

***Comment Response Document***

***Commonwealth of Pennsylvania  
Department of Environmental Protection***

***Invenergy LLC  
Lackawanna Energy Center  
Permit Decision  
Title V Operating Permit 35-00069  
Borough of Jessup, Lackawanna County***

***Public Comment Period Dates  
April 7, 2022 – June 6, 2022  
Public Hearing on May 25, 2022***

***August 2, 2023***

**Department of Environmental Protection**

[www.dep.pa.gov](http://www.dep.pa.gov)

## **FACILITY DESCRIPTION**

On November 13, 2021, the Department of Environmental Protection (Department or DEP) published in *The Pennsylvania Bulletin* a Notice of Intent to Issue initial Title V Operating Permit No. 35-00069 for Lackawanna Energy Center LLC (“Lackawanna Energy”) to continue operation of Lackawanna Energy Center in the Borough of Jessup, Lackawanna County, as described in Lackawanna Energy’s July 10, 2020 initial Title V Operating Permit Application and subsequent supplemental submissions. The proposed initial Title V Operating Permit authorizes the continued operation of three (3) identical 1 x 1 power blocks, consisting of three combustion gas turbines (CGTs or CTs), equipped with three heat recovery steam generators (HRSGs) and three steam turbines (ST).

Each CT exclusively combusts natural gas. The HRSGs are equipped with selective catalytic reduction (SCR) to minimize nitrogen oxide (NOx) emissions and oxidation catalysts to minimize carbon monoxide (CO) and volatile organic compound (VOC) emissions from the CTs.

The facility also includes several pieces of ancillary equipment. The list of equipment includes:

- One fuel gas dew-point heater - natural gas fired, common for all CTs
- One auxiliary boiler, natural gas-fired
- One diesel engine powered emergency generator
- One diesel engine powered fire water pump
- Diesel fuel, lubricating oil, and aqueous ammonia storage tanks

## PUBLIC COMMENTS

Several comments were received during a 30-day written comment period following publication of the Department's Notice of Intent to Issue. During that comment period, the Department received requests from members of the public to conduct a public hearing. On May 25, 2022, the Department held a public hearing at the Valley View School District concerning the proposed initial Title V Operating Permit 35-00069. The hearing was advertised in a local paper of general circulation.

This document briefly summarizes the testimony presented during the public hearing and provides the Department's response to relevant comments received. The comments are not intended to be a complete summary of each individual's testimony, but rather to identify the issues or comments raised and provide the context for the Department's responses. The Department's responses are limited by the scope of the Title V Operating Permit Application process and the Department's authority under the Pennsylvania Air Pollution Control Act (APCA), the regulations promulgated thereunder, the Federal Clean Air Act (CAA), and the Federal regulations promulgated thereunder. The testimony of each individual was transcribed, is available in its entirety at the DEP's Northeast Regional Office, and may be accessed by any person wishing to review it by scheduling a file review with the Department at (570) 826-2511.

## LIST OF COMMENTERS

| <b>List of Individuals providing testimony concerning Title V Operating Permit No. 35-00069</b> |  |
|---|--|
| 1.  | Rella Scassellati                            |
| 2.  | Mark Freed, Esq. on behalf of Jessup Borough |
| 3.  | Dennis Peters, Peters Consultants            |
| 4.  | Kimberly Piasecki                            |
| 5.  | Anna Mae Stanley                             |
| 6.  | Michael Forte                                |
| 7.  | John Mellow                                  |
| 8.  | Gerald Crinella                              |
| 9.  | Sarah Helcoski                               |
| 10.   | Karl Koerner, Clean Air Council              |
| 11.   | Jeffrey Smith                                |
| 12.   | Mary Therese McKane                          |
| 13.   | Thomas Fiorelli                              |
| 14.   | Paula Ralston Nenish                         |
| 15.   | Judy Quinlan                                 |

## **Public Comments and Department Responses**

### **1. Comment**

*General concern about the correction in the annual particulate matter emission limit associated with the fuel gas heater. (Rella Scassellati, Mark Freed, Gerald Crinella, Sarah Helcoski, Jeffrey Smith, Mary Therese McKane, Thomas Fiorelli, Paula Ralston Nenish, Dennis Peters)*

### **Response**

The 12-month rolling sum filterable particulate matter emission (FPM) limit in plan approval 35-00069B for the 12 MMBtu/hr fuel gas heater was listed as 0.01 tons per year (tpy). The corrected and accurate 0.1 tpy FPM emission limit in the Title V Operating Permit is directly associated with both the fuel gas heater potential emissions in tons per year as listed in Appendix C of the plan approval application and the 0.002 lb/MMBtu emission factor for the fuel gas heater. Each of the fuel gas heater's permitted 12-month rolling sum emission limits were calculated from each corresponding permitted lb/MMBtu emission limit while operating at the maximum operating conditions of 8,760 hours per year and maximum heat input of 12 MMBtu/hr. It is not likely that the fuel gas heater will run at these maximum operating conditions, so actual emissions are likely to be below permitted levels.

In addition, Lackawanna Energy Center was required to perform air dispersion modeling to demonstrate that the emissions from the facility will not cause or contribute to a violation of any National Ambient Air Quality Standards (NAAQS). Lackawanna Energy Center used the U.S. EPA recommended model, AERMOD, which considers background air quality, emissions from other sources, potential emissions for the proposed source, meteorological data, topography, and other relevant data. All facility sources were included in the modeling analyses. The modeling analysis conducted included the fuel gas heater's particulate matter emissions which accounted for filterable and condensable particulate matter at 0.011 grams per second which corresponds to the 0.37 tpy permitted filterable and condensable particulate matter emission limit. The 0.37 tpy permitted filterable and condensable particulate matter emission limit includes the 0.1 tpy permitted filterable particulate matter emission limit.

The Department's technical review of the modeling for this project concluded that:

- Lackawanna Energy Center's proposed emissions will not cause or contribute to air pollution in violation of the NAAQS for PM10 and PM2.5.
- Lackawanna Energy Center's proposed emissions will not cause or contribute to air pollution in violation of the PSD increment standards for PM10 and PM2.5.

### **2. Comment**

*General concern about the request to revise the testing frequency for volatile organic compounds, sulfur oxides, sulfuric acid mist, total particulate matter, total PM10, total PM2.5, and formaldehyde emissions for the combustion turbines. (Rella Scassellati, Mark Freed)*

## **Response**

The testing frequency for volatile organic compounds, sulfur oxides, sulfuric acid mist, total particulate matter, total PM10, total PM2.5, and formaldehyde emissions for the combustion turbines remain at every two years in the initial Title V Operating Permit. The language that Mr. Freed proposed on behalf of Jessup Borough was also included in the testing requirements to clarify that an analysis shall be performed to propose testing frequency revisions. The Title V Operating Permit states that a comparison of measured pollutant emissions to pollutant emission limits shall be established to request testing frequency revision. This added language is to clarify that tested emissions data be examined to determine that the emission limits are in continual compliance and evaluate whether the tested emissions data is adequately low compared to the permitted emission limit to reasonably allow for less frequent testing of a pollutant.

## **3. Comment**

*General concern about emission monitoring and testing, and adherence to permit conditions. (Mary Therese McKane, Paula Ralston Nenish)*

## **Response**

The Pennsylvania Air Pollution Control Act and its implementing regulations, as well as the federal Clean Air Act and its implementing regulations, require the Department to include monitoring, recordkeeping, and reporting provisions that will measure compliance with the emission limits in the Title V Operating Permit. The facility must be operated and maintained in compliance with the conditions in the Title V Operating Permit, and the failure to do so could subject the holder of the Title V Operating Permit to penalties and various remedies to compel compliance outlined in the APCA.

The air contaminant emissions from the Lackawanna Energy Center are monitored by a combination of continuous emission monitoring systems (CEMS), stack testing, and parametric monitoring as well as recordkeeping and reporting. The emissions measured by the certified CEMS is submitted electronically to the Department's Division of Source Testing and Monitoring in Harrisburg, PA. The data received by the Division of Source Testing and Monitoring is used to generate quarterly reports that are reviewed by the Department to verify compliance with the emissions limitations. In addition, Lackawanna Energy is required to submit pre-test protocols and to conduct periodic stack tests. The Department also typically observes testing of major sources to verify only test methods and procedures acceptable to the Department are utilized.

## **4. Comment**

*General concern about the compliance history of the facility. (Rella Scassellati, John Mellow, Mark Freed, Karl Koerner, Dennis Peters)*

## **Response**

The facility has submitted the APCA Compliance Review Form (CRF) with the initial Title V Operating Permit application. The information requested by the CRF is part of the initial Title V Operating Permit application, as required by the rules and regulations of the Department, to enable the Department to

evaluate the applicant's history of compliance with the APCA, and to verify the current compliance status of the applicant and all related parties as required by Section 7.1 of the APCA, 35 P.S. § 4007.1, and Section 412 of the Air Resources Regulations, 25 Pa. Code § 127.412.

The exceedances noted within the original CRF were resolved in a Consent Assessment of Civil Penalty (“CACP”), dated December 21, 2021. In addition, the previously outstanding Title V emission fees for 2019 were paid, with interest, on August 15, 2022.

Under the “continuing obligation” section of the CRF, the applicant is required to submit the “Compliance Review Supplemental Form if any additional deviations occur between the date of submission and Department action on the application.” Consistent with this section, Lackawanna Energy submitted an amended filing for the CRF, which included isolated 1-hour block average exceedances of the nitrogen oxides (NOx) emission limits (2.1 ppm while standard is 2.0 ppm, and 25.5 lb/hr while the standard is 24.1 lb/hr) that occurred on January 15, 2022. The amended CRF noted that the majority of the violations identified in the original CRF were resolved under the December 21, 2021 CACP.

Additional exceedances of the emissions standards occurred on October 3, 2022 and December 24, 2022. The exceedances on October 3, 2022 included isolated 1-hour block average exceedances of the NOx emission limits (2.8 ppm while standard is 2.0 ppm, and 26.2 lb/hr while the standard is 24.1 lb/hr). The exceedances on December 24, 2022 included isolated 1-hour block average exceedances of the carbon monoxide (CO) emission limits (8.0 ppm while standard is 2.0 ppm, and 21.7 lb/hr while the standard is 14.6 lb/hr). These violations were isolated events that were short in duration and that were resolved in a CACP, dated July 11, 2023.

## 5. Comment

*General concern about the source of natural gas. (Rella Scassellati, John Mellow, Dennis Peters)*

## Response

Lackawanna Energy is required to use exclusively natural gas as fuel as defined in the New Source Performance Standards (NSPS) Subpart KKKK regulation 40 CFR § 60.331 as:

“a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1,100 British thermal units (Btu) per standard cubic foot. *Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.*”

(Emphasis added.) Under this definition of natural gas, the source of the natural gas does not affect the permitted emission limits, nor does it allow burning of landfill gas. In addition, Lackawanna Energy’s Conditional Use Permit, issued by the Borough of Jessup, contains a condition stating that Lackawanna Energy shall not be allowed to combust landfill gas at any time during the operating life of the facility.

## 6. Comment

*General concern about the potential for radon in Marcellus natural gas. (John Mellow)*

### Response

Radon concerns were addressed in the plan approval response to public comments as follows:

In 2013, the Department initiated a study to collect data relating to technologically enhanced naturally occurring radioactive materials (TENORM)<sup>1</sup> associated with oil and gas operations in Pennsylvania. This study included the assessment of potential worker and public radiation exposure, TENORM disposal, and other possible environmental impacts. It specifically included the evaluation of a natural gas fired power plant where ambient air radon concentration measurements were performed at the facility fence line. The results were all at or below the minimum detection concentration values for radon. The study concluded that there is little potential for additional radon exposure to workers and the members of the public at or from natural gas-fired power plants.

The TENORM study was updated in 2016; however the updates do not conflict with or reverse these findings from the 2013 study.

## 7. Comment

*General concern about incident response procedures for the facility. (John Mellow)*

### Response

When a malfunction, excess emissions, or deviation from the Title V Operating Permit requirements poses an imminent and substantial danger to the public health and safety or the environment, Lackawanna Energy is required to notify the Department by telephone no later than one hour after the incident. Any malfunction, excess emissions or deviation from the operating permit requirements, or any malfunction resulting in, or which may possibly result in, a violation of any applicable operating permit requirement or any applicable rule or regulation contained in the Department's Air Resource Regulations, that is not subject to the imminent and substantial danger to the public health and safety or environment requirement is required to be reported to the Department within twenty-four hours of discovery. Lackawanna Energy is also required to notify the Department immediately when corrective measures have been accomplished.

This concern was also raised previously during the public comment period for the Air Quality Plan Approval. In its response to comments, the Department provided the following information:

Lackawanna Energy has prepared a Preparedness, Prevention and Contingency (PPC) Plan for the facility which includes emergency response plans and procedures, and has submitted it to the

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<sup>1</sup> PA Department of Environmental Protection. "Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM) Study Report." January 15, 2015. (updated 5/18/2016) Available at: [http://www.portal.state.pa.us/portal/server.pt/community/oil\\_gas\\_related\\_topics/20349/radiation\\_protection/986697](http://www.portal.state.pa.us/portal/server.pt/community/oil_gas_related_topics/20349/radiation_protection/986697) (updated) <https://www.dep.pa.gov/Business/Energy/OilandGasPrograms/OilandGasMgmt/Oil-and-Gas-Related-Topics/Pages/Radiation-Protection.aspx>

Department. The PPC Plan was prepared in accordance with a guidance document issued by the Department for the preparation of such plans (" Guidelines for the Development and Implementation of Environmental Emergency Response Plans ", PA Department of Environmental Protection, September 2001). Consistent with Department guidance, the PPC Plan includes a description of the facility, preventative and training measures, a list of emergency contacts and coordination procedures, including with the Department in case of emergencies impacting air quality, and other information to ensure emergency response is well-coordinated with and protective of the public. In addition, Section C, Condition #019 of the plan approval requires Lackawanna Energy to contact the Department within one hour of any excess emission or deviation event that poses an imminent and substantial danger to the public health and safety or environment. This requirement is integrated into the PPC Plan. The Department also understands that Lackawanna Energy is required to address emergency response plans and procedures as part of the conditional use permit that was granted by Jessup Borough on December 21, 2015.

## **8. Comment**

*Concern regarding public participation procedures. (Karl Koerner, Jeffrey Smith, Thomas Fiorelli)*

### **Response**

The Pennsylvania Air Pollution Control Act (APCA) and the Pennsylvania Air Resources Regulations contain public participation requirements related to plan approval and operating permit applications. Section 6.1(b)(1) of the APCA provides, in part, that “[t]he department shall provide public notice and the right to comment on all permits prior to issuance or denial and may hold public hearings concerning any permit.” 35 P.S. § 4006.1(b)(1). Sections 127.424 through 127.431 of the Air Resources Regulations, 25 Pa. Code §§ 127.424 – 127 431, related to operating permits in general, contain specific requirements related to public notice, public comment and public hearings for operating permit applications. In addition, Section 127.521 of the Air Resources Regulations, related to Title V Operating Permits, states that public notice of an application shall be published by the permit applicant in a newspaper of general circulation in the area where the source is located. The Department is also required to provide public notice by publishing notice in the Pennsylvania Bulletin, providing notice to a mailing list developed by the Department and by other means if necessary, to assure adequate public notice. 25 Pa. Code § 127.521. At least 30- days is required for public comment and at least 30-days notice is required in advance of a public hearing for a Title V Permit. 25 Pa. Code § 127.521(e).

On November 13, 2021, the Department of Environmental Protection (Department or DEP) published in the *Pennsylvania Bulletin* a Notice of Intent to Issue initial Title V Operating Permit No. 35-00069 for Lackawanna Energy Center LLC in the Borough of Jessup, Lackawanna County, as described in the Permittee’s July 10, 2020 initial Title V Operating Permit Application and subsequent supplemental submissions.

Several comments were received during a 30-day written comment period following publication of the Department's Notice of Intent to Issue. During that comment period, requests to conduct a public hearing were received. On May 25, 2022, the Department held a public hearing at the Valley View School District concerning the proposed initial Title V Operating Permit 35-00069 for the Lackawanna Energy Center. The hearing was advertised in a local paper of general circulation on April 7, 8, and 9, 2022. The public had an opportunity to attend the hearing and could submit written comments to the Department



concerning the proposed initial Title V Operating Permit for an extended period until June 6, 2022. The public notice provided for public review of the Title V application, the Department’s technical review memo and other supporting documents. In addition, documents were sent to parties who requested copies.

The Department followed the public notice and comment procedures outlined in the APCA, as well as the Air Resources Regulations. As required by 25 Pa. Code § 127.431, after reviewing the public comments, this response document was prepared to provide notification of issuance of the Title V Operating Permit to Lackawanna Energy, and to respond to comments received during the public comment period. Accordingly, the Department believes that a thorough public participation process was conducted in accordance with applicable requirements.

**9. Comment**

*Concern regarding SO2 and PM/PM10/PM2.5 startup and shutdown emissions for inclusion in the facility’s potential to emit and short-term limits for startups and shutdowns. (Mark Freed)*

**Response**

The facility’s potential to emit (PTE) in Table 3-11 of Plan Approval Application 35-00069B includes the facility’s startup and shutdown emissions operating scenarios. Criteria pollutants that have increased emissions during startup and shutdown periods include NOx, CO, and VOCs due to SCR and oxidation catalysts needing to achieve and operate at design temperatures to effectively remove the pollutants. SO2 and PM emissions are greatest during normal full power operation.

The highest PTE for each pollutant from all potential facility operating scenarios was used to account for the facility’s PTE. Highest PTE based upon facility operating scenarios, including periods of startup and shutdown, have been included as 12-month rolling sum site emission limits in the Title V Operating Permit. The applicable permit condition indicates that the facility is a natural minor source of HAP’s and Pb, and a synthetic minor source of SO2 limited by a site-wide emission limit. Startup and shutdown scenarios (including cold start, warm start, hot start, and shutdown), have permitted emission limits for NOx, CO, and VOCs. (See Section E, Group 1, Condition # 005). Permitted hourly emission limits for NH3, SO2, H2SO4, total (filterable) PM, total (filterable and condensable) PM10/PM2.5, and VOCs have been reduced in the Title V Operating Permit due to the lower hourly emissions in Lackawanna Energy’s plan approval application attributable to the company not installing supplementary duct burners. Specifically, total PM, PM10/PM2.5 emissions limits in the Title V Permit have been reduced as follows because duct burners were not installed.

| Title V Operating Permit limits for Total PM, PM 10/PM 2.5 | Total PM, PM 10/PM2.5 <b>with</b> Duct Burners | Total PM, PM 10/PM 2.5 <b>without</b> Duct Burners |
|--|--|--|
| Total (filterable) PM                                      | 9.0 lbs/hr                                     | 5.55 lbs/hr  |
| Total (filterable and condensable) PM 10/PM 2.5            | 18.0 lbs/hr                                    | 11.1 lbs/hr  |

In its plan approval application, Lackawanna Energy requested a facility wide emission limit of 39.9 tpy for SO<sub>2</sub> emissions. The application noted that the calculations had conservatively assumed a fuel sulfur content of 0.4 grains per 100 standard cubic feet (scf) of natural gas, whereas the average historical sulfur content from the natural gas supplier is 0.11 grains per 100 scf. The permitted maximum total sulfur content for natural gas use is restricted in the plan approval and Title V Operating Permit to 0.4 grains per 100 standard cubic feet (scf) of natural gas. (See Section E, Group 1, Condition # 008). Lackawanna Energy is required to conduct and maintain records of monthly natural gas sulfur content analyses to determine the sulfur content of natural gas. The fuel usage and sulfur content are used to calculate monthly and 12-month rolling sum SO<sub>2</sub> emissions. (See Section E, Group 1, Condition # 021). Lackawanna Energy is required to keep accurate monthly records and submit semi-annual reports of the SO<sub>2</sub> emissions to verify compliance with the 39.9 tpy SO<sub>2</sub> 12-month rolling sum emission limit. In addition, each combustion turbine is limited individually to 13.1 tpy SO<sub>2</sub> in any 12 consecutive month period. (See Section E, Group 1, Condition # 003).

## **10. Comment**

*Concern regarding the review period for the initial Title V Operating Permit. (Karl Koerner)*

## **Response**

Lackawanna Energy Center supplied the commencement of operations notices for the three combustion turbines on December 21, 2017, May 8, 2018, and July 10, 2018, respectively. These notices included planned commercial operation dates of February 9, 2018, July 1, 2018, and September 1, 2018, respectively. Condition #004 in Section B of Lackawanna Energy's plan approval, No. 35-00069B, authorizes a temporary operation period not to exceed 180 days from the date of commencement of operation. This time period is allowed to facilitate shakedown of the sources and to evaluate the air contamination aspects of the sources. If further evaluation of sources is necessary beyond this 180-day period, an extension may be requested.

The shakedown and testing of all three turbines was conducted within the respective 180-day period from commencement of operation for each turbine and all three passed their testing requirements. Since no further evaluation of the sources was necessary, there was no reason to extend the temporary operating period for shakedown and testing. At this point, the continued operation of the turbines is covered under the operating conditions in the plan approval. The installation of continuous emission monitoring (CEM) equipment and ongoing monitoring and testing requirements help ensure compliance with permit emission limitations. Therefore, while the Title V permit has been undergoing review, Lackawanna Energy has been subject to the requirements in Plan Approval No. 35-00069B, as well as all applicable regulatory requirements.

Under 25 Pa. Code § 127.505(c) if the applicant submits a complete application within the time frames required under Section 505, and the Department fails to issue a permit through no fault of the applicant, the Title V facility may continue to operate if the fees required by Subchapter I (relating to plan approval and operating permit fees) have been paid and the source is operated in conformance with the Pennsylvania Air Pollution Control Act, the federal Clean Air Act, and the regulations thereunder. Section 505(e) goes on to state that applicants who meet the requirements of subsections (a) (referring to when an initial Title V application shall be submitted) and (c) of Section 505, shall have an application shield pursuant to 25 Pa. Code § 127.505(e).

Title V Operating Permit applications require extensive and thorough review, including a review of the applicant's Compliance Review Form. This information assists the Department in determining whether the facility is being operated in conformance with the Pennsylvania Air Pollution Control Act, the federal Clean Air Act and the regulations developed thereunder, and whether it is eligible for a Title V permit under 25 Pa. Code § 127.505(c). As stated in response to comment No. 4 above, Lackawanna Energy submitted a Compliance Review Form, as well as a Compliance Review Supplemental Form. Several outstanding compliance issues were addressed in a December 21, 2021 CACP while the application was under review. Specifically, that CACP resolved data availability, NOx and ammonia issues at the facility that occurred between 2018 and 2019. The Department addressed the remaining compliance issues regarding the isolated NOx exceedances and the isolated CO exceedance that occurred in the CACP dated July 11, 2023. Resolving these compliance issues, in addition to completing its review of the other permit application information, was an additional step that took place before the Department was ready to issue the Title V permit.

## **11. Comment**

*General statement regarding opposition to the permitting of Lackawanna Energy Center (Karl Koerner, Kimberly Piasecki, Gerald Crinella)*

## **Response**

Lackawanna Energy went through a lengthy pre-construction plan approval permitting process that required the review and application of prevention of significant deterioration (PSD) requirements, nonattainment new source review (NNSR) requirements, minor new source review requirements, good engineering practice stack height regulations, new source performance standards (NSPS), national emission standards for hazardous air pollutants (NESHAPs), compliance assurance monitoring (CAM), acid rain program regulations, cross-state air pollution rule (CSAPR), mandatory greenhouse gas reporting, the greenhouse gas tailoring rule, a risk management program, various Commonwealth of Pennsylvania regulatory requirements, and performance of dispersion modeling that showed that emissions from the facility would not violate the National Ambient Air Quality Standards (NAAQS), which are established to be protective of human health and public welfare. The plan approval, and now the Title V permit, contain monitoring, recordkeeping and reporting requirements, as discussed above, that allow the Department to ensure that the facility operates in compliance and to properly address any violations. In addition, the Department has the duty and authority to inspect the facility to ensure it is operating in compliance, which it does through monitoring the facility's reporting and through both announced and unannounced inspections. The Title V permit incorporates applicable regulations and requirements under the federal Clean Air Act, the Pennsylvania Air Pollution Control Act and the regulations developed under those statutes and the facility is required to comply with those requirements to ensure it that it is operated in a manner that protects human health and the environment.

## **12. Comment**

*General concern about environmental and health impacts (Paula Ralston Nenish, Gerald Crinella)*

## Response

The protection of public health, welfare and the environment is fundamental to permitting under the Federal Clean Air Act and the Pennsylvania Air Pollution Control Act. The Title V Operating Permit incorporates applicable requirements under both of those statutes, as well as the regulations developed under those statutes. This includes requirements related to the national ambient air quality standards (NAAQS).

There are two types of NAAQS for six criteria pollutants (sulfur dioxide [SO<sub>2</sub>], particulate matter [PM], nitrogen oxides [NO<sub>x</sub>], carbon monoxide [CO], ozone [O<sub>3</sub>] and lead [Pb]):

- (1) Primary Standards, which are designed to protect human health, taking into consideration sensitive populations, including children, the elderly and individuals with respiratory ailments; and
- (2) Secondary Standards designed to protect public welfare, including effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, property, and climate, as well as effects on economic values and on personal comfort and well-being.

As part of the plan approval application process, Lackawanna Energy was required to submit an air dispersion modeling analysis to demonstrate that emissions from the facility, in conjunction with applicable emissions from other existing sources, would not cause or contribute to a violation of the NAAQS. The modeling analysis considers a number of inputs, including background air quality, emissions from other sources, potential emissions for the proposed source, meteorological data, topography, and other relevant data.

Lackawanna Energy's plan approval could not have been issued unless the Department determined that the facility would satisfy applicable regulatory requirements and emissions from the facility would not cause or contribute to a violation of the NAAQS.

The Department's technical review of the modeling for this facility during plan approval review concluded that:

“Lackawanna Energy Center's proposed emissions will not cause or contribute to air pollution in violation of the National Ambient Air Quality Standards (NAAQS) for CO, NO<sub>2</sub>, PM-2.5, or PM-10, and the PSD increment standards for NO<sub>2</sub>, PM-2.5, or PM-10.”  
– Page 2

“In accordance with 40 CFR 52.21(o), Lackawanna Energy Center provided a satisfactory analysis of the impairment to visibility, soils, and vegetation that would occur as a result of Lackawanna Energy Center's facility and general commercial residential, industrial, and other growth associated with Lackawanna Energy Center's facility” – Page 3

“In accordance with 40 CFR 52.21(p), written notice of Lackawanna Energy Center's proposed facility has been provided to Federal Land Managers (FLM) of nearby Class I areas as well as initial screening calculations to demonstrate that the proposed emissions

from Lackawanna Energy Center's facility would not adversely impact visibility and air quality related values (AQRV) in nearby Class I areas.." – Page 3

***“Air Quality Analysis for Prevention of Significant Deterioration Memo, July 17, 2015”***

***From: Daniel J. Roble***

***Through: Andrew W. Fleck***

***To: Alan Berardi, P.E.***

Based on the modeling performed, the Department determined that the facility can operate without causing a violation of the NAAQS and in a manner that is protective of human health, public welfare and the environment. Requirements from the plan approval that are designed to ensure that the facility will operate in this way have now been incorporated into the Title V operating permit. This includes emission limits, testing, recordkeeping and monitoring requirements.

### **13. Comment**

*General concern about the noise impacts. (Mary Therese McKane, John Mellow, Gerald Crinella)*

#### **Response**

Noise was addressed previously in the Department's response to public comments submitted during the plan approval process. There, the Department stated:

Jessup has a zoning ordinance that contains provisions regulating noise within the Borough. Article 6 of the ordinance, which applies to "[a]ll existing and proposed permitted uses, special exceptions, and conditional uses and uses accessory thereto," contains performance standards and procedures for addressing, among other things, noise. Specifically, section 6.430, which was amended on August 5, 2013, and established permissible sound levels for various zoning districts within the Borough, including the M-1A zone where Lackawanna Energy was seeking to construct the plant. The ordinance is available on the Borough's website at <http://www.jessupborough.com/planning-zoning/building-zoning/>

In consideration of the noise concern the Department presented the issue to Lackawanna Energy. The Department's understanding is that the company conducted a noise modeling analysis demonstrating that the project complies with the requirements of the Jessup ordinance and that this analysis was provided to the Borough as part of Lackawanna Energy's Conditional Use Permit application, which was approved on December 21, 2015. Through this approval, the Borough has imposed conditions on Lackawanna Energy that must be complied with. In addition, the plan approval states, "[n]othing in this permit relieves the facility owner or operator from its obligations to comply with all applicable federal, state, and local laws and regulations." This would include Jessup's local ordinance pertaining to noise.

Lackawanna Energy submitted a Conditional Use Permit Application dated October 16, 2015, which was approved by Jessup Borough Council at a meeting held on December 21, 2015. The entire Conditional Use Permit Application was incorporated by reference, as Item 21, into the Jessup Borough Council Written Decision and Findings of Fact and Conclusions on the Application for Conditional Use approved on January 4, 2016. The application contained a lengthy site analysis including plans for ordinance

compliance, regulation of nuisance elements, fire and explosion hazards, radioactivity or electrical disturbance, noise, vibration, glare, smoke, odors, other forms of air pollution, and surface and groundwater contamination. An extensive noise level evaluation was submitted by Michael Theriault Acoustics, Inc. as part of the application which included an operational noise level and impact analyses to demonstrate compliance with zoning ordinance performance standards. The acoustical design provided in the analysis included high-performance silencers located within the air intake ductwork of the combustion turbines; silencers installed on fans providing ventilation air to the combustion turbine compartments; weatherproof, acoustically-rated enclosures for each of the combustion-turbine generators; combustion turbine exhaust diffuser noise walls; combustion turbine exhaust noise attenuated via the SCR/HRSG units; and buildings enclosing the steam turbine generator, gas compressors and water treatment equipment.

The modeling results concluded:

*“At nearby residences, LEC noise levels during full load operation and under favorable sound propagation conditions are expected to range from about 40 to 46 dBA. These levels are appreciably lower than limits found in most laws, ordinances, regulations and standards promulgated throughout the U.S. for the control of industrial noise at residential land uses. Furthermore, LEC levels are consistent with: 1) outdoor noise level guidelines historically recommended by acoustical consultants; 2) criteria for the avoidance of speech interference both outdoors and indoors; 3) criteria for the avoidance of sleep disturbance and 4) criteria for the avoidance of tones, ground-borne vibration and low-frequency noise impacts. Although existing ambient noise levels for some receivers may increase at times during LEC operation, the overall magnitude and spectral content of LEC noise is not expected to result in any significant community noise impact.”*

The Jessup Borough Council written decision and findings of fact and conclusions on the application for conditional use submitted by Lackawanna Energy Center, LLC, approved January 4, 2016, which incorporates by reference the conditions and safeguards from the Lackawanna Energy Center, LLC Conditional Use Permit Conditions and Safeguards document, states as Item 24: “For all the reasons stated herein and the substantial evidence of record, the Application for a Conditional Use Permit is deemed appropriate and the conditions imposed as a condition precedent to same are deemed reasonable and appropriate in order to protect the health, safety and welfare of the citizens of the Borough of Jessup.”

#### **14. Comment**

*General concern about the visual impacts of the facility. (Jeffrey Smith, John Mellow, Gerald Crinella)*

#### **Response**

In its response to public comments during the plan approval process, the Department discussed its consideration of local land use approval, including the conditional use permit. Visual impacts were addressed previously in the Department’s response to public comments submitted during the plan approval process. There, the Department stated:

Under Sections 10619.2 and 11105 of the Pennsylvania Municipalities Planning Code ("MPC"), 53 P.S. §§ 10619.2 and 11105, state agencies "shall consider and may rely upon comprehensive

plans and zoning ordinances when reviewing applications for... the permitting of ... facilities." The Department has interpreted this language to mean that it can deny an application, approve an application, suspend review of an application, or put a special condition on a permit when conflicts have been identified.

To provide guidance on how to exercise its discretion, the Department has developed a policy called the Policy for Consideration of Local Comprehensive Plans and Zoning Ordinances in DEP Review of Authorizations for Facilities and Infrastructure - Document No. 012-0200-001 ("Land Use Policy"). The Land Use Policy applies to certain Department approvals or authorizations, including major sources applying for PSD and nonattainment New Source Review permits, and discusses how the Department should rely upon comprehensive plans and zoning ordinances in reviewing applications. That reliance includes several options noted in the previous paragraph (i.e. approval, denial, suspension of review or issuance with conditions).

In this case, the Department determined that the Land Use Policy applied to Lackawanna Energy's plan approval application and it monitored Jessup Borough's local land use decisions concerning the proposed facility while the application was under review. On September 14, 2015, the Jessup Borough Council voted to amend its zoning ordinance to allow power plants to be located in the M1-A zoning district in which the Lackawanna Energy Center is proposed to be located. On October 15, 2015, Lackawanna Energy submitted a Conditional Use Permit Application asserting that the project is consistent with the requirements of the Borough of Jessup's zoning ordinance. On December 21, 2015, the conditional use permit was granted establishing conditions with which Lackawanna Energy must comply in order to retain its permit. Based on these decisions, the Department's understanding is that local land use approvals have been granted and there do not appear to be any issues under Sections 10619.2 and 11105 of the MPC.

In consideration of this comment regarding visual impacts from the facility, the Department referred to Lackawanna Energy's Conditional Use Permit with the Borough. Lackawanna Energy submitted a Conditional Use Permit Application, and a Conditional Use Permit was issued on December 21, 2015. That permit contains requirements that are designed to mitigate visual impacts from the facility and it includes requirements that Lackawanna Energy paint the exhaust stacks a heat resistant neutral color, so as to blend into the background to the extent reasonably practical, and to make outdoor lighting as unobtrusive as reasonably practical. Lighting, at a minimum, is required to be focused downward and shielded. The Conditional Use Permit also establishes a binding effect in which failure to abide by any term of condition may, after reasonable notice and opportunity to respond, may result in suspension or revocation of the Conditional Use Permit.

In addition, the plan approval application for Lackawanna Energy assessed primary environmental impacts including air emissions, noise, and visual impacts. The plan approval application states that no portions of the facility occupy or cross any nationally designated or recognized visual resources or visually sensitive areas, including scenic roads, trails, or rivers, and that trees and other geographic features will shield the facility from most viewpoints, and that where the facility is visible, primarily from points along Valley View Drive, Sunnyside Drive, and Highway 6, the relatively low profile structures and set back from the road will mitigate most of the visual impacts. The plan approval application also states that the clean straight lines of the facility structures will also blend in with the industrial/commercial nature of the surrounding activities, and that the primary feature will be the facility

stacks, which will be painted a lighter color to help blend in, as much as possible, with surrounding terrain.

Therefore, visual impacts were addressed to a lesser extent in the plan approval application and to a greater extent in the Conditional Use Permit application and in the Conditional Use permit issued by Jessup Borough.

## 15. Comment

*General concern about sulfur odors. (Michael Forte, Judy Quinlan)*

### Response

Sulfur dioxide from the facility is directly correlated to fuel use, as all sulfur dioxide emitted is derived from sulfur-bound fuel. The sulfur dioxide emissions are controlled using very low sulfur fuel. Increases in short-term sulfur dioxide emissions will not occur due to any startup or shutdown. Additionally, the facility is required to conduct monthly fuel sampling to determine the sulfur content of the fuel. The sulfur content of natural gas utilized at the facility is required to meet a limit of 0.4 gr/100scf which is more stringent than the limit of 0.5 gr/100 scf under the definition of “pipeline natural gas”, and within the limit of 20 gr/100 scf under the definitions of the terms “natural gas” and “very low sulfur fuel” in the regulations related to the Acid Rain Program in 40 CFR § 72.2. The Department does not expect sulfur odors from the facility to be an issue.

## 16. Comment

*Hazardous Air Pollutant (“HAP”) dispersion modeling should be conducted by Invenergy as part of the initial Title V Operating Permit review. (Dennis Peters)*

### Response

HAP dispersion concerns were addressed during the plan approval review and response to public comments.

In order to address HAP concerns related specifically to the emissions of formaldehyde, Lackawanna Energy performed modeling, utilizing U.S. EPA’s AERMOD air dispersion modeling system that was approved and utilized to evaluate possible National Ambient Air Quality Standard (NAAQS) impacts from the plant as part of the Plan Approval application. The modeling incorporated a number of site-specific inputs, including the use of actual meteorological data, actual terrain elevations for all ambient air receptors, incorporation of all buildings that influence dispersion, and modeling multiple stacks.

Utilizing the results from AERMOD in conjunction with the Department’s guidance for conducting an inhalation risk assessment<sup>2</sup>, the chronic cancer risk from formaldehyde was predicted to be 0.016 in

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<sup>2</sup> The Department has a guidance document, entitled Risk Assessment Guidelines for Facilities Burning Hazardous Waste, PADEP, 1993, that provides information on performing an inhalation risk assessment for pollutants of concern that is to be completed for facilities burning hazardous waste. While the Lackawanna Energy Center does not burn hazardous waste and an inhalation risk assessment was not required for the plan approval application, these guidelines were used in evaluating Formaldehyde emissions.



100,000, which is far below the target level of 1 in 100,000. The target level is designed to be insignificant compared to the national average lifetime incidence rate (40,000 in 100,000 based on the National Cancer Institute's 2010-2012 U.S. rates for incidence of all types of cancers)<sup>3</sup>. The Department's chronic risk target levels are based on all pollutants of concern, not just formaldehyde. However, formaldehyde represents the pollutant of concern with the highest inhalation risk, taking into account both the emission rate and toxicity. Therefore, inclusion of all pollutants of concern in the analysis would not appreciably change the predicted risk determination, which for formaldehyde is far below the risk target level.

#### **17. Comment**

*General concern about changes in emission limits. (Dennis Peters, Rella Scasselleti, Gerald Crinella)*

#### **Response**

All emission limits included in the operating permit, aside from the correction to the particulate matter emission limit in tpy for the fuel gas heater (as discussed in the response to Comment #1), are equally as stringent or more stringent than the emission limits included in the plan approval.

#### **18. Comment**

*Concern over lack of supplemental duct burner installation at the facility. (Dennis Peters, Rella Scasselleti)*

#### **Response**

After reviewing the plan approval application, no facility emission increases result from not installing and operating duct burners. The Plan Approval included a range of possible facility operating scenarios, including operation of the combustion turbines with and without duct burners, taking into account worst-case emissions for the evaluation.

Operation of the combustion turbines without duct burners resulted in lower short-term (lb/hr) and long-term (12-month rolling) emissions.

Hourly emission limits (lb/hr) within the Title V Operating Permit for NH<sub>3</sub>, SO<sub>2</sub>, H<sub>2</sub>SO<sub>4</sub>, total PM, total PM<sub>10</sub>/PM<sub>2.5</sub>, and VOCs have been reduced to reflect lower hourly emissions associated with operation of the combustion turbines operation without supplementary duct burners.

Additionally, operation of the combustion turbines without duct burners reduced the 12-month rolling sum limit of VOC emissions.

#### **19. Comment**

*Concern over climate change/greenhouse gas emissions. (John Mellow)*

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<sup>3</sup> National Cancer Institute, <http://seer.cancer.gov/statfacts/html/all.html> (accessed 11/17/2015).

## **Response**

Greenhouse gas emissions concerns were addressed during the plan approval review and response to public comments. The Title V Operating Permit contains emission limits for greenhouse gas emissions (GHG) measured as carbon dioxide equivalent (CO<sub>2</sub>e). Lackawanna Energy is required to meet all applicable conditions according to 40 CFR Part 98 for mandatory greenhouse gas reporting. GHG emissions from the combustion turbines are reduced by employing good combustion practices, oxidation catalysts, firing exclusive natural gas, and energy efficiency.

## **20. Comment**

*General concern that renewable energy options be reviewed as alternative to fossil fuel energy if the plant were to increase capacity in the future. (Anna Mae Stanley)*

### **Response:**

Alternative renewable energy options were addressed during the plan approval review and response to public comments. In accordance with 25 Pa. Code § 127.205(5), an analysis of alternative sites, sizes, production processes, and environmental control techniques for the facility is required, that demonstrates that the benefits of the proposed facility significantly outweigh the environmental and social costs imposed within the Commonwealth as a result of the facility's location, construction or modification.

In the plan approval application, Lackawanna Energy included a detailed discussion of alternative sites, alternative project sizes, alternative production processes, electric generating capacities, production processes (which included other fossil fuels as well as renewable energy sources), energy efficiency and conservation, and environmental control techniques for the facility in accordance with the requirement of 25 Pa. Code § 127.205(5). Any proposed facility modifications would be required demonstrate compliance with all applicable regulations.

## **FINAL DETERMINATION**

Pursuant to 25 Pa. Code Chapter 127, all comments submitted during the public hearing and public comment period have been reviewed and are appropriately addressed in this document. It is the Department's view that, after consideration of all comments received, the available information indicates that Lackawanna Energy can operate the electrical generation plant with associated control devices in Jessup Borough, Lackawanna County. The Facility shall be required to meet the emission limitations and the conditions set forth in their Title V Operating Permit, and it is required to comply with all applicable State and Federal air quality regulatory requirements.