. 1125), beginning January 2, 2011, that emit or have the potential to emit, 75,000 tons per year, or, 100,000 tons per year of CO₂e. The Department is proposing to make these revisions now to add the new threshold limits for regulating these emissions in these regulations as shown in the recently issued federal rule 75 FR 31514, "Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule", as noted above.

On August 31, 2010, the Department's Division of Air Quality (DAQ) commenced the regulatory development process with Start Action Notice 2010-19. The Department published the proposed regulatory amendments in the October 1, 2010 *Delaware Register of Regulations* and held a public hearing on November 10, 2010. The Department's presiding hearing officer, Lisa A. Vest, prepared a Hearing Officer's Report dated November 12, 2010 (Report). The Report recommends certain findings and the adoption of the proposed regulatory amendments as attached to the Report as Appendix A.

Findings and Discussion

I find that the proposed Amendments are well-supported by the record developed by the Department, and adopt the Report to the extent it is consistent with this Order. The Department's experts developed the record and drafted the proposed Amendments.

The Department received public comments from the regulated community, as noted in the Report, and considered and responded to all timely and relevant public comments in making its determination.

I find that the Department's experts in the Division of DAQ fully developed the record to support adoption of this Amendment. With the adoption of the regulatory amendments to 7 DE Admin. Code 1125, Requirements for Preconstruction Review, Section 3.0, "Prevention of Significant Deterioration of Air Quality" and 7 DE Admin. Code 1130, Title V State Operating Permit Program, Section 2.0, "Definitions": **Greenhouse Gas (GHG) Emissions**, Delaware will be enabled to conform to the requirements of a recent federal rule, 75 FR 31514, "Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule" (June 3, 2010), providing for the regulation of certain greenhouse gases, which are considered pollutants under existing Delaware air quality regulations. Additionally, these regulations are being amended at this time to require consideration for permitting of certain GHG emitting sources, under Title V (Reg. 1130) and new source review (Reg. 1125), beginning January 2, 2011, that emit or have the potential to emit, 75,000 tons per year, or, 100,000 tons per year of CO_{2e}.

In conclusion, the following findings and conclusions are entered:

- 1.) The Department has jurisdiction under its statutory authority to issue an Order adopting these proposed Amendments as final;

2.) The Department provided adequate public notice of the proposed Amendments, and provided the public with an adequate opportunity to comment on the proposed Amendments, including at a public hearing;

3.) The Department held a public hearing on November 10, 2010 on the proposed Amendments in order to consider public comments before making any final decision, and fully considered and responded to all timely and relevant comments received from the regulated community concerning this matter;

4.) The Department's Hearing Officer's Report, including its recommended record and the recommended Amendments as set forth in Appendix A, are adopted to provide additional reasons and findings for this Order;

5.) The recommended Amendments do not reflect any substantive changes from the proposed regulation Amendments as published in the October 1, 2010, *Delaware Register of Regulations*;

6.) The recommended Amendments should be adopted as final regulation Amendments because (1) Delaware will be enabled to conform to the requirements of a recent federal rule, 75 FR 31514, "Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule" (June 3, 2010), providing for the regulation of certain greenhouse gases, which are considered pollutants under existing Delaware air quality regulations; (2) consideration will now be required for permitting of certain GHG emitting sources, under Title V (Reg. 1130) and new source review (Reg. 1125), beginning January 2, 2011, that emit or have the potential to emit, 75,000 tons per year, or, 100,000 tons per year of CO_{2e}; and (3) the regulation amendments are well supported by documents in the record; and that

7.) The Department shall submit this Order approving the final regulations to the *Delaware Register of Regulations* for publication in its next available issue, and provide such other notice as the law and regulation require and the Department determines is appropriate.

/s/David S. Small (for)
Collin P. O'Mara
Secretary

MEMORANDUM

TO: The Honorable Collin P. O’Mara
Cabinet Secretary, Dept. of Natural Resources and Environmental Control

FROM: Lisa A. Vest
Public Hearing Officer, Office of the Secretary
Department of Natural Resources and Environmental Control

RE: Proposed Amendments to 7 DE Admin. Code 1125, Requirements for Preconstruction Review, Section 3.0, “Prevention of Significant Deterioration of Air Quality”, and 7 DE Admin. Code 1130, Title V State Operating Permit Program, Section 2.0, “Definitions”:
Greenhouse Gas (GHG) Emissions

DATE: November 12, 2010

I. Background:

A public hearing was held on Wednesday, November 10, 2010, at 6:00 p.m. at the DNREC Delaware Energy Office, 1203 College Park Drive, Dover, Delaware, to receive comment on the Department’s proposal to amend 7 DE Admin. Code 1125, Requirements for Preconstruction Review, Section 3.0, “Prevention of Significant Deterioration of Air Quality” and 7 DE Admin. Code 1130, Title V State Operating Permit Program, Section 2.0, “Definitions”: **Greenhouse Gas (GHG) Emissions**. These amendments will conform to the requirements of a recent federal rule, 75 FR 31514, “Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule” (June 3, 2010), providing for the regulation of certain greenhouse gases, including, but not limited to, carbon dioxide, which are considered pollutants under existing Delaware air quality regulations.

The Department is proposing to amend existing Regulations 1125 and 1130 by adding definitions which describe greenhouse gases (GHG) as composed of the aggregate group of six greenhouse gases: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF₆), as well as for carbon dioxide equivalent emissions (CO₂e)¹. These regulations also will be amended to require consideration for permitting of certain GHG emitting sources, under Title V (Reg. 1130) and new source review (Reg. 1125), beginning January 2, 2011, that emit or have the potential to emit, 75,000 tons per year, or, 100,000 tons per year of CO₂e. The Department is proposing to make these revisions now to add the new threshold limits for regulating these emissions in these regulations as shown in the recently issued federal rule 75 FR 31514, "Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule", as noted above.

Greenhouse gases in the earth's atmosphere (as the name implies) tend to allow the passage of shortwave heating rays from the sun, which then warm the earth. The warm earth then radiates back some of this heat as longer-wave infrared radiation. These same greenhouse gases tend to absorb some of the infrared radiation, thus preventing it from being radiated into space. The greater the atmospheric concentration of greenhouse gases, the more heat is trapped, the less heat is radiated into space, and the greater becomes the temperature of the earth.

¹ The term CO₂e is based upon taking the mass weight of each individual GHG and multiplying it by its global warming potential as shown in Table A-1 of 40 CFR Part 98 Global Warming Potentials. Then by summing all the numbers, one obtains the CO₂ equivalent of all the GHG in tons per year.

Since the onset of the Industrial Revolution, the burning of fossil fuels like coal, oil and natural gas has increased the atmospheric concentration of CO₂. Other anthropogenic activities have given rise to the concentration of methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. Each of these gases has a different potential to cause global warming and a different atmospheric lifetime before natural causes reduce their concentrations. For example, the global warming potential (GWP) of CO₂ is one, and its lifetime is 120 years, while sulfur hexafluoride has a GWP of 23,900, meaning that one pound of sulfur hexafluoride is equivalent in GWP to 23,900 pounds of CO₂, and a lifetime of 3200 years.

The Environmental Protection Agency (EPA) has, in the past, taken several positions on their authority to regulate greenhouse gases. In 2006, several states and environmental organizations brought the issue to the Supreme Court to require the EPA to regulate emissions of CO₂ and other greenhouse gases under the Clean Air Act (CAA), Section 202(a), which relates to motor vehicle emission standards for new motor vehicles or new motor vehicle engines. In April of 2007, in the matter of *Massachusetts v. EPA*, the Supreme Court decided that, under the CAA, EPA had the authority to regulate CO₂ and other greenhouse gases.

In December of 2009, EPA issued federal rule 74 FR 66496, "Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act" which showed; (1) there is a connection between the observed rising atmospheric concentration of greenhouse gases and a measurable increase in global warming; (2) the impact of this temperature rise has been recorded, in addition to other effects, in increasing arctic sea ice melting and an increase in global sea level; (3)

atmospheric concentrations of CO₂, methane and nitrous oxide are the predominate contributors to global warming, but hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride concentrations also exert a pronounced effect and their concentrations have been rising rapidly due to an increased use of these materials, and should be considered together as the pollutant greenhouse gases or GHG; (4) the observed impacts constitute an endangerment of public health and welfare; and (5) the combined emissions of CO₂, methane, nitrous oxide and hydrofluorocarbons from new motor vehicles and new motor vehicle engines are contributing to this mix of greenhouse gases in the atmosphere and thus to this endangerment of public health and welfare.

The endangerment finding opened the way to establishing a rule regulating GHG emissions from motor vehicles. On May 10, 2010, the federal light-duty vehicle rule, a joint effort by the EPA and the Department of Transportation, 75 FR 25324, was published for model year 2012 through 2016 vehicles, regulating fuel economy and GHG emissions. These vehicles emit four of the six GHG; namely, CO₂, CH₄, N₂O and certain hydrofluorocarbons as leakage from air-conditioning units.

Since the earliest a model year 2012 vehicle could be sold was January 2, 2011, this was when GHG became subject to regulation under the CAA, and was the date that triggered wider application of regulating GHG. On that date, stationary sources emitting GHG would be subject to regulation under state new source review regulations (such as Delaware's Regulation 1125), and state Title V operating permit programs (such as Delaware's Regulation 1130).

EPA recognized that the existing federal regulations for the Prevention of Significant Deterioration of Air Quality and Title V, which were models for state regulations, were based upon emission thresholds of 100 and 250 tons of pollutants per year. For criteria pollutants like nitrogen oxides, carbon monoxide and volatile organic compounds, these threshold levels for determining what is and what is not a major source of the pollutant, at and above which the source may be subject to regulation, was satisfactory.

For GHG like CO₂, these threshold levels were considered way too low for practicality. A fuel-oil fired boiler operating at 140,000 BTU per hour will emit 100 tons per year of CO₂. Using such a low threshold for Title V permitting or for source categories in PSD (non-source categories would have a threshold of 250 tons per year of CO₂ or a firing rate of 350,000 BTU per hour) would bring in many more sources to be permitted and overload state permitting systems. At a 100/250 tons per year emission level, such sources as restaurants, schools, large residences, and heated swimming pools would need to be permitted, a large group of sources never before permitted and with owner/operators totally unfamiliar with the permitting process. An EPA study showed that, nationwide, Title V permits would increase from a current level of about 14,700 to 6.1 million permits, and that the current level of PSD permitting of about 400 permits per year would increase to over 82,000 permits per year. Something needed to be done during the early years of GHG permitting to make the permitting burden fit what actually could be handled until means to improve the permitting process could be found. This was the genesis of the tailoring rule.

EPA determined that over 70 percent of GHG sources would be permitted if the threshold level was set at 100,000 tons per year of CO_{2e} and that only 1,000 additional Title V permits would be required nationally, an increase in permitting that was reasonable, and that PSD permitting would increase nationally by only 900 permits per year. To accommodate the PSD modifications, a significance level of 75,000 tons per year CO_{2e} was selected.

The final rule "Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule" 75 FR 31514 was published June 3, 2010. Delaware is in a position to regulate GHG, but decided to make several regulation revisions for clarity and to add the new threshold emission levels. Later, perhaps by 2016, EPA expects modifications to the tailoring rule to expand permitting activity to include smaller sources by reducing the threshold level to closer to or equal to 100/250 tons per year.

The proposed amendments to existing Regulations 1125 and 1130 were published in the October 1, 2010 edition of the *Delaware Register of Regulations*. During both the pre-hearing phase of this promulgation and at the time of the hearing on November 10, 2010, public comment was received by the Department, which will be addressed below. Proper notice of the hearing was provided as required by law.

II. Summary of Hearing Record:

At the time of the hearing on November 10, 2010, Gene Pettingill of the Department's Division of Air Quality offered the Department's seventeen (17) exhibits pertaining to this proposed amendment, and this Hearing Officer entered them into the formal hearing record developed in this matter. Included within those Departmental exhibits was a copy of the Start Action Notice for this promulgation (SAN No. 2010-19),

copies of the legal notices regarding the holding of this public hearing on November 10, 2010, copies of related EPA reference rules upon which the Department relied in the drafting of this proposed amendment, and copies of the actual proposed amendments to Regulations 1125 and 1130 as noted above.

Prior to the public hearing of November 10, 2010, public comment was received from both Robert A. Reich, P.E., Manager, Global Environmental Stewardship at DuPont, and Angela D. Marconi, P.E., Cherry Island Landfill Gas Manager, Delaware Solid Waste Authority (DSWA). Although the hearing record was closed with regard to receipt of any further comment at the conclusion of public hearing on November 10th, this Hearing Officer specifically noted that the record would remain open in order for the inclusion into the record of the Department's responses to the comments already received from both DuPont and DSWA.

With regard to the comments presented by Mr. Reich dated October 22, 2010, it was DuPont's position that the Department needed to add several additional definitions into Section 1.9 of Regulation 1125 and Section 2.0 of Regulation 1130 in order to clarify several categories of GHGs that are (1) not unique chemical compounds; and (2) are not defined in EPA's Tailoring Rule. Specifically, DuPont requested that Delaware's definitions for "hydrofluorocarbon" and "perfluorocarbons" include restrictions that are not in the EPA implied definition of these terms. In response to this request, Mr. Pettingill advised DuPont on November 9, 2010 that DAQ believes that EPA has "...implicitly defined HFC and PFC in the "Tailoring" rule by directing readers, on page 31606, to the amendments under Part 51, such as 51.166(b)(48)(ii)(a) to Table A-1 to Subpart A of Part 98 of this chapter – Global Warming Potentials, which Table is an

Appendix to the Mandatory Greenhouse Gas Reporting Rule”. In Table A-1 of the EPA rule (and Tables 1-1 and 2-1 of Delaware’s Regulations 1125 and 1130, respectively), these compounds are defined or identified by chemical name, formula and Chemical Abstracts (CAS) number, which the Department believes is a more than adequate definition for these two classes of compounds that are included in the term “GHG”. Mr. Pettingill further advised Mr. Reich that the Department “...believes it is essential to maintain consistency among all the states and the EPA in the definition of what is a GHG...”, and thus DAQ is not agreeable to changing and/or adding any additional language to these proposed amendments, as it is believed that such action would “...introduce confusion in the application of the full suite of EPA Greenhouse Gas rules.” As further clarification, in an email sent to Paul Jann (DuPont) by Mr. Pettingill on November 12, 2010, the Department confirmed with DuPont that the HFC and PFC compounds listed in Table 1-1 is the all-inclusive list, and that no other fluorinated compounds would be subject to the Tailoring rule, nor were any other fluorinated compounds were included in Regulations 1125 and/or 1130.

With regard to the comment received from DSWA, the Department received correspondence from Angela D. Marconi, P.E., dated October 27, 2010. In this letter, DSWA wished to clarify several points with respect to Delaware’s implementation of EPA’s Tailoring Rule. In an email sent to Ms. Marconi by Mr. Pettingill on the afternoon of November 10, 2010 (just before the actual public hearing held later that same night), DNREC responded to DSWA’s comments as follows:

1. In response to DSWA's request that DNREC will "follow suit and exclude biogenic GHG emissions if EPA does so, the Department notes that it must adopt regulations that are either equal to or more stringent than the minimum federal requirements. Thus, if the EPA excludes biogenic GHG emissions, then DNREC would consider a corresponding change to its regulations, and any change would be subject to public notice and comment;
2. In response to DSWA's request that DNREC confirm that fugitive emissions from a landfill will not trigger inclusion in the rule, DNREC notes that, as shown in the current language of Regulation 1125, fugitives are considered in determining a major source or major modification in any of the 28 source categories (see provision 3.7.4.2). If EPA, in the current reconsideration of this aspect of their NSR rule, decides something different from DNREC's current practice, then it will be given consideration. Again, any change to the current DNREC regulation would be subject to public notice and comment;
3. In response to DSWA's recommendations concerning BACT for GHG, the Department notes that BACT determinations in Delaware will be on a case-by-case basis when individual permits are prepared. The DSWA solution may be evaluated at that time. In the meantime, DNREC suggests that DSWA follow developments on the EPA website (the link for which was provided for DSWA's review and convenience).

In addition to the aforementioned written comments dated October 27, 2010, a representative from DSWA (Nicole Burkhardt) attended the hearing on November 10, 2010, and offered additional comment for the record in this matter. Specifically, DSWA

requested that DNREC confirm that, if the Obama administration preempts EPA's authority to regulate GHGs, then "DNREC will follow suit and hold on these greenhouse gas revisions until the Tailoring Rule (or its replacement) is enforced". In response to this comment, Mr. Pettingill forwarded an email to Ms. Burkhardt on November 11, 2010, stating that if the Obama administration took such action, and the EPA was prevented from regulating greenhouse gases as described, then DNREC would consider a corresponding change to Regulations 1125 and 1130, and such changes would be subject to public notice and comment. It should be noted that no changes were made by the Department to these proposed regulation amendments as a result of any of the comments that were received in this matter.

For the Secretary's review, and in order for the Secretary to gain a thorough understanding of this proposed promulgation, copies of the above-referenced proposed amendments are attached hereto as Appendix "A", and the same are expressly incorporated into this Hearing Officer's Report.

It should be noted that the Department adhered to all appropriate Delaware statutes and the regulatory development process in this matter, and that the Department has met the required public notice obligations regarding this proposed amendment. It should also be noted that the Department has reviewed these proposed amendments in the light of the Regulatory Flexibility Act, and believes the same to be lawful, feasible and desirable, and that the recommendations as proposed should be applicable to all Delaware citizens equally.

III. Conclusions and Recommendations:

Based on the record developed in this matter, I conclude that the Department has provided appropriate reasoning regarding the need for the proposed amendments to 7 DE Admin. Code 1125, Requirements for Preconstruction Review, Section 3.0, “Prevention of Significant Deterioration of Air Quality”, and 7 DE Admin. Code 1130, Title V State Operating Permit Program, Section 2.0, “Definitions”: **Greenhouse Gas (GHG) Emissions**. Accordingly, I recommend promulgation of these proposed amendments in the customary manner provided by law.

Further, I recommend the following findings:

1. The Department has jurisdiction under its statutory authority, 7 Del.C., Chapter 60, to make a determination in this proceeding;
2. The Department provided adequate public notice of the public hearing in a manner required by the law and regulations;
3. The Department held a public hearing in a manner required by the law and regulations;
4. The Department has reviewed these proposed amendments in the light of the Regulatory Flexibility Act, and believes the same to be lawful, feasible and desirable, and that the recommendations as proposed should be applicable to all Delaware citizens equally;
5. Promulgation of the aforementioned proposed amendments to 7 DE Admin. Code 1125 and 1130 will enable Delaware to conform to the requirements of a recent federal rule, 75 FR 31514, “Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule” (June 3, 2010), providing for the

regulation of certain greenhouse gases which are considered pollutants under existing Delaware air quality regulations;

6. The aforementioned proposed amendments to 7 DE Admin. Code 1125 and 1130 will add definitions to the existing Delaware regulations, thus describing GHGs as composed of the aggregate group of six greenhouse gases: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF₆), as well as for carbon dioxide equivalent emissions (CO₂e), which is obtained by multiplying the mass weight of each individual greenhouse gas by its global warming potential and summing the results for a particular emissions source;
7. Additionally, the aforementioned proposed amendments to 7 DE Admin. Code 1125 and 1130 will require consideration for permitting of certain GHG emitting sources, under Title V (Reg. 1130) and new source review (Reg. 1125), beginning January 2, 2011, that emit or have the potential to emit, 75,000 tons per year, or, 100,000 tons per year of CO₂e. In making these revisions now, the new threshold limits will be added to enable Delaware to regulate these emissions in these regulations, as shown in the recently issued federal rule 75 FR 31514, "Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule";
8. The Department has an adequate record for its decision, and no further public hearing is appropriate or necessary;

9. The Department's proposed amendments to this regulation, as published in the October 1, 2010 *Delaware Register of Regulations* and as set forth within Appendix "A" hereto, are adequately supported, not arbitrary or capricious, and are consistent with the applicable laws and regulations. Consequently, they should be approved as final regulation amendments, which shall go into effect ten days after their publication in the next available issue of the *Delaware Register of Regulations*; and
10. The Department shall submit the proposed regulation amendments as final to the *Delaware Register of Regulation* for publication in its next available issue, and shall provide written notice to the persons affected by the Order.

/s/ Lisa A. Vest
LISA A. VEST
Public Hearing Officer

