WYALUSING ENERGY CENTER

PLAN APPROVAL APPLICATION

WYALUSING, PA

SUBMITTED BY:

KLONDIKE
Digital Infrastructure

KDI Wyalusing Power LLC
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SUBMITTED TO:

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Pennsylvania Department of Environmental Protection – Northcentral Regional Office
Bureau of Air Quality
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STRATEGY WITH SOLUTION.
PARTNERSHIP WITH A PURPOSE.

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1. INTRODUCTION

KDI Wyalusing Power LLC (KDI) is proposing to construct and operate the Wyalusing Energy Center, a natural gas power generation facility to be located in Wyalusing Township, Bradford County, Pennsylvania (Facility). The Applicant is an affiliate of New Fortress Energy, a global leader in energy infrastructure development and operations. The proposed Facility will consist of [redacted] simple cycle combustion turbines (CTs). The Facility will power an adjacent data center owned and operated by a third party.

1.1 APPLICATION

KDI is submitting this Plan Approval Application (PAA) to the Pennsylvania Department of Environmental Protection (PADEP or Department) in accordance with the Pennsylvania Air Pollution Control Act and 25 Pennsylvania Code (Pa. Code) Chapter 127 Subchapter B for a Plan Approval to construct a power generation facility (the Project).

1.2 GENERAL FACILITY DESCRIPTION

The Facility is located in Wyalusing Township, Bradford County, Pennsylvania. A Facility location map based on a United States Geological Survey (USGS) topographical map is provided as Figure 1-1.

The Facility is under the jurisdiction of the following State and Federal agencies:

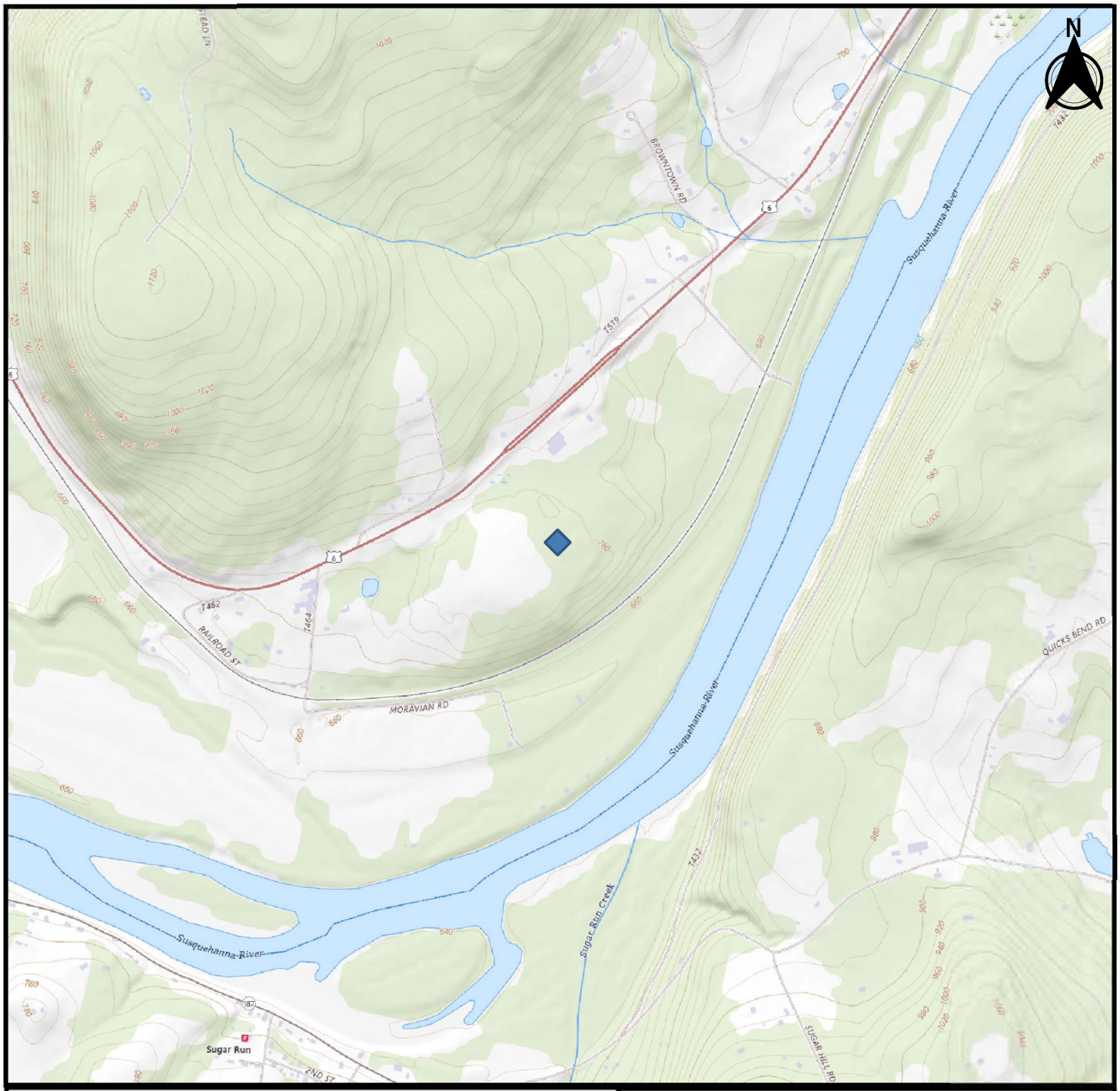
Pennsylvania Department of Environmental Protection – Bureau of Air Quality
Northcentral Regional Office
208 West Third Street, Suite 101
Williamsport, Pennsylvania 17707

United States Environmental Protection Agency – Region 3
1650 Arch Street
Philadelphia, PA 19103

1.3 CLAIM OF CONFIDENTIAL BUSINESS INFORMATION

Certain details provided in this submittal, including all attachments and enclosures, are confidential and could potentially cause harm to the competitive position of KDI if made available to the public. Specifically, KDI considers information related to equipment type (i.e., make and model), size (i.e., electric output), and capacity (i.e., heat input, hours of operation); process descriptions and diagrams; and operating plans to be proprietary and confidential. Pursuant to Section 13.2 of the Pennsylvania Air Pollution Control Act

and 40 CFR §2.208, KDI therefore asserts a business confidentiality claim with respect to such information presented herein. KDI has taken and will continue to take reasonable measures to protect the confidentiality of this information, which could not otherwise be obtained without the consent of KDI, and no statute specifically requires disclosure of this information. It is important for KDI that potential competitors do not know the size of the proposed units or the electric capacity generated, because that facility-specific information discloses the capacity of the power plant and size of the associated data centers. Therefore, KDI has provided PADEP with a copy of a Public Version of this submittal for public review and a Confidential Version of this submittal for PADEP technical review. In the Public Version, information that could allow competitors access to the confidential and sensitive information, either directly or by calculation, has been redacted.



Legend

Wyalusing Energy Center

0 500 1,000 m

Figure 1-1
Facility Location Map

KDI Wyalusing Power LLC
Wyalusing, PA 18853

DRAWN BY: S.H.	CHECKED BY: M.M.
DATE: December 2024	PROJ NO.: 005299-0002

ALL4

Topographic map courtesy of the United States Geological Survey.

2. PROJECT DESCRIPTION

The proposed Wyalusing Energy Center will consist of [redacted] self-contained combustion turbines. All turbines will operate in simple cycle mode, where the thermal energy from combustion of fuel is converted to mechanical energy, which drives an integral compressor and electric generator. There will be no supplementary waste heat recovery, which is a key characteristic of the simple cycle configuration. The turbines will use natural gas (transported by pipeline) exclusively. The proposed Facility will provide [redacted] onsite generation that will not be connected to the regional electric grid but will directly connect with third-party data centers that will be developed adjacent to the Facility. Behind the meter operation of electric generation for data center operations is a key element for selection of simple cycle turbine operation versus combined-cycle operation. The electric generation will be matched to the electrical demand of the data center. Combined-cycle operation would generate additional electricity from steam produced in a heat recovery steam generator (HRSG) extracting the heat from the exhaust gases and running a steam generator. Because the facility will not have a connection to the electric grid, exporting any surplus power generation would not be possible because it would overload and trip the facility's local electrical distribution system.

Each CT will be equipped with selective catalytic reduction (SCR) for nitrogen oxides (NO_X) control and oxidation catalysts for carbon monoxide (CO) and volatile organic compound (VOC) control. One aqueous ammonia tank will be installed to support SCR emissions control technology. The proposed Facility will also include a demineralized water treatment system (to support turbine air emissions control), and a water intake pump which will be powered by electric generators. The only source of air emissions outside of the natural gas turbines will be from a diesel-fired emergency firewater pump engine.

The final Facility design is still in progress, therefore control technology equipment make and model information is subject to change, however KDI will provide PADEP with final equipment selections as soon as possible. [redacted]

Figure 2-1
Process Flow Diagram

REDACTED

3. PROJECT EMISSIONS AND NEW SOURCE REVIEW APPLICABILITY

This section presents a summary of emissions associated with the Project, as well as a discussion of the applicability of New Source Review (NSR) regulations. The Project-wide emissions, discussed here and presented in Appendix E, are used as the basis for classification regarding applicable regulatory requirements evaluated in Section 4. An executive summary of the Project net emissions and the Prevention of Significant Deterioration (PSD) and NSR applicability is presented in Table 3-1.

3.1 PROJECT EMISSIONS

Potential emissions from the CTs and fire pump engine were developed using emissions data from SISU Energy and Environmental (SISU) for CT controlled emission guarantees, emissions factors obtained from the U.S. Environmental Protection Agency (U.S. EPA) *Compilation of Air Pollution Emission Factors* (AP-42), and emissions factors from accepted references.

The emissions units associated with the proposed Project are [redacted] CTs and one fire pump engine. The emissions that result from the combustion of natural gas from the CTs are based on data provided by SISU for NO_X, CO, VOC, particulate matter (PM), and carbon dioxide (CO_2) emissions. It is assumed that the PM emissions rates provided include both the filterable and condensable portions of PM. It is assumed that PM is equivalent to PM less than 10 microns in diameter (PM_{10}), which is also equivalent to PM less than 2.5 microns in diameter ($PM_{2.5}$). Emissions of sulfur dioxide (SO_2) and sulfuric acid mist (H_2SO_4) were derived from the maximum sulfur content of the natural gas. Emissions of lead (Pb) are based on an emissions factor from U.S. EPA AP-42 Chapter 1.4 (July 1998) for natural gas-firing. Emissions of methane (CH_4) and nitrous oxide (N_2O) are based on emissions factors from Title 40, Code of Federal Regulations (40 CFR) Part 98, Subpart C. Emissions of hazardous air pollutants (HAP), except for formaldehyde, are conservatively based on emissions factors from U.S. EPA AP-42 Chapter 3.1. Emissions of formaldehyde for natural gas-fired CTs are conservatively based on 40 CFR Part 63, Subpart YYYY, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary CTs.

For compliance purposes, KDI has provided the worst-case short-term emissions rate, per CT, based on the maximum emissions rate across all operating loads and ambient conditions. However, total annual emissions for all [redacted] CTs were based on CT operating conditions of 59°F at 99.5% load to be

representative of average annual climate conditions. The average temperature data for Wyalusing, PA was based on data obtained for Binghamton, NY, with an average annual temperature of 46°F, obtained from the Cornell Northeast Regional Climate Center[1]. Annual potential emissions for the [redacted] CTs conservatively include 365 startup events per year (i.e., one CT startup and corresponding shutdown per day), based on expected electric power demand and reliability requirements.

3.2 NEW SOURCE REVIEW APPLICABILITY

The Federal NSR program is comprised of two distinct permitting programs: PSD and Non-Attainment New Source Review (NNSR). The PSD regulations are designed to ensure that the air quality in current attainment areas does not significantly deteriorate beyond baseline concentration levels. PSD regulations specifically apply to the construction of major stationary sources in areas designated as attainment or unclassifiable with respect to the National Ambient Air Quality Standards (NAAQS) for each criteria pollutant[2] this is designated as in attainment or unclassifiable. NNSR regulations specifically apply to the construction of major stationary sources in areas designated as nonattainment with respect to the NAAQS for each criteria pollutant that is designated as nonattainment. Pennsylvania has adopted the PSD regulations (i.e., 40 CFR §52.21) in their entirety and incorporated them by reference in 25 Pa. Code Chapter 127 Subchapter D. Pennsylvania is a State Implementation Plan (SIP) approved state and has developed state-specific NNSR regulations at 25 Pa. Code Chapter 127, Subchapter E. Major NSR applicability is determined for the proposed Project following the requirements of 40 CFR §52.21 for PSD and 25 Pa. Code §127.203a for NNSR.

[1] Temperature data obtained from the Cornell Northeast Regional Climate Center (accessed December 19, 2024): https://www.nrcc.cornell.edu/wxstation/comparative/comparative.html#.

[2] Criteria air pollutants include the six common air pollutants, also known as "criteria air pollutants". These pollutants include ozone, particulate matter, carbon monoxide, lead, sulfur dioxide, and nitrous dioxide.

Table 3-1
Executive Summary of Project Emissions and NSR Applicability
KDI Wyalusing Power LLC - Wyalusing, PA

Source	PM	PM_{10}	$PM_{2.5}$	CO	VOC [a]	NO_X [a]	SO_2	Pb	Individual HAP [b]	Total HAP	CO_2e [c]
	(tpy)										
Combustion Turbines	83.33	83.33	83.33	85.08	36.58	67.58	12.05	-	2.32	5.07	1,012,417
Fire Water Pump Engine	0.02	0.02	0.02	0.25	0.01	0.20	3.79E-04	1.97E-06	2.58E-04	8.49E-04	35.79
Total Project Emissions	**83.34**	**83.35**	**83.35**	**85.33**	**36.59**	**67.78**	**12.05**	**1.97E-06**	**2.32**	**5.07**	**1,012,453**
PSD/NNSR Major Source Threshold	250	250	250	250	50	100	250	250	N/A	N/A	N/A
PSD/NNSR Major Source?	No	No	No	No	No	No	No	No	N/A	N/A	N/A
Title V Major Source Threshold	100	100	100	100	50	100	100	100	10	25	N/A
Title V Major Source?	No	No	No	No	No	No	No	No	No	No	N/A

[a] Major Source Threshold for the ozone transport region (OTR) pursuant to 25 Pa. Code §127.201(c).

[b] The individual HAP with the highest total project emissions is formaldehyde.

[c] Per the June 23, 2014, Supreme Court decision in Utility Air Regulatory Group v. U.S. EPA, U.S. EPA may not treat GHGs as an air pollutant for the specific purpose of determining whether a source is required to obtain a PSD or Title V Operating Permit.

3.2.1 PSD and NNSR Applicability Evaluation

The applicability of PSD under 40 CFR §52.21 is evaluated for proposed construction, reconstruction, and modification projects that result in an emission increase of a regulated criteria pollutant for which the area is in attainment with NAAQS. The Project is a new source located in an area of attainment for all regulated pollutants (see section 3.2 below for the special ozone status in Pennsylvania). The potential emissions for each of the criteria pollutants from the Project is below the 250 tons per year (tpy) threshold that triggers PSD applicability for a new source; therefore, PSD is not applicable.

The applicability of NNSR under 40 CFR §51.165 is evaluated for proposed construction, reconstruction, and modification projects that result in an emission increase of a criteria pollutant for which the area is not attaining the NAAQS. Bradford County, Pennsylvania has been designated as "in attainment" for all regulated NSR pollutants. However, because Pennsylvania is included in the northeast Ozone Transport Region (OTR), the entire state is considered as moderate non-attainment for ozone regardless of the county-specific NAAQS designation. Therefore, Bradford County, Pennsylvania, is considered a moderate ozone nonattainment area. The major source emission thresholds for a moderate nonattainment area are 100 tpy for NO_X and 50 tpy for VOC. The emissions regulated as ozone precursors are NO_X and VOC. NNSR applies to new major sources or major modifications at existing sources for pollutants. Emissions for NO_X and VOC for the Project are below 100 tpy and 50 tpy, respectively; therefore, NNSR does not apply to the Project.

4. REGULATORY ANALYSIS

KDI reviewed the Federal and Commonwealth of Pennsylvania air quality regulations to determine potentially applicable regulations for the Project.

4.1 FEDERAL AIR QUALITY REGULATIONS

For the purpose of this application, applicable Federal regulations are defined as:

- Standards of Performance for New Stationary Sources (NSPS)
- National Emission Standards for Hazardous Air Pollutants (NESHAP)
- Non-Attainment New Source Review (NNSR)
- Compliance Assurance Monitoring (CAM)
- Acid Rain Program (ARP)
- Risk Management Plan (RMP)
- Cross-State Air Pollution (CSAPR) Requirements

A discussion of each specific Federal requirement is provided in the following subsections.

4.1.1 Standards of Performance for New Stationary Sources

U.S. EPA has promulgated standards of performance for new, modified, or reconstructed sources of air pollution at 40 CFR Part 60 (i.e., NSPS). Potentially applicable NSPS are discussed in the following subsections as follows:

- 40 CFR Part 60, Subpart KKKK – Standards of Performance for Stationary Combustion Turbines
- 40 CFR Part 60, Subpart TTTT – Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units
- 40 CFR Part 60, Subpart TTTTa – Standards of Performance for Greenhouse Gas Emissions for Modified Coal-Fired Steam Electric Generating Units and New Construction and Reconstruction Stationary Combustion Turbine Electric Generating Units
- 40 CFR Part 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Note that there are no other NSPS that apply to the Project.

4.1.1.1 40 CFR Part 60, Subpart KKKK – Standards of Performance for Stationary Combustion Turbines

40 CFR Part 60, Subpart KKKK applies to owners or operators of a stationary CTs with a heat input at peak load equal to or greater than 10 million British thermal units per hour (MMBtu/hr) based on the higher heating value (HHV) and that commenced construction, modification, or reconstruction after February 18, 2005. Only the heat input rate to the CT is considered when determining 40 CFR Part 60, Subpart KKKK applicability. Because the construction of the CTs will commence after February 18, 2005, and the CTs will have a heat input at peak load equal to or greater than 10 MMBtu/hr based on the HHV of natural gas, 40 CFR Part 60, Subpart KKKK requirements will apply to the proposed stationary CTs.

The CTs will fire only clean, low-sulfur, pipeline quality natural gas. Emissions standards for NO_X and SO_2 will apply when the CT is operating. The proposed CTs must comply with the following emissions standards for a new turbine firing natural gas with a heat input at peak load of greater than 50 but less than or equal to 850 MMBtu/hr:

- 40 CFR §60.4320(a) and Table 1 – NO_X
  - 25 ppm at 15% oxygen (O_2), or
  - 1.2 pounds per megawatt hour (lb/MWh) of useful output
- 40 CFR §60.4330(a)(1) and (2) – SO_2
  - 0.90 lb/MWh gross output, and
  - 0.060 pounds per million British thermal units (lb/MMBtu) heat input

KDI will demonstrate compliance with 40 CFR Part 60, Subpart KKKK requirements via several methods. For NO_X emissions limits, KDI will operate the emissions control(s) that are determined to meet PADEP's Best Available Technology (BAT) requirements. A NO_X CEM will be used to monitor hourly NO_X emissions and additional CMS data (e.g., O_2, fuel flowmeter, steam flow, watt meter, etc.) will be collected to demonstrate compliance with the NO_X emissions standards. The use of natural gas to fire the CTs will ensure that the SO_2 emissions standard is met and KDI will use natural gas supplier data to document the sulfur content of the fuel. KDI will conduct the necessary initial and subsequent NO_X performance tests and submit the necessary reports required per 40 CFR Part 60, Subpart KKKK. It should be noted that the

proposed NO_X and SO_2 emissions limits for the CTs are less than the emissions limits specified at 40 CFR Part 60, Subpart KKKK.

4.1.1.2 40 CFR Part 60, Subpart TTTT – Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units

40 CFR Part 60, Subpart TTTT applies, with certain exceptions, to owners or operators of any steam generating unit, integrated gasification combined cycle (IGCC), or stationary CT that commenced construction after January 8, 2014 or commenced modification or reconstruction after June 18, 2014 and that have a base load rating greater than 250 MMBtu/hr and serves a generator capable of selling greater than 25 MW of electricity to a utility power distribution system. The proposed CTs will be exclusively used to generate electric power for adjacent data center operations. KDI will not be providing power to a utility power distribution system and will not be connected to the regional electric grid. Therefore, NSPS Subpart TTTT does not apply to the Project.

4.1.1.3 40 CFR Part 60, Subpart TTTTa – Standards of Performance for Greenhouse Gas Emissions for Modified coal-Fired Steam Electric Generating Units and New Construction and Reconstruction Stationary Combustion Turbine Electric Generating Units

The proposed CTs will be exclusively used to generate electric power for adjacent data center operations. KDI will not be providing power to a utility power distribution system and will not be connected to the regional electric grid. Therefore, NSPS Subpart TTTTa does not apply to the Project.

4.1.1.4 40 CFR Part 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

The requirements of 40 CFR Part 60, Subpart IIII apply to the owners and operators of stationary compression ignition (CI) internal combustion engines (ICE) that commence operation after July 11, 2005 and were manufactured after April 1, 2006 (for engines that are not fire water pump engines) and after July 1, 2006 (for fire water pump engines). 40 CFR Part 60, Subpart IIII will apply to the CI ICE that will drive the proposed 125 BHP diesel-fired fire water pump.

The emissions standards applicable to the engine driving the proposed fire water pump are presented at 40 CFR §60.4205(c), where owners and operators of fire water pump engines with a displacement of less than 30 liters per cylinder must comply with the emissions standards presented in 40 CFR Part 60, Subpart

IIII, Table 4. For a fire water pump of 2009 model year or later with a power rating greater than or equal to 75 kW (i.e., 100 BHP) but less than 130 kW (i.e., 175 BHP), the following emissions standards apply:

- 4.0 g/kW-hr of NMHC + NOx
- 5.0 g/kW-hr of CO
- 0.30 g/kW-hr of PM

Since October 1, 2010, 40 CFR §60.4207(b) requires that engines use compliant fuel in accordance with 40 CFR §80.510(b). Such fuel must have a maximum sulfur content of 15 parts per million (ppm) and have either a minimum cetane index of 40 or a maximum aromatic content of 35% by volume. The fire pump CI ICE that will be part of the Project will be newly purchased from the ICE manufacturer which means that compliance with the emissions limit of 40 CFR Part 60, Subpart IIII are initially certified by the manufacturer. Subsequently, KDI will demonstrate compliance with the emissions limits and requirements of 40 CFR Part 60, Subpart IIII by following the manufacturer's written instructions for operation of the CI ICE. KDI will only change those emission-related settings that are permitted to be changed based on the manufacturer's guidance. Additionally, KDI will only use ULSD to fire the fire water pump engine.

4.1.2 National Emission Standards for Hazardous Air Pollutants

U.S. EPA has also established NESHAP requirements under 40 CFR 63 that are applicable to specific categories of sources that have the potential to emit HAPs at levels greater than 10 tpy for any applicable HAP or 25 tpy for any combination of HAPs. The Project will not emit greater than 10 tpy of an individual HAP or greater than 25 tpy of total combined HAPs. Therefore, the Project is not subject to the NESHAP for Stationary Combustion Turbines (40 CFR Part 63, Subpart YYYY). However, KDI has elected to use the Subpart YYYY limit of 91 parts per billion (ppb) to conservatively quantify potential emissions of formaldehyde.

The Facility will meet the requirements of the NESHAP for Stationary Reciprocating Internal Combustion Engines (40 CFR Part 63, Subpart ZZZZ) by complying with the NSPS 40 CFR Part 60, Subpart IIII in accordance with 40 CFR §63.6590(c)(1).

4.1.3 Non-Attainment New Source Review

The applicability of NNSR under 40 CFR Part 51.165 is evaluated for proposed construction, reconstruction, and modification projects that result in an emission increase of a criteria pollutant for which the area is not attaining the NAAQS. Bradford County, Pennsylvania has been designated as "in attainment" for all regulated NSR pollutants. However, because Pennsylvania is included in the northeast Ozone Transport Region (OTR), the entire state is considered as moderate non-attainment for ozone regardless of the county-specific NAAQS designation. Therefore, Bradford County, Pennsylvania, is considered a moderate ozone nonattainment area. The major source emission thresholds for a moderate nonattainment area are 100 tpy for NO_X and 50 tpy for VOCs. The emissions regulated as ozone precursors are NO_X and VOC. NNSR applies to new major sources or major modifications at existing sources for pollutants. Emissions for NO_X and VOC for the Project are below 100 tpy and 50 tpy, respectively; therefore, NNSR does not apply to the Project.

4.1.4 Compliance Assurance Monitoring

The applicability of Compliance Assurance Monitoring under 40 CFR Part 64 was reviewed and the Facility is not subject to the requirements as they are not a major source of pollutants.

4.1.5 Acid Rain Program

The combustion turbines at the Facility are new units but are not subject to the Federal Acid Rain Program under 40 CFR 40 CFR Part 72.6(b)(8) because they are non-utility units.

4.1.6 Risk Management Plan

The Facility reviewed the Federal Risk Management Program under 40 CFR Part 68.150-195 as the Project will store 19% aqueous ammonia. The Project will have a 22,000-gallon tank for storage of 19% aqueous ammonia (NH_3) for use in the SCR system. The RMP Rule, promulgated at 40 CFR Part 68, implements Section 112(r) of the CAAA of 1990 and establishes guidance for chemical accident prevention at facilities using, storing, manufacturing, or handling extremely hazardous substances. The RMP Rule includes a “List of Regulated Substances” including their synonyms and threshold quantities to help assess if a process is

subject to the RMP Rule or the *General Duty Clause* of CAA Section 112(r). Aqueous ammonia, which will be used by the SCR system for NO_X emissions control, is a Regulated Substance under Section 112(r). The threshold quantity in the RMP Rule List of Regulated Substances pursuant to 40 CFR §68.130 for aqueous ammonia is 20,000 pounds with a concentration 20% or greater. Because aqueous ammonia will be stored on-site in one storage tank with a capacity of 20,000 gallons with a concentration of less than 20% by weight, the concentration applicability criteria will not be met, and the provisions of 40 CFR Part 68 will not apply.

4.1.7 Cross-State Air Pollution (CSAPR) Requirements

The proposed CTs do not meet the applicability requirements of CSAPR codified in 40 CFR Part 97, Subparts AAAAA and BBBBB [relating to the Transport Rule (TR) NO_X Annual Trading Program and TR NO_X Ozone Season Group 1 Trading Program] and 40 CFR Part 97, Subpart CCCCC (as it relates to TR SO_2 Group 1 Trading Program). In accordance with 40 CFR 97.404, because the proposed CTs will not serve, at any time, a generator with nameplate capacity of 25 MWe producing electricity for sale, they are not CSAPR NO_X Annual units and not subject to this rule.

4.2 COMMONWEALTH OF PENNSYLVANIA REQUIREMENTS

Sources at the Facility are subject to the following Commonwealth of Pennsylvania air quality regulations, which are codified in Title 25 – Environmental Protection of the Pennsylvania Code:

- Chapter 122 – National Standards of Performance for New Stationary Sources
- Chapter 123 – Standards for Contaminants
- Chapter 124 – National Emission Standards for Hazardous Air Pollutants
- Chapter 127 – Construction, Modification, Reactivation, and Operation of Sources
- Chapter 129 – Standards for Sources
- Chapter 145 – Interstate Pollution Transport Reduction

A discussion of each specific State requirement is provided in the following subsections.

4.2.1 Chapter 122 – National Standards of Performance for New Stationary Sources

The Federal Standards of Performance for New Stationary Sources are adopted in their entirety by reference at 25 Pa. Code §122.3 and are discussed in detail above under the Federal requirements

4.2.2 Chapter 123 – Standards for Contaminants

Standards for PM emissions are addressed in 25 Pa. Code §§123.11-123.14. The proposed CTs are considered process sources under the Commonwealth of Pennsylvania air quality regulations and are only subject to 25 Pa. Code §123.13. In accordance with 25 Pa. Code §123.13(c)(1)(i) and (ii), the CTs will be limited to PM emissions less than 0.04 grains per dry standard cubic foot (gr/DSCF) when the effluent gas volume is less than 150,000 DSCF per minute (DSCFM) or less than 0.03 gr/DSCF when the effluent gas volume is greater than 150,000 DSCFM but less than 300,000 DSCFM.

In accordance with the sulfur compounds limitations under 25 Pa. Code §123.21, KDI will not permit the emissions of sulfur oxides in the effluent gases to exceed 500 ppmvd. In accordance with the odor limitations under 25 Pa. Code §123.31, KDI will not permit the emission into the outdoor atmosphere of any malodorous air contaminants from any source in such a manner that the malodors are detectable outside the property.

In accordance with the visible emissions regulation at 25 Pa. Code §123.41, KDI will not permit visible emissions into the outdoor atmosphere in such a manner that the opacity is equal to or greater than 20% for a period aggregating more than three minutes in any one hour or equal to or greater than 60% at any one time. No visible emissions are expected from the CTs.

4.2.3 Chapter 124 – National Emission Standards for Hazardous Air Pollutants

The Federal National Emission Standards for Hazardous Air Pollutants are adopted in their entirety by reference at 25 Pa. Code §124.3 and are discussed in detail under the Federal requirements.

4.2.4 Chapter 127 – Construction, Modification, Reactivation, and Operation of Sources

The following sections of 25 Pa. Code Chapter 127 are applicable to the Facility.

4.2.4.1 Subchapter B – Plan Approval Requirements

Any proposed new air contamination source that is not otherwise exempt from the requirements to obtain a Plan Approval and/or Operating Permit under the provisions of 25 Pa. Code §127.12 requires the Facility to obtain a Plan Approval from PADEP prior to initiating the proposed change(s). A PAA must meet the content requirements of 25 Pa. Code §127.12 and include a Compliance Review Form (CRF) in accordance with 25 Pa. Code §127.12a. KDI has completed the appropriate PADEP PAA forms which are included as Appendix A of this PAA. In addition, PAAs for new sources are required to address the Best Available Technology (BAT) requirements of 25 Pa. Code §127.12(a)(5).

4.2.4.2 Subchapter D – Prevention of Significant Deterioration of Air Quality

Pennsylvania incorporates the Federal PSD regulations by reference at 25 Pa. Code §127.83. A discussion of PSD applicability with respect to the proposed CTs is discussed in Section 3.2.1 of this PAA.

4.2.4.3 Subchapter E – Nonattainment New Source Review

The applicability of NNSR under 40 CFR §51.165 is evaluated for proposed construction, reconstruction, and modification projects that result in an emission increase of a criteria pollutant for which the area is not attaining the NAAQS. Bradford County, Pennsylvania has been designated as "in attainment" for all regulated NSR pollutants. However, because Pennsylvania is included in the northeast Ozone Transport Region (OTR), the entire state is considered as moderate non-attainment for ozone regardless of the county-specific NAAQS designation. Therefore, Bradford County, Pennsylvania, is considered a moderate nonattainment area for ozone. The major source emission thresholds for a moderate nonattainment area are 100 tpy for NO_X and 50 tpy for VOCs. The emissions regulated as ozone precursors are NO_X and VOC. NNSR applies to new major sources or major modifications at existing sources for pollutants. Emissions

for NO_X and VOC for the Project are below 100 tpy and 50 tpy, respectively; therefore, NNSR does not apply to the Project.

4.2.4.4 Subchapter G – Title V Operating Permits

As previously stated, the Facility is not a major source with regard to the TVOP permitting program.

4.2.4.5 Subchapter I – Plan Approval and Operating Permit Fees

25 Pa. Code §127.702 specifies the fees required to submit Plan Approval Applications. The Plan Approval application fee is $7,500 in accordance with 25 Pa. Code §127.702(b)(2). The Facility previously submitted a PAA for the Wyalusing Energy Center that was withdrawn prior to this PAA submittal. KDI previously submitted a fee of $2,500 that will be applied to this new submittal.

4.2.5 Chapter 129 – Standards for Sources

The following sections discuss the applicability of 25 Pa. Code Chapter 129.

4.2.5.1 25 Pa. Code §§129.111-129.115 – Pennsylvania RACT III

The Reasonably Available Control Technology (RACT) III requirements became effective on January 1, 2023, and apply to major stationary sources of NO_X or VOC that commenced operation prior to August 3, 2018. Therefore, the Facility is not subject to the rule.

4.2.5.2 25 Pa. Code §§129.201-129.205 – Additional NO_X Requirements

The Facility is not located in Bucks, Chester, Delaware, Montgomery, or Philadelphia Counties; therefore, the requirements do not apply.

4.2.6 Chapter 145 – Interstate Pollution Transport Reduction

25 Pa. Code Chapter 145 establishes the Interstate Pollution Transport Reduction rule NOx Budget Trading Program as a means of mitigating the interstate transport of ozone and nitrogen oxides, an ozone precursor. In accordance with 25 Pa. Code 145.4(a)(2)(iii)(A), the proposed CTs will have a maximum design heat input greater than 250 MMBtu/hr but will not serve a generator producing electricity for sale. Therefore, the proposed CTs are considered to be NO_X budget units subject to this rule under the applicability requirements provided in 25 Pa. Code Chapter 145, Subchapter A, §145.4(a)(2)(iii)(A) and §145.8(d), for nonelectric generating units. The proposed combustion turbines are not subject to the CAIR NO_X Ozone Season Trading Program requirements of Subchapter D (i.e., §§145.201-145.223). The CTs will be equipped with 40 CFR Part 75 continuous emissions monitoring systems (CEMS). The Facility will be required to register the CTs and report actual emissions under 40 CFR Part 75.

5. BEST AVAILABLE TECHNOLOGY

The Project is required to control air emissions to the maximum extent from the [redacted] combustion turbines through the installation of the BAT. Per 25 Pa. 121.1, BAT is defined as equipment, devices, method, or techniques that will prevent, reduce, or control emissions of air contaminants to the maximum degree possible and which are available or may be made available. The Project is only subject to PADEP BAT and is not subject to U.S. EPA best available control technology (BACT) or lowest achievable emission rate (LAER) because it is a minor source for all pollutants. PADEP does not explicitly define a process for conducting a BAT analysis, but case-by-case BACT procedures are typically used to fulfill BAT.

In addition to reviewing the results of recently permitted facilities and the U.S.EPA Reasonably Available Control Technology (RACT)/BACT/LAER Clearinghouse (RBLC) database, KDI has also reviewed PADEP's technical support document (TSD) for General Plan Approval and its General Operating Permit for Natural Gas Compression Stations, Processing Plants, and Transmission Stations (GP-5) because the general guidelines and sources within the TSD provide a starting point to identifying appropriate limits for the proposed combustion turbines.

5.1 NO_X BAT ANALYSIS FOR COMBUSTION TURBINES

Operation of simple cycle combustion turbines to generate electricity is the process for which BAT is to be determined. In the combustion process, NO_X is formed during the combustion of fuel and is generally classified as either thermal NO_X or fuel-related NO_X. Thermal NO_X is produced at very high temperatures by the reaction of atmospheric oxygen and nitrogen and is heavily influenced by combustion temperature. Fuel NO_X results from oxidation of nitrogen contained in the fuel. Fuel-related NO_X from natural gas combustion is generally minimal; therefore, NO_X formation from natural gas combustion is primarily thermal NO_X.

Reduction in thermal NO_X can be achieved using combustion controls, and flue gas treatment can further reduce it. As such, strategies for the control of NO_X are categorized as combustion control and post-combustion control strategies.

Available combustion controls include water or steam injection and use of low emission combustors. Many modern combustion turbines utilize dry low-NO_X (DLN) combustors for natural gas firing where natural gas and air are pre-mixed prior to combustion. DLN combustors are designed to operate below the stoichiometric air-to-fuel ratio, thereby reducing thermal NO_X formation by reducing peak flame temperatures. SCR is the most commonly used post combustion control method.

Available control methods listed in the TSD to reduce NO_X from combustion sources include the following:

- Good combustion practices: Maintain optimal combustion efficiency, maintenance procedures, and following manufacturers guidelines.
- Water or Steam injection: Water or steam injection has been historically used for front-end control of both gas- and oil-fired turbines. Water injection is used in combustion turbines during firing of both natural gas and ultra-low-sulfur diesel (ULSD).
- Dry Controls: Dry low-NO_X (DLN) combustors are also an example of a front-end NO_X control technology. The combustors limit peak flame temperature and excess oxygen with lean, pre-mix flames that achieve NO_X control equal to or better than water or steam injection. Some vendors offer this control technology on advanced heavy-duty industrial units.
- Selective non-catalytic reduction (SNCR): SNCR technology uses ammonia or urea as a reagent that is injected into the hot exhaust gases. SNCR is widely used as a retrofit technology for steam-generating boilers but has never been applied to control NO_X emissions from simple cycle combustion turbines.
- SCR: SCR technology uses ammonia or urea as a reagent as does SNCR. However, SCR injects the reagent into the flue gas stream, and then the flue gas passes through a catalyst bed where the NO_X is reduced to nitrogen and water. SCR has been in widespread use on combustion turbines for many years. SCR is widely recognized as the most stringent available control technology for NO_X emissions control for combustion sources, including combustion turbines.

KDI is proposing to install water injection and SCR on the proposed CTs. SCR is considered the top, most effective NOX control technology for CTs of this size. DLN burners and SNCR were not considered because they have typically not been utilized on simple cycle natural gas fired-combustion turbines.

The NO_X BAT proposed by KDI for the proposed combustion turbines is a combination of pre-combustion control, which includes application of good combustion practices, and the use of post- combustion control, which includes water injection and SCR. Use of this combination meets the applicable limits under

NSPS Subpart KKKK and is consistent with the strategies applied in similar projects. The application of good combustion practices will reduce NO_X emissions to less than 30 ppmvd at 15% O_2. The application of water injection and SCR post combustion will further reduce the total NO_X emissions to less than 3 ppmvd at 15% O_2.

5.2 CO AND VOC BAT ANALYSIS FOR COMBUSTION TURBINES

Operation of simple cycle combustion turbines to generate electricity is the process for which BAT is to be determined. In a simple cycle combustion process, CO and VOC are formed during the incomplete combustion of fuel. Reduction in CO emissions and VOC formation can be achieved using good combustion practices and post combustion controls.

Available control methods listed in the TSD to reduce VOC from combustion sources include the following. These control methods are consistent with those implemented at similar facilities as indicated by the air permits located during the case-by-case search of the RBLC database:

- Good combustion practices: Maintain optimal combustion efficiency, maintenance procedures, and following manufacturers guidelines.
- Oxidation Catalyst: Oxidation catalysts are primarily used to control CO and VOC emissions from combustion turbines. The catalysts usually are made of precious metal which oxidize emissions through a series of chemical reactions that occur on the surface of the catalyst material. Exhaust gases, including but not limited to CO and VOC, are introduced to the catalyst bed, which converts the CO and VOC to carbon dioxide and water before exiting the catalyst bed.

KDI proposes to apply both TSD-recommended control methods application of good combustion practices and use of an oxidation catalyst on the proposed combustion turbines. The CO and VOC BAT proposed for the proposed combustion turbines is a combination of pre-combustion control which includes application of good combustion practices and the use of an oxidation catalyst. Use of this combination is consistent with the strategies applied in prior, similar projects. The application of good combustion practices will reduce CO emissions to 60.60 ppmvd at 15% O_2 and VOC to 2.43 ppmvd at 15% O_2 (expressed as propane). The addition of the oxidation catalyst post-combustion control will provide an additional 90% control,

reducing the total CO emissions to 5.0 ppmvd at 15% O_2 and VOC to 1.32 ppmvd at 15% O_2 (expressed as propane) for operating conditions representative of average annual climate conditions at the Facility.

5.3 PM / PM_{10} / $PM_{2.5}$ BAT ANALYSIS FOR COMBUSTION TURBINES

In a simple cycle combustion process, PM is produced in various forms from the combustion of natural gas. PM is produced by incomplete combustion, thermal decomposition of methane resulting in carbon that condenses into soot, sulfates from sulfur in the natural gas that condenses into particles and secondary particle formation of organic aerosols and nitrates. For the Project, PM emissions from the combustion turbines are considered equivalent to emissions of PM_{10} and $PM_{2.5}$. Emissions of $PM_{2.5}$, PM_{10}, and PM are assumed to include both the filterable and condensable portion of PM. Reduction of PM can be achieved by optimizing combustion of the natural gas fuel, secondary physical controls such as filters and fuel treatment.

Available control methods listed in the TSD to reduce PM/PM_{10}/$PM_{2.5}$ from combustion sources include the following. This control method is consistent with that implemented at similar facilities as indicated by the air permits located during the case-by-case search of the RBLC database:

- Good combustion practices: Maintain optimal combustion efficiency, maintenance procedures, and following manufacturers guidelines.

KDI proposes to apply the TSD-recommended control method of precombustion control which includes application of good combustion practice. The proposed CTs will exclusively fire natural gas fuel, which is inherently low in sulfur content.

The PM BAT proposed for the Project is the pre-combustion control method of application of good combustion practices and the exclusive use of natural gas. The application of good combustion practices will reduce PM to 3.0 pounds per hour (lb/hr) which equates to 0.012 lb/MMBtu.

5.4 GHG BAT ANALYSIS FOR COMBUSTION TURBINES

Although there are six regulated greenhouse gases (GHGs): CO_2, CH_4, nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6),[3] GHG emissions emitted from stationary combustion sources typically consist of CO_2, CH_4, and N_2O. Emissions of GHG pollutants are converted to a carbon dioxide equivalent (CO_2e) basis using their individual global warming potentials (GWPs)[4] for comparative purposes. CO_2 and N_2O are produced in the CTs when firing natural gas. The carbon in the fuel is converted to CO_2 during combustion. N_2O formation is complex and depends on many factors, but it can be limited when combustion temperatures are kept high and excess air is kept low. Emissions of CH_4 from the CTS are caused by unburned fuel when firing natural gas. CH_4 emissions are highest during conditions of low-temperature combustion or incomplete combustion. Such conditions typically occur during the startup or shut down cycle for turbines.

KDI has employed SCR, DLN, and good combustion practices for NO_X emissions reduction and an oxidation catalyst for control of CO and VOC. An SCR system may increase emissions of N_2O because of exhaust conditions and the type of catalyst selected. Likewise, an oxidation catalyst may slightly increase emissions of CO_2 from the oxidation of CO and CH_4 in the exhaust gas. While slight increases in CO_2 may occur from the oxidation catalyst, these emissions are accounted for in the total GHG emissions. Although elimination of these controls could conceivably be considered as an option within the GHG BAT, the environmental benefits of controlling NO_X, CO, and VOC emissions are assumed to outweigh the marginal increase to GHG emissions. Therefore, omission of these controls within the GHG BAT analysis was not considered.

U.S. EPA, through various guidance documents, indicates that inherently lower-polluting processes are appropriate for consideration as available control alternatives. In guidance documents, U.S. EPA recommends several different ways to incorporate energy efficiency (good combustion practices) into a project including, but not limited to installing an efficient CT, employing a maintenance program, or using low-carbon fuels. The CTs are fired exclusively by pipeline-quality natural gas, which is the fossil fuel with the lowest carbon content. Having a lower carbon content fuel means that there is less carbon available to convert to CO and CO_2 during combustion, inherently reducing GHG emissions.

[3]U.S. EPA Greenhouse Gas Emission Reductions. http://www2.epa.gov/greeningepa/greenhouse-gases-epa
[4] U.S. EPA Glossary of Climate Change Terms. http://www.epa.gov/climatechange/glossary.html

The proposed CTs are highly efficient, and the implementation of a maintenance program will not only retain the energy efficiency of the units but also help ensure minimized GHG emissions. The Facility will employ periodic CT maintenance and tuning; install instrumentation and controls to monitor and optimize air flow and fuel combustion; and follow an inspection routine to identify leaks from valves, flanges, and piping.

Combustion efficiency is related to the three "T's" of combustion: Time, Temperature, and Turbulence. These components of combustion efficiency are designed into the CTs to maximize fuel efficiency and reduce operating costs. Therefore, combustion control is accomplished primarily through unit design and operation.

U.S. EPA classifies carbon capture and sequestration (CCS) as an add-on pollution control technology that is "available" for facilities emitting CO_2, including fossil fuel-fired power plants, and for industrial facilities with high-purity CO_2 streams.[5] U.S. EPA estimates CCS can reduce GHG emissions from power plants by approximately 80 to 90%.[6] CCS is an approach used to capture the CO_2 emissions from facilities, where CO_2 is then stored. Capture technologies include pre-combustion carbon capture and post-combustion carbon capture. Pre-combustion carbon capture for combustion sources involves substituting pure oxygen for air in the combustion process, resulting in a concentrated CO_2 exhaust stream so it may be captured more effectively. The oxygen may be isolated from air using cryogenic separation and membrane separation. Post-combustion carbon capture for combustion sources is applied to conventional combustion techniques using air and carbon-containing fuels to isolate CO_2 from the combustion exhaust gases. Post-combustion capture using solvent scrubbing, typically using monoethanolamine (MEA) as the solvent, is a commercially mature technology.[7] There are a few methods and processes that could be used to capture CO_2 from the dilute exhaust gases produced by new combustion units. These capture technologies include separation with solvent or physical filters, cryogenic separation to condense the CO_2, and membrane separation technologies.

[5] United States Environmental Protection Agency. PSD and Title V Permitting Guidance for Greenhouse Gases. http://www3.epa.gov/nsr/ghgdocs/ghgpermittingguidance.pdf

[6] United States Environmental Protection Agency, Carbon Dioxide Capture and Sequestration at http://www.epa.gov/climatechange/ccs/ and Center for Climate and Energy Solutions, Carbon Capture and Storage Quick Facts. http://www.c2es.org/technology/factsheet/CCS

[7] United States Environmental Protection Agency. Available and Emerging Technologies for Reducing Greenhouse Gas Emissions from the Petroleum Refining Industry. October 2010. http://www3.epa.gov/nsr/ghgdocs/refineries.pdf

To provide effective reduction of CO_2 emissions, efficient methods of compression and transporting the CO_2 to a suitable geological storage formation are required. CO_2 sequestration generally relies upon a third-party CO_2 pipeline system to transport the CO_2. Pipelines are the most common and theoretically feasible method for transporting large quantities of CO_2. However, constructing such a pipeline for dedicated use by a single facility often will make a project economically infeasible. CCS is still an emerging technology in the power sector, where it has not yet been demonstrated on a large scale. Applying CCS to full-size power plants requires scale-up of commercially available CO_2 capture processes. Therefore, current cost and performance information related to CCS from power generation needs to be evaluated.

Creating the infrastructure to allow for the compression, transport and storage of CO_2 emissions would far exceed the cost of the installation of CCS. While CCS may be theoretically feasible in reducing atmospheric emissions of CO_2 after formation, without this necessary transportation and sequestration infrastructure, CCS is too difficult and costly to be practical. A pre-existing pipeline infrastructure is not near the Project, installing a pipeline to accommodate an injection site near the Project is considered impractical. The effort required to construct miles of pipeline through regions in the eastern U.S., in addition to uncertainties associated with acquiring land access needed for pipeline construction, is considered impractical for the Project. Also, pipeline transportation requires very high pressures with high compressor energy requirements and H_2O removal from CO_2 pipelines. The CO_2 pipeline infrastructure requires routine monitoring for leaks, and protection from overpressure, especially in highly populated areas. Therefore, CCS is not considered available for the Project.

KDI proposes the use of an oxidation catalyst in conjunction with implementing energy efficient and inherently lower-emitting processes, work practices, and design for the CTs as GHG BAT for the Project.

APPENDIX A -
GENERAL INFORMATION FORM

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CENTER FOR ENVIRONMENTAL EXCELLENCE

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This form is used by the Department of Environmental Protection (DEP) to inform our programs regarding what other DEP permits or authorizations may be needed for the proposed project or activity. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the DEP.

Related ID#s (If Known)				DEP USE ONLY
Client ID#		APS ID#		Date Received & General Notes
Site ID#		Auth ID#		
Facility ID#				

CLIENT INFORMATION

DEP Client ID#	Client Type/Code	Dun & Bradstreet ID#
To Be Determined (TBD)	*LLC*	*Not Applicable (N/A)*

Legal Organization Name or Registered Fictitious Name	Employer ID# (EIN)	Is the EIN a SSN?
KDI Wyalusing Power LLC	*33-2410502*	☐ Yes ☒ No

State of Incorporation or Registration of Fictious Name
Delaware

☐ Corporation ☒ LLC ☐ Partnership ☐ LLP ☐ LP
☐ Sole Proprietorship ☐ Association/Organization
☐ Estate/Trust ☐ Other

Individual Last Name	First Name	MI	Suffix
N/A			

Additional Individual Last Name	First Name	MI	Suffix
N/A			

Mailing Address Line 1	Mailing Address Line 2
111 W 19th Street	*8th Floor*

Address Last Line – City	State	ZIP+4	Country
New York	*NY*	*10011*	*USA*

Client Contact Last Name	First Name	MI	Suffix
Raggio	*Debra*	*L.*	*N/A*

Client Contact Title	Phone	Ext	Cell Phone
Executive Vice President, Head of Regulatory	*703-778-0842*	*N/A*	*N/A*

Email Address	FAX
draggio@newfortressenergy.com	*N/A*

SITE INFORMATION

DEP Site ID#	Site Name
TBD	*Wyalusing Energy Center*

EPA ID# *TBD* **Estimated Number of Employees to be Present at Site** *~50*

Description of Site

Proposed installation of [redacted] ***self-contained combustion turbines generating power for a proposed data center to be operated by a third party.***

Tax Parcel ID(s): *6111500082000000*

County Name(s)	Municipality(ies)	City	Boro	Twp	State
Bradford	*Wyalusing*	☐	☐	☒	*PA*

Site Location Line 1	Site Location Line 2
44074 Route 6	

Site Location Last Line – City	State	ZIP+4
Wyalusing	*PA*	*18853*

Detailed Written Directions to Site

Via PA-29 northbound turn left onto US-6 W. After approximately 23 miles, the site will be on the left.

Site Contact Last Name	First Name	MI	Suffix
Raggio	*Debra*	*L*	*N/A*

Site Contact Title	Site Contact Firm
Executive Vice President, Head of Regulatory	*Klondike Digital Infrastructure LLC*

Mailing Address Line 1	Mailing Address Line 2
111 W 19th Street	*8th Floor*

Mailing Address Last Line – City	State	ZIP+4
New York	*NY*	*10011*

Phone	Ext	FAX	Email Address
703-778-0841	*N/A*	*N/A*	*draggio@newfortressenergy.com*

NAICS Codes (Two- & Three-Digit Codes – List All That Apply) **6-Digit Code** (Optional)

221112

Client to Site Relationship

OWNOP

FACILITY INFORMATION

Modification of Existing Facility	Yes	No
1. Will this project modify an existing facility, system, or activity?	☐	☒
2. Will this project involve an addition to an existing facility, system, or activity?	☐	☒

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

	Facility Type	DEP Fac ID#		Facility Type	DEP Fac ID#
☐	Air Emission Plant		☐	Industrial Minerals Mining Operation	
☐	Beneficial Use (water)		☐	Laboratory Location	
☐	Blasting Operation		☐	Land Recycling Cleanup Location	
☐	Captive Hazardous Waste Operation		☐	Mine Drainage Treatment / Land Recycling Project Location	
☐	Coal Ash Beneficial Use Operation		☐	Municipal Waste Operation	
☐	Coal Mining Operation		☐	Oil & Gas Encroachment Location	
☐	Coal Pillar Location		☐	Oil & Gas Location	
☐	Commercial Hazardous Waste Operation		☐	Oil & Gas Water Poll Control Facility	
☐	Dam Location		☐	Public Water Supply System	
☐	Deep Mine Safety Operation -Anthracite		☐	Radiation Facility	
☐	Deep Mine Safety Operation -Bituminous		☐	Residual Waste Operation	
☐	Deep Mine Safety Operation -Ind Minerals		☐	Storage Tank Location	
☐	Encroachment Location (water, wetland)		☐	Water Pollution Control Facility	
☐	Erosion & Sediment Control Facility		☐	Water Resource	
☐	Explosive Storage Location		☐	Other:	

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Plant Entrance	***41***	***39***	***28.5***	***76***	***13***	***53.7***

Horizontal Accuracy Measure	Feet	***N/A***	*--or--*	Meters	***N/A***	
Horizontal Reference Datum Code	☐	North American Datum of 1927				
	☐	North American Datum of 1983				
	☒	World Geodetic System of 1984				
Horizontal Collection Method Code	***ITPMP***					
Reference Point Code	***ENTGN***					
Altitude	Feet	***766***	*--or--*	Meters	***N/A***	
Altitude Datum Name	☐	The National Geodetic Vertical Datum of 1929				
	☐	The North American Vertical Datum of 1988 (NAVD88)				
Altitude (Vertical) Location Datum Collection Method Code	***TOPO***					
Geometric Type Code	***POINT***					
Data Collection Date	***12/4/2024***					
Source Map Scale Number	***N/A***	Inch(es)	=	***N/A***	Feet	
--or--	***N/A***	Centimeter(s)	=	***N/A***	Meters	

PROJECT INFORMATION

Project Name

Wyalusing Energy Center

Project Description

Proposed installation of [redacted] natural gas-fired [redacted] self-contained combustion turbines to generate power for a proposed data center to be operated by a third party.

Project Consultant Last Name	First Name	MI	Suffix
McGlynn	***Merritt***	***N/A***	***N/A***

Project Consultant Title	Consulting Firm
Senior Managing Consultant	***ALL4 LLC***

Mailing Address Line 1	Mailing Address Line 2
2393 Kimberton Road	***P.O. Box 299***

Address Last Line – City	State	ZIP+4
Kimberton	***PA***	***19442***

Phone	Ext	FAX	Email Address
610-422-1133	***N/A***	***N/A***	***mmcglynn@all4inc.com***

Time Schedules	Project Milestone (Optional)
Commence Construction	[redacted]
Complete Construction	[redacted]
Commence Operation	[redacted]

1. Is the project located in or within a 0.5-**mile radius of an Environmental Justice community as defined by DEP?** ☐ Yes ☒ No

To determine if the project is located in or within a 0.5-mile radius of an environmental justice community, please use the online PennEnviroScreen tool. To see specific EJ areas, select the appropriate year of your submittal from the themes box on the right.

2. Have you informed the surrounding community prior to submitting the application to the Department? ☒ Yes ☐ No

Method of notification: ***Notification letter to township and county representatives***

3. **Have you addressed community concerns that were identified?** ☐ Yes ☐ No ☒ N/A

If no, please briefly describe the community concerns that have been expressed and not addressed.

4. **Is your project funded by state or federal grants?** ☐ Yes ☒ No

Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.

Aspect of Project Related to Grant

Grant Source: _____

Grant Contact Person: _____

Grant Expiration Date: _____

5. **Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions)** ☒ Yes ☐ No

Note: If "No" to Question 5, the application is not subject to the Land Use Policy.

If "Yes" to Question 5, the application is subject to this policy and the Applicant should answer the additional questions in the **Land Use Information** section.

LAND USE INFORMATION

Note: Applicants should submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

1. **Is there an adopted county or multi-county comprehensive plan?** ☒ Yes ☐ No

2. **Is there a county stormwater management plan?** ☒ Yes ☐ No

3. **Is there an adopted municipal or multi-municipal comprehensive plan?** ☒ Yes ☐ No

4. **Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance?** ☒ Yes ☐ No

Note: If the Applicant answers "No" to either Questions 1, 3 or 4, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 5 and 6 below.

If the Applicant answers "Yes" to questions 1, 3 and 4, the Applicant should respond to questions 5 and 6 below.

5. **Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval?** If zoning approval has been received, attach documentation. ☐ Yes ☒ No

6. **Have you attached Municipal and County Land Use Letters for the project?** ☐ Yes ☒ No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 at PHMC's online portal, PA-SHARE.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	**Is this a coal mining project?** If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	☐	Yes	☒	No
1.1	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?**	☐	Yes	☐	No
1.2	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?**	☐	Yes	☐	No
1.3	**Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?**	☐	Yes	☐	No
1.4	**For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
1.5	**Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
1.6	**Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?**	☐	Yes	☐	No
2.0	**Is this a non-coal (industrial minerals) mining project?** If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	☐	Yes	☒	No
2.1	**Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?**	☐	Yes	☐	No
2.2	**Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?**	☐	Yes	☐	No
2.3	**Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?**	☐	Yes	☐	No
2.4	**For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No

2.5	**Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐ Yes	☐ No
3.0	**Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well?** If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	☐ Yes	☒ No
3.1	**Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?**	☐ Yes	☐ No
3.2	**Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system?** If "Yes", discuss in *Project Description*.	☐ Yes	☐ No
3.3	**Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?**	☐ Yes	☐ No
4.0	**Will the project involve a construction activity that results in earth disturbance?** If "Yes", specify the total disturbed acreage.	☒ Yes	☐ No
4.0.1	**Total Disturbed Acreage**	***Approximately 14 acres***	
4.0.2	**Will the project discharge or drain to a special protection water (EV or HQ) or an EV wetland?**	☐ Yes	☒ No
4.0.3	**Will the project involve a construction activity that results in earth disturbance in the area of the earth disturbance that are contaminated at levels exceeding residential or non-residential medium-specific concentrations (MSCs) in 25 Pa. Code Chapter 250 at residential or non-residential construction sites, respectively?**	☐ Yes	☒ No
5.0	**Does the project involve any of the following: water obstruction and/or encroachment, wetland impacts, or floodplain project by the Commonwealth/political subdivision or public utility?** If "Yes", respond to 5.1-5.7. If "No", skip to Question 6.0.	☒ Yes	☐ No
5.1	**Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?**	☐ Yes	☒ No
5.2	**Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?**	☐ Yes	☒ No

5.3	**Floodplain Projects by the Commonwealth, a Political Subdivision of the Commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?**	☒ Yes	☐ No
5.4	**Is your project an interstate transmission natural gas pipeline?**	☐ Yes	☒ No
5.5	**Does your project consist of linear construction activities which result in earth disturbance in two or more DEP regions AND three or more counties?**	☐ Yes	☒ No
5.6	**Does your project utilize Floodplain Restoration as a best management practice for Post Construction Stormwater Management?**	☐ Yes	☒ No
5.7	**Does your project utilize Class V Gravity / Injection Wells as a best management practice for Post Construction Stormwater Management?**	☐ Yes	☒ No
6.0	**Will the project involve discharge of construction related stormwater to a dry swale, surface water, ground water or separate storm water system?**	☒ Yes	☐ No
6.1	**Will the project involve discharge of industrial waste stormwater or wastewater from an industrial activity or sewage to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?**	☒ Yes	☐ No
7.0	**Will the project involve the construction and operation of industrial waste treatment facilities?**	☐ Yes	☒ No
8.0	**Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations?** If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the *Project Description*, where applicable.	☐ Yes	☒ No
	8.0.1 Estimated Proposed Flow (gal/day)		
9.0	**Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system?**	☐ Yes	☒ No
	9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	☐ Yes	☐ No
10.0	**Is this project for the beneficial use of biosolids for land application within Pennsylvania?** If "Yes" indicate how much (i.e. gallons or dry tons per year).	☐ Yes	☒ No
	10.0.1 Gallons Per Year (residential septage)		
	10.0.2 Dry Tons Per Year (biosolids)		

11.0 **Does the project involve construction, modification or removal of a dam?** If "Yes", identify the dam. ☐ Yes ☒ No

11.0.1 **Dam Name**

12.0 **Will the project interfere with the flow from, or otherwise impact, a dam?** If "Yes", identify the dam. ☐ Yes ☒ No

12.0.1 **Dam Name**

13.0 **Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)?** ☒ Yes ☐ No

13.0.1 If "Yes", is the operation subject to the agricultural exemption in 35 P.S. § 4004.1? ☐ Yes ☒ No

13.0.2 If the answer to 13.0.1 is "No", identify each type of emission followed by the estimated amount of that emission.

Enter all types & amounts of emissions; separate each set with semicolons. ***Please refer to Appendix E for emissions calculations***

14.0 **Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year?** If "Yes," check all proposed sub-facilities. ☐ Yes ☒ No

14.0.1 **Number of Persons Served**

14.0.2 **Number of Employee/Guests**

14.0.3 **Number of Connections**

14.0.4 **Sub-Fac: Distribution System** ☐ Yes ☐ No

14.0.5 **Sub-Fac: Water Treatment Plant** ☐ Yes ☐ No

14.0.6 **Sub-Fac: Source** ☐ Yes ☐ No

14.0.7 **Sub-Fac: Pump Station** ☐ Yes ☐ No

14.0.8 **Sub-Fac: Transmission Main** ☐ Yes ☐ No

14.0.9 **Sub-Fac: Storage Facility** ☐ Yes ☐ No

15.0 **Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?** ☐ Yes ☒ No

16.0 **Is your project to be served by an existing public water supply?** If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project. ☒ Yes ☐ No

16.0.1 **Supplier's Name** ***Wyalusing Municipal Authority***

16.0.2 **Letter of Approval from Supplier is Attached** ☐ Yes ☒ No

17.0 **Will this project be served by on-lot drinking water wells?** ☐ Yes ☒ No

18.0 **Will this project involve a new or increased drinking water withdrawal from a river, stream, spring, lake, well or other water bod(ies)?** If "Yes," reference Safe Drinking Water Program. ☐ Yes ☒ No

18.0.1 **Source Name**

19.0	**Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste?** If "Yes," indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed. **19.0.1 Type & Amount**	☐ Yes	☒ No
20.0	**Will your project involve the removal of coal, minerals, contaminated media, or solid waste as part of any earth disturbance activities?**	☐ Yes	☒ No
21.0	**Does your project involve installation of a field constructed underground storage tank?** If "Yes," list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **21.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐ Yes	☒ No
22.0	**Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility?** If "Yes," list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **22.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐ Yes	☒ No
23.0	**Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724?** If "Yes," list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **23.0.1 Enter all substances & capacity of each; separate each set with semicolons.** ***19% aqueous ammonia – 22,000 gallon tank***	☒ Yes	☐ No
24.0	**Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **24.0.1 Enter all substances & capacity of each; separate each set with semicolons.** ***19% aqueous ammonia – 22,000 gallon tank***	☒ Yes	☐ No
	NOTE: If the project includes the installation of a regulated storage tank system, including diesel emergency generator systems, the project may require the use of a Department Certified Tank Handler. For a full list of regulated storage tanks and substances, please go to www.dep.pa.gov search term storage tanks		
25.0	**Will the intended activity involve the use of a radiation source?**	☐ Yes	☒ No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

For applicants supplying an EIN number: I am applying for a permit or authorization from the Pennsylvania Department of Environmental Protection (DEP). As part of this application, I will provide DEP with an accurate EIN number for the applicant entity. By filing this application with DEP, I hereby authorize DEP to confirm the accuracy of the EIN number provided with the Pennsylvania Department of Revenue. As applicant, I further consent to the Department of Revenue discussing the same with DEP prior to issuance of the Commonwealth permit or authorization.

Type or Print Name *Debra Raggio*

	*Executive VP, Head of Regulatory*	*12/26/2024*
Signature	**Title**	**Date**

APPENDIX B -
PROCESS/ADDENDUM/FEES FORMS

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

Submit in Triplicate

PROCESSES

Application for Plan Approval to Construct, Modify or Reactivate an Air Contamination Source and/or Install an Air Cleaning Device

This application must be submitted with the General Information Form (GIF).

Before completing this form, read the instructions provided for the form.

Section A - Facility Name, Checklist And Certification

Organization Name or Registered Fictitious Name/Facility Name: ***KDI Wyalusing Power LLC***

DEP Client ID# (if known): _____

Type of Review required and Fees:

- ☐ Source which is not subject to NSPS, NESHAPs, MACT, NSR and PSD: ..... $_____
- ☒ Source requiring approval under NSPS or NESHAPS or both: ..... $***7,500***
- ☐ Source requiring approval under NSR regulations: ..... $_____
- ☐ Source requiring the establishment of a MACT limitation: ..... $_____
- ☐ Source requiring approval under PSD: ..... $_____

Applicant's Checklist

Check the following list to make sure that all the required documents are included.

- ☒ **General Information Form (GIF)**
- ☒ **Processes Plan Approval Application**
- ☒ **Compliance Review Form** or provide reference of most recently submitted compliance review form for facilities submitting on a periodic basis: _____
- ☒ **Copy and Proof of County and Municipal Notifications**
- ☒ **Permit Fees**
- ☐ **Addendum A:** Source Applicable Requirements (only applicable to existing Title V facility)

Certification of Truth, Accuracy and Completeness by a Responsible Official

I, ***Debra L. Raggio***, certify under penalty of law in 18 Pa. C. S. A. §4904, and 35 P.S. §4009(b) (2) that based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate and complete.

(Signature): _____ Date: ***12/26/2024***

Name (Print): ***Debra L. Raggio*** Title: ***Executive Vice President, Head of Regulatory***

OFFICIAL USE ONLY

Application No. _____ Unit ID _____ Site ID _____

DEP Client ID #: _____ APS. ID _____ AUTH. ID _____

Date Received _____ Date Assigned _____ Reviewed By _____

Date of 1st Technical Deficiency _____ Date of 2nd Technical Deficiency _____

Comments: _____

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

Natural Gas Combustion Turbines [redacted]

Manufacturer	Model No.	Number of Sources
[redacted]	[redacted]	[redacted]
Source Designation	**Maximum Capacity**	**Rated Capacity**
[redacted]	[redacted]	[redacted]

Type of Material Processed
Natural Gas

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	***7***	***365***	**8,760**

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)
The Facility is proposing facility-wide annual operation limit of [redacted] ***CTs combined, on a 12-month rolling basis.***

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
[redacted]	***N/A***	***N/A***	***N/A***

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	***7***	***365***	***8,760***

Seasonal variations (Months) From ***N/A*** to ***N/A***

If variations exist, describe them
N/A

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content
Oil Number ***N/A***	GPH @ 60°F	X 10^3 Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Oil Number ***N/A***	GPH @ 60°F	X 10^3 Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Natural Gas	[redacted] SCFH	[redacted] X 10^6 SCF	***<0.5*** grain/100 SCF	***N/A***	***1,025*** Btu/SCF
Gas (other) ***N/A***	SCFH	X 10^6 SCF	grain/100 SCF		Btu/SCF
Coal ***N/A***	TPH	Tons	% by wt		Btu/lb
Other *					

*Note: Describe and furnish information separately for other fuels in Addendum B.

****Maximum hourly fuel throughput based on maximum hourly heat input rating*** [redacted] ***. Annual natural gas throughput based on expected heat input at 99.5% load, 59°F operating conditions*** [redacted] ***.***

Section B - Processes Information (Continued)

3. Burner – *N/A*

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels

A. For Liquids:

Name of material stored
Aqueous ammonia at 19%

Tank I.D. No.	Manufacturer	Date Installed
Tank 001	***TBD – to be provided upon completion of final design***	***TBD***

Maximum Pressure	Capacity (gallons/Meter^3)
TBD – to be provided upon completion of final design	***22,000 gallons***

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)
TBD – to be provided upon completion of final design

Relief valve/vent set pressure (psig)	Vapor press. of liquid at storage temp. (psia/kPa)
TBD – to be provided upon completion of final design	***TBD – to be provided upon completion of final design***

Type of Roof: Describe:
TBD – to be provided upon completion of final design

Total Throughput Per Year	Number of fills per day (fill/day): ***3 times per week every other week***
[redacted]	Filling Rate (gal./min.):
	Duration of fill hr./fill):

B. For Solids – *N/A*

Type: ☐ Silo ☐ Storage Bin ☐Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential"? ☒ Yes ☐ No
If yes, include justification for confidentiality. Place such information on separate pages marked **"confidential"**.

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

Please refer to Application Narrative.

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Fuel flow monitoring, ambient temperature monitoring, ambient relative humidity monitoring, generator output monitoring, diluent (water) flow monitoring (for NOx control), diluent (water) temperature monitoring (for NOx control). Specific equipment used for monitoring is in the design process. Monitoring frequency will be determined by equipment type installed.

Describe each proposed modification to an existing source.

N/A, new facility

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

N/A

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

Emissions during startup, shutdown and upset conditions are quantified using manufacturer's emissions rates. The duration of each startup is less than 30 minutes. Emissions rates and startup durations are determined based on manufacturer's design and analytics. NOx emissions will be controlled via water injection, SCR and application of good air pollution control practices for each turbine. CO and VOC will be controlled via oxidation catalyst and application of good air pollution control practices for each turbine. PM/PM10/PM2.5 will be controlled via use of pipeline quality natural gas and application of good air pollution control practices. SOx and GHGs are a function of the amount of fuel burned.

Anticipated Milestones:

i. Expected commencement date of construction/reconstruction/installation: [redacted]
ii. Expected completion date of construction/reconstruction/installation: [redacted]
iii. Anticipated date of start-up: [redacted]

Section C - Air Cleaning Device

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM					
PM_{10}					
SO_x					
CO					
NO_x					
VOC					
Others: (e.g., HAPs)	-----	-----	-----	-----	-----

Please refer to the attached Emissions Inventory Tables, Appendix E.

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling – *N/A*

Water quenching ☐ Yes ☐ No Water injection rate _____ GPM

Radiation and convection cooling ☐ Yes ☐ No	Air dilution ☐ Yes ☐ No If yes, _____CFM
Forced Draft ☐ Yes ☐ No	Water cooled duct work ☐ Yes ☐ No
Other	
Inlet Volume _____ACFM @ _____°F _____% Moisture	Outlet Volume _____ACFM @ _____°F _____% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued)

3. Settling Chambers – *N/A*

Manufacturer	Volume of gas handled _____ACFM @ _____°F	Gas velocity (ft/sec.)

Length of chamber (ft.)	Width of chamber (ft.)	Height of chamber (ft.)	Number of trays

Water injection ☐ Yes ☐ No	Water injection rate (GPM)

Emissions Data

Inlet	Outlet	Removal Efficiency (%)

4. Inertial and Cyclone Collectors – *N/A*

Manufacturer	Type	Model No.
Pressure drop (in. of water)	Inlet volume _____ACFM @ _____°F	Outlet volume _____ACFM @ _____°F

Number of individual cyclone(s)	Outlet straightening vanes used? ☐ Yes ☐ No

Length of Cyclone(s) Cylinder (ft.)	Diameter of Cyclone(s) Cylinder (ft.)	Length of Cyclone(s) cone (ft.)

Inlet Diameter (ft.) or duct area ($ft.^2$) of cyclone(s)	Outlet Diameter (ft.) or duct area ($ft.^2$) of cyclone(s)

If a multi-clone or multi-tube unit is installed, will any of the individual cyclones or cyclone tubes be blanked or blocked off?

Describe any exhaust gas recirculation loop to be employed.

Attach particle size efficiency curve

Emissions Data

Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

5. Fabric Collector – *N/A*

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided? (Describe in detail) ☐ Yes ☐ No

Dew point at maximum moisture _____ °F | Design inlet volume _____ SCFM

Type of Fabric

Material _____ ☐ Felted ☐ Membrane

Weight _____ oz/sq.yd ☐ Woven ☐ Others: List: _____

Thickness _____ in ☐ Felted-Woven

Fabric permeability (clean) @ ½" water-Δ P _____ CFM/sq.ft.

Filter dimensions Length _____ Diameter/Width _____

Effective area per filter _____ | Maximum operating temperature (°F) _____

Effective air to cloth ratio Minimum _____ Maximum _____

Drawing of Fabric Filter

A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled _____ ACFM @ _____ °F	Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.

Type of filter cleaning

☐ Manual Cleaning ☐ Bag Collapse ☐ Reverse Air Jets

☐ Mechanical Shakers ☐ Sonic Cleaning ☐ Other: _____

☐ Pneumatic Shakers ☐ Reverse Air Flow

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated By

☐ Timer Frequency if timer actuated _____

☐ Expected pressure drop range _____ in. of water ☐ Other Specify _____

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

6. Wet Collection Equipment – *N/A*

Equipment Specifications

Manufacturer	Type	Model No.

Design Inlet Volume (SCFM)	Relative Particulate/Gas Velocity (ejector scrubbers only)

Describe the internal features (e.g., variable throat, gas/liquid diffusion plates, spray nozzles, liquid redistributors, bed limiters, etc.).

Describe pH monitoring and pH adjustment systems, if applicable.

Describe mist eliminator or separator (type, configuration, backflush capability, frequency).

Attach particulate size efficiency curve.

Operating Parameters

Inlet volume of gases handled _____ (ACFM) @ _____°F	Outlet volume of gases handled _____ (ACFM) @ _____ °F _____% Moisture

Liquid flow rates. Describe equipment provided to measure liquid flow rates to scrubber (e.g., quenching section, recirculating solution, makeup water, bleed flow, etc.)

Describe scrubber liquid supply system (amount of make-up and recirculating liquid, capacity of recirculating liquid system, etc.)

State pressure drop range (in water) across scrubber (e.g., venturi throat, packed bed, etc.) only. Describe the equipment provide to measure the pressure drop. Do not include duct or de-mister losses.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

7. Electrostatic Precipitator – *N/A*

Equipment Specifications

Manufacturer	Model No.	☐ Wet ☐ Dry ☐ Single-Stage ☐ Two-Stage

Gas distribution grids ☐ Yes ☐ No	Design Inlet Volume (SCFM) _____ Maximum operating temperature (°F) _____

Total collecting surface area _____ sq. ft. Collector plates size length _____ ft. x width _____ ft.

Number of fields _____ Number of collector plates/field _____

Spacing between collector plates _____ inches.

Maximum gas velocity _____ ft./sec. Minimum gas treatment time: _____ sec.

Total discharge electrode length _____ ft.

Number of discharge electrodes _____ Number of collecting electrode rappers _____

Rapper control ☐ Magnetic ☐ Pneumatic ☐ Other _____ Describe in detail

Operating Parameters

Inlet gas temperature (°F) _____ Outlet gas temperature (°F) _____	State pressure drop range (inches water gauge) across collector only _____ Describe the equipment
Volume of gas handled (ACFM) _____	Dust resistivity (ohm-cm). Will resistivity vary?

Power requirements

Number and size of Transformer Rectifier sets by electrical field

Field No.	No. of Sets	Each Transformer KVA	Each Rectifier KV Ave./Peak	Each Rectifier Ma DC

Current Density	Corona Power	Corona Power Density
_____ Micro amperes/ft^2.	_____ Watts/1000 ACFM	_____ Watts/ft^2.

Will a flue gas conditioning system be employed? If yes, describe it.

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

8. Adsorption Equipment – *N/A*

Equipment Specifications

Manufacturer	Type	Model No.

Design Inlet Volume (SCFM)	Adsorbent charge per adsorber vessel and number of adsorber vessels

Length of Mass Transfer Zone (MTZ), supplied by the manufacturer based upon laboratory data.

Adsorber diameter (ft.) and area ft^2.)	Adsorption bed depth (ft.)

Adsorbent information

Adsorbent type and physical properties.

Working capacity of adsorbent (%)	Heel percent or unrecoverable solvent weight % in the adsorbent after regeneration.

Operating Parameters

Inlet volume of gases handled _____ (ACFM) @ _____ °F

Adsorption time per adsorption bed	Breakthrough capacity: Lbs. of solvent / 100 lbs. of adsorbent = _____
Vapor pressure of solvents at the inlet temperature	Available steam in pounds to regenerate carbon adsorber (if applicable)

Percent relative saturation of each solvent at the inlet temperature

Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

9. Absorption Equipment – *N/A*

Equipment Specifications

Manufacturer	Type	Model No.

Design Inlet Volume (SCFM)	Tower height (ft.) and inside diameter (ft.)
Packing type and size (if applicable)	Height of packing (ft.) (if applicable)
Number of trays (if applicable)	Number of bubble caps (if applicable)

Configuration

☐ Counter-current ☐ Cross flow ☐ Cocurrent flow

Describe pH and/or other monitoring and controls.

Absorbent information

Absorbent type and concentration.	Retention time (sec.)

Attach equilibrium data for absorption (if applicable)

Attach any additional information regarding auxiliary equipment, absorption solution supply system (once through or recirculating, system capacity, etc.) to thoroughly evaluate the control equipment. Indicate the flow rates for makeup, bleed and recirculation.

Operating Parameters

Volume of gas handled (ACFM)	Inlet temperature (°F)	Pressure drop (in. of water) and liquid flow rate. Describe the monitoring equipment.

State operating range for pH and/or absorbent concentration in scrubber liquid.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

10. ☒ **Selective Catalytic Reduction (SCR)**
☐ **Selective Non-Catalytic Reduction (SNCR)**
☐ **Non-Selective Catalytic Reduction (NSCR)**

Equipment Specifications

Manufacturer	Type	Model No.
SISU Energy & Environmental	***TBD – to be provided upon completion of final design***	***TBD – to be provided upon completion of final design***

Design Inlet Volume (SCFM)	Design operating temperature (°F)
[redacted]	***650-850***

Is the system equipped with process controls for proper mixing/control of the reducing agent in gas stream? If yes, give details.

TBD – to be provided upon completion of final design

Attach efficiency and other pertinent information (e.g., ammonia slip)

Units will be equipped with NO_X CEMS

Operating Parameters

Volume of gases handled [redacted] (ACFM) @ ***700*** °F

Operating temperature range for the SCR/SNCR/NSCR system (°F) From ***650*** °F To ***850*** °F

Reducing agent used, if any	Oxidation catalyst used, if any
Aqueous ammonia at 19%	***Refer to Section C, Item 11***

State expected range of usage rate and concentration.

TBD – to be provided upon completion of final design

Service life of catalyst	Ammonia slip (ppm)
10 years	***5***

Describe fully with a sketch giving locations of equipment, controls systems, important parameters and method of operation.

Refer to attached process flow diagram. Equipment, monitoring, and control configurations are in development with expected vendors.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Thermocouple sensors in the exhaust gas path indicate proper temperature ranges, ammonia injection flow meters managed by equipment sensors.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
NO_X		***Please refer to the attached Emissions Inventory Tables, Appendix E.***	
CO			
VOC			

Section C - Air Cleaning Device (Continued)

11. Oxidizer/Afterburners

Equipment Specifications

Manufacturer	Type ☐ Thermal ☒ Catalytic	Model No.
BASF or Equal		***CAMET***

Design Inlet Volume (SCFM)	Combustion chamber dimensions (length, cross-sectional area, effective chamber volume, etc.) ***TBD upon final design***

Describe design features, which will ensure mixing in combustion chamber.
TBD upon final design.

Describe method of preheating incoming gases (if applicable). ***N/A***	Describe heat exchanger system used for heat recovery (if applicable). ***N/A***

Catalyst used	Life of catalyst	Expected temperature rise across catalyst (°F)	Dimensions of bed (in inches).
Stainless Steel Foil Substrate coated with a washcoat impregnated with platinum group metals	***26,280 Hours 3 Years Continuous operation***	***<0.2 °F***	Height: ***282*** Diameter or Width: ***138*** Depth:

Are temperature sensing devices being provided to measure the temperature rise across the catalyst? ☒ Yes ☐ No
If yes, describe. ***TBD – to be provided upon completion of final design***

Describe any temperature sensing and/or recording devices (including specific location of temperature probe in a drawing or sketch.
Refer to attached process flow diagram. Equipment, monitoring, and control configurations are in development with expected vendors.

Burner Information – N/A

Burner Manufacturer	Model No.	Fuel Used

Number and capacity of burners	Rated capacity (each)	Maximum capacity (each)

Describe the operation of the burner	Attach dimensioned diagram of afterburner

Operating Parameters

Inlet flow rate (ACFM) [redacted] @ ***824***°F	Outlet flow rate (ACFM) [redacted] @ ***824***°F
State pressure drop range across catalytic bed (in. of water). ***TBD upon final design***	Describe the method adopted for regeneration or disposal of the used catalyst. ***TBD upon final design***

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.
Internal Over-Temperature Alarm / Over-Pressure Alarm

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Please refer to the attached Emissions Inventory Tables, Appendix E.

Section C - Air Cleaning Device (Continued)

12. Flares – *N/A*

Equipment Specifications

Manufacturer	Type ☐ Elevated flare ☐ Ground flare ☐ Other _____ Describe	Model No.
Design Volume (SCFM)	Dimensions of stack (ft.) Diameter _____ Height _____	
Residence time (sec.) and outlet temperature (°F)	Turn down ratio	Burner details

Describe the flare design (air/steam-assisted or nonassisted), essential auxiliaries including pilot flame monitor of proposed flare with a sketch.

Describe the operation of the flare's ignition system.

Describe the provisions to introduce auxiliary fuel to the flare.

Operation Parameters

Detailed composition of the waste gas	Heat content	Exit velocity
Maximum and average gas flow burned (ACFM)	Operating temperature (°F)	

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

13. Other Control Equipment – *N/A*

Equipment Specifications

Manufacturer	Type	Model No.

Design Volume (SCFM)	Capacity

Describe pH monitoring and pH adjustment, if any.

Indicate the liquid flow rate and describe equipment provided to measure pressure drop and flow rate, if any.

Attach efficiency curve and/or other efficiency information.

Attach any additional date including auxiliary equipment and operation details to thoroughly evaluate the control equipment.

Operation Parameters

Volume of gas handled

_____ ACFM @ _____ °F _____ % Moisture

Describe fully giving important parameters and method of operation.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

14. Costs – *TBD Costs will be provided upon completion of design*

Indicate cost associated with air cleaning device and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

TBD – to be provided upon completion of final design

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

See attached initial documentation from SISU, included in Appendix C.

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

TBD – to be provided upon completion of final design.

Section D - Additional Information

Will the construction, modification, etc. of the sources covered by this application increase emissions from other sources at the facility? If so, describe and quantify.

N/A

If this project is subject to any one of the following, attach a demonstration to show compliance with applicable standards. ***See the attached narrative.***

a. Prevention of Significant Deterioration permit (PSD), 40 CFR 52? ☐ YES ☒ NO

b. New Source Review (NSR), 25 Pa. Code Chapter 127, Subchapter E? ☐ YES ☒ NO

c. New Source Performance Standards (NSPS), 40 CFR Part 60? ☒ YES ☐ NO
(If Yes, which subpart) ***Subparts KKKK and IIII***

d. National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61? (If Yes, which subpart) _____ ☐ YES ☒ NO

e. Maximum Achievable Control Technology (MACT) 40 CFR Part 63? ☐ YES ☒ NO
(If Yes, which part) _____

Attach a demonstration showing that the emissions from any new sources will be the minimum attainable through the use of best available technology (BAT).

See the attached narrative.

Provide emission increases and decreases in allowable (or potential) and actual emissions within the last five (5) years for applicable PSD pollutant(s) if the facility is an existing major facility (PSD purposes).

N/A

Section D - Additional Information (Continued) – N/A

Indicate emission increases and decreases in tons per year (tpy), for volatile organic compounds (VOCs) and nitrogen oxides (NOx) for NSR applicability since January 1, 1991 or other applicable dates (see other applicable dates in instructions). The emissions increases include all emissions including stack, fugitive, material transfer, other emission generating activities, quantifiable emissions from exempted source(s), etc.

Permit number (if applicable)	Date issued	Indicate ***Yes*** or ***No*** if emission increases and decreases were used previously for netting	Source I. D. or Name	VOCs		NOx	
				Emission increases in potential to emit (tpy)	Creditable emission decreases in actual emissions (tpy)	Emission increases in potential to emit (tpy)	Creditable emission decreases in actual emissions (tpy)

If the source is subject to 25 Pa. Code Chapter 127, Subchapter E, New Source Review requirements,

a. Identify Emission Reduction Credits (ERCs) for emission offsets or demonstrate ability to obtain suitable ERCs for emission offsets.

b. Provide a demonstration that the lowest achievable emission rate (LAER) control techniques will be employed (if applicable).

c. Provide an analysis of alternate sites, sizes, production processes and environmental control techniques demonstrating that the benefits of the proposed source outweigh the environmental and social costs (if applicable).

Attach calculations and any additional information necessary to thoroughly evaluate compliance with all the applicable requirements of Article III and applicable requirements of the Clean Air Act adopted thereunder The Department may request additional information to evaluate the application such as a standby plan, a plan for air pollution emergencies, air quality modeling, etc.

Section E - Compliance Demonstration

Note: Complete this section if source is not a Title V facility. Title V facilities must complete Addendum A.

Method of Compliance Type: Check all that apply and complete all appropriate sections below

☒ Monitoring ☒ Testing ☒ Reporting

☒ Recordkeeping ☒ Work Practice Standard

Monitoring:

a. Monitoring device type (Parameter, CEM, etc): ***CEMS***

b. Monitoring device location: ***Each stack***

c. Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Equipment, monitoring, and control configurations are in development with expected vendors (expected exhaust flow, temperatures, ammonia injection rate).

Testing:

a. Reference Test Method: Citation

VOC: EPA Reference Method 18, 25 or another Method(s) approved by the Department
PM: EPA Reference Methods 5 and 202, or another Method(s) approved by the Department
PM10 & PM2.5: EPA Reference Methods 201 or 201A, and 202, or another Method(s) approved by the Department

b. Reference Test Method: Description

VOC emissions: reported in units of ppmvd (corrected to 15% oxygen on a dry basis), lb/MMBtu, and lb/hr; in terms of methane (CH4) as well as propane (C3H8).
PM emissions (filterable and condensable shall be reported separately and together): reported in units of lb/hr and lb/MMBtu.
PM10 & PM2.5: reported in units of lb/hr and lb/MMBtu.

Recordkeeping:

Describe what parameters will be recorded and the recording frequency:

Fuel flow monitoring, ambient temperature monitoring, ambient relative humidity monitoring, generator output monitoring, diluent (water) flow monitoring (for NOx control), diluent (water) temperature monitoring (for NO_X control). Specific equipment used for monitoring is in the design process. Monitoring frequency will be determined by equipment type installed.
The permittee shall maintain records of the natural gas fuel sulfur content.

Reporting:

a. Describe what is to be reported and frequency of reporting:

Quarterly CEM data reporting in accordance with PADEP requirements, annual emissions inventory reports.

b. Reporting start date: ***Upon CEMS certification***

Work Practice Standard:

Describe each: ***Equipment will be operated in accordance with manufacturer's specifications and good combustion practices to maintain combustion efficiency. Equipment will be maintained at a minimum as recommended by manufacturer's specifications.***

Section F - Flue and Air Contaminant Emission

1. Estimated Atmospheric Emissions*

Pollutant	Maximum emission rate			Calculation/ Estimation Method
	specify units	lbs/hr	tons/yr.	
PM				
PM_{10}				
SO_x				
CO				
NO_x				
VOC				
Others: (e.g., HAPs)	-----	-----	-----	-----

Please refer to the attached Emissions Inventory Tables – Appendix E.

* These emissions must be calculated based on the requested operating schedule and/or process rate e.g., operating schedule for maximum limits or restricted hours of operation and /or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack and Exhauster

Stack Designation/Number [redacted]

List Source(s) or source ID exhausted to this stack: [redacted]

% of flow exhausted to stack: ***100%, one stack per turbine***

Stack height above grade (ft.) ***80***
Grade elevation (ft.) ***~760***

Stack diameter (ft) or Outlet duct area (sq. ft.)
10

f. Weather Cap
☒ YES ☐ NO

Distance of discharge to nearest property line (ft.). Locate on topographic map.

200-500 ft

Does stack height meet Good Engineering Practice (GEP)?

No

If modeling (estimating) of ambient air quality impacts is needed, attach a site plan with buildings and their dimensions and other obstructions. ***N/A***

Location of stack** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
[redacted]						

Stack exhaust
Volume [redacted] ACFM Temperature ***824*** °F Moisture ***10*** %

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions. ***Equipment, monitoring, and control configurations are in development with expected vendors.***
Exhauster (attach fan curves) ***N/A*** in. of water ***N/A*** HP @ ***N/A*** RPM.
** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section B - Processes Information

1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

One diesel-fired fire water pump

Manufacturer	Model No.	Number of Sources
Peerless Pump, engine mfg TBD	***PVF***	***1***
Source Designation	Maximum Capacity	Rated Capacity
P201	***125 hp***	***125 hp***

Type of Material Processed
Ultra-Low Sulfur Diesel (ULSD)

Maximum Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	***7***	***365***	***500***

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

Capacity (specify units)

Per Hour	Per Day	Per Week	Per Year
0.88 MMBtu/hr	***N/A***	***N/A***	***N/A***

Operating Schedule

Hours/Day	Days/Week	Days/Year	Hours/Year
24	***7***	***365***	***500***

Seasonal variations (Months) From ***N/A*** to ***N/A***

If variations exist, describe them
N/A

2. Fuel

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content
Oil Number ***ULSD***	***TBD*** GPH @ 60°F	***TBD*** X 10^3 Gal	***0.0015***% by wt		***140,000*** Btu/Gal. & Lbs./Gal. @ 60 °F
Oil Number _____	GPH @ 60°F	X 10^3 Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Natural Gas	SCFH	X 10^6 SCF	grain/100 SCF		Btu/SCF
Gas (other) _____	SCFH	X 10^6 SCF	grain/100 SCF		Btu/SCF
Coal _____	TPH	Tons	% by wt		Btu/lb
Other * _____					
_____					
_____					

*Note: Describe and furnish information separately for other fuels in Addendum B.

Section B - Processes Information (Continued)

3. Burner – *N/A*

Manufacturer	Type and Model No.	Number of Burners

Description:

Rated Capacity	Maximum Capacity

4. Process Storage Vessels – *N/A*

A. For Liquids:

Name of material stored

Tank I.D. No.	Manufacturer	Date Installed

Maximum Pressure	Capacity (gallons/Meter^3)

Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)

Relief valve/vent set pressure (psig)	Vapor press. of liquid at storage temp. (psia/kPa)

Type of Roof: Describe:

Total Throughput Per Year	Number of fills per day (fill/day): Filling Rate (gal./min.): Duration of fill hr./fill):

B. For Solids

Type: ☐ Silo ☐ Storage Bin ☐Other, Describe	Name of Material Stored

Silo/Storage Bin I.D. No.	Manufacturer	Date Installed

State whether the material will be stored in loose or bags in silos	Capacity (Tons)

Turn over per year in tons	Turn over per day in tons

Describe fugitive dust control system for loading and handling operations

Describe material handling system

5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential"? ☒ Yes ☐ No
If yes, include justification for confidentiality. Place such information on separate pages marked **"confidential"**.

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

Please refer to Application Narrative.

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Non-Resettable hour meter.

Describe each proposed modification to an existing source.

N/A, new source

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

N/A

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

Emissions during startup/shutdown will be minimized by limiting the time that the unit is in startup or shutdown mode.

Anticipated Milestones:

i. Expected commencement date of construction/reconstruction/installation: [redacted]
ii. Expected completion date of construction/reconstruction/installation: [redacted]
iii. Anticipated date of start-up: [redacted]

Section C - Air Cleaning Device – *N/A*

1. Precontrol Emissions*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	
PM					
PM_{10}					
SO_x					
CO					
NO_x					
VOC					
Others: (e.g., HAPs)	-----	-----	-----	-----	-----

* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Gas Cooling

Water quenching ☐ Yes ☐ No Water injection rate _____ GPM

Radiation and convection cooling ☐ Yes ☐ No	Air dilution ☐ Yes ☐ No If yes, _____CFM
Forced Draft ☐ Yes ☐ No	Water cooled duct work ☐ Yes ☐ No
Other	
Inlet Volume _____ACFM @ _____°F _____% Moisture	Outlet Volume _____ACFM @ _____°F _____% Moisture

Describe the system in detail.

Section C - Air Cleaning Device (Continued) – *N/A*

3. Settling Chambers

Manufacturer	Volume of gas handled _____ACFM @ _____°F	Gas velocity (ft/sec.)

Length of chamber (ft.)	Width of chamber (ft.)	Height of chamber (ft.)	Number of trays

Water injection ☐ Yes ☐ No	Water injection rate (GPM)

Emissions Data

Inlet	Outlet	Removal Efficiency (%)

4. Inertial and Cyclone Collectors

Manufacturer	Type	Model No.

Pressure drop (in. of water)	Inlet volume _____ACFM @ _____°F	Outlet volume _____ACFM @ _____°F

Number of individual cyclone(s)	Outlet straightening vanes used? ☐ Yes ☐ No

Length of Cyclone(s) Cylinder (ft.)	Diameter of Cyclone(s) Cylinder (ft.)	Length of Cyclone(s) cone (ft.)

Inlet Diameter (ft.) or duct area ($ft.^2$) of cyclone(s)	Outlet Diameter (ft.) or duct area ($ft.^2$) of cyclone(s)

If a multi-clone or multi-tube unit is installed, will any of the individual cyclones or cyclone tubes be blanked or blocked off?

Describe any exhaust gas recirculation loop to be employed.

Attach particle size efficiency curve

Emissions Data

Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued) – *N/A*

5. Fabric Collector

Equipment Specifications

Manufacturer	Model No.	☐ Pressurized Design ☐ Suction Design
Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated? ☐ Yes ☐ No

Can each compartment be isolated for repairs and/or filter replacement? ☐ Yes ☐ No

Are temperature controls provided? (Describe in detail) ☐ Yes ☐ No

Dew point at maximum moisture _____ °F | Design inlet volume _____ SCFM

Type of Fabric

Material _____ ☐ Felted ☐ Membrane

Weight _____ oz/sq.yd ☐ Woven ☐ Others: List: _____

Thickness _____ in ☐ Felted-Woven

Fabric permeability (clean) @ ½" water-Δ P _____ CFM/sq.ft.

Filter dimensions Length _____ Diameter/Width _____

Effective area per filter _____ | Maximum operating temperature (°F) _____

Effective air to cloth ratio Minimum _____ Maximum _____

Drawing of Fabric Filter

A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.

Operation and Cleaning

Volume of gases handled _____ ACFM @ _____ °F	Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.

Type of filter cleaning

☐ Manual Cleaning ☐ Bag Collapse ☐ Reverse Air Jets

☐ Mechanical Shakers ☐ Sonic Cleaning ☐ Other: _____

☐ Pneumatic Shakers ☐ Reverse Air Flow

Describe the equipment provided if dry oil free air is required for collector operation

Cleaning Initiated By

☐ Timer Frequency if timer actuated _____

☐ Expected pressure drop range _____ in. of water ☐ Other Specify _____

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued) – *N/A*

6. Wet Collection Equipment

Equipment Specifications

Manufacturer	Type	Model No.

Design Inlet Volume (SCFM)	Relative Particulate/Gas Velocity (ejector scrubbers only)

Describe the internal features (e.g., variable throat, gas/liquid diffusion plates, spray nozzles, liquid redistributors, bed limiters, etc.).

Describe pH monitoring and pH adjustment systems, if applicable.

Describe mist eliminator or separator (type, configuration, backflush capability, frequency).

Attach particulate size efficiency curve.

Operating Parameters

Inlet volume of gases handled _____ (ACFM) @ _____°F	Outlet volume of gases handled _____ (ACFM) @ _____ °F _____% Moisture

Liquid flow rates. Describe equipment provided to measure liquid flow rates to scrubber (e.g., quenching section, recirculating solution, makeup water, bleed flow, etc.)

Describe scrubber liquid supply system (amount of make-up and recirculating liquid, capacity of recirculating liquid system, etc.)

State pressure drop range (in water) across scrubber (e.g., venturi throat, packed bed, etc.) only. Describe the equipment provide to measure the pressure drop. Do not include duct or de-mister losses.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued) – *N/A*

7. Electrostatic Precipitator

Equipment Specifications

Manufacturer	Model No.	☐ Wet ☐ Dry ☐ Single-Stage ☐ Two-Stage

Gas distribution grids ☐ Yes ☐ No	Design Inlet Volume (SCFM) _____ Maximum operating temperature (°F) _____

Total collecting surface area _____ sq. ft. Collector plates size length _____ ft. x width _____ ft.

Number of fields _____ Number of collector plates/field _____

Spacing between collector plates _____ inches.

Maximum gas velocity _____ ft./sec. Minimum gas treatment time: _____ sec.

Total discharge electrode length _____ ft.

Number of discharge electrodes _____ Number of collecting electrode rappers _____

Rapper control ☐ Magnetic ☐ Pneumatic ☐ Other _____ Describe in detail

Operating Parameters

Inlet gas temperature (°F) _____ Outlet gas temperature (°F) _____	State pressure drop range (inches water gauge) across collector only _____ Describe the equipment
Volume of gas handled (ACFM) _____	Dust resistivity (ohm-cm). Will resistivity vary?

Power requirements

Number and size of Transformer Rectifier sets by electrical field

Field No.	No. of Sets	Each Transformer KVA	Each Rectifier KV Ave./Peak	Each Rectifier Ma DC

Current Density _____ Micro amperes/ft^2.	Corona Power _____ Watts/1000 ACFM	Corona Power Density _____ Watts/ft^2.

Will a flue gas conditioning system be employed? If yes, describe it.

Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued) – *N/A*

8. Adsorption Equipment

Equipment Specifications

Manufacturer	Type	Model No.

Design Inlet Volume (SCFM)	Adsorbent charge per adsorber vessel and number of adsorber vessels

Length of Mass Transfer Zone (MTZ), supplied by the manufacturer based upon laboratory data.

Adsorber diameter (ft.) and area ft^2.)	Adsorption bed depth (ft.)

Adsorbent information

Adsorbent type and physical properties.

Working capacity of adsorbent (%)	Heel percent or unrecoverable solvent weight % in the adsorbent after regeneration.

Operating Parameters

Inlet volume of gases handled _____ (ACFM) @ _____ °F

Adsorption time per adsorption bed	Breakthrough capacity: Lbs. of solvent / 100 lbs. of adsorbent = _____
Vapor pressure of solvents at the inlet temperature	Available steam in pounds to regenerate carbon adsorber (if applicable)

Percent relative saturation of each solvent at the inlet temperature

Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued) – *N/A*

9. Absorption Equipment

Equipment Specifications

Manufacturer	Type	Model No.

Design Inlet Volume (SCFM)	Tower height (ft.) and inside diameter (ft.)
Packing type and size (if applicable)	Height of packing (ft.) (if applicable)
Number of trays (if applicable)	Number of bubble caps (if applicable)

Configuration

☐ Counter-current ☐ Cross flow ☐ Cocurrent flow

Describe pH and/or other monitoring and controls.

Absorbent information

Absorbent type and concentration.	Retention time (sec.)

Attach equilibrium data for absorption (if applicable)

Attach any additional information regarding auxiliary equipment, absorption solution supply system (once through or recirculating, system capacity, etc.) to thoroughly evaluate the control equipment. Indicate the flow rates for makeup, bleed and recirculation.

Operating Parameters

Volume of gas handled (ACFM)	Inlet temperature (°F)	Pressure drop (in. of water) and liquid flow rate. Describe the monitoring equipment.

State operating range for pH and/or absorbent concentration in scrubber liquid.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued) – *N/A*

10. ☐ **Selective Catalytic Reduction (SCR)**
☐ **Selective Non-Catalytic Reduction (SNCR)**
☐ **Non-Selective Catalytic Reduction (NSCR)**

Equipment Specifications

Manufacturer	Type	Model No.

Design Inlet Volume (SCFM)	Design operating temperature (°F)

Is the system equipped with process controls for proper mixing/control of the reducing agent in gas stream? If yes, give details.

Attach efficiency and other pertinent information (e.g., ammonia slip)

Operating Parameters

Volume of gases handled _____ (ACFM) @ _____ °F

Operating temperature range for the SCR/SNCR/NSCR system (°F) From _____°F To _____°F

Reducing agent used, if any	Oxidation catalyst used, if any

State expected range of usage rate and concentration.

Service life of catalyst	Ammonia slip (ppm)

Describe fully with a sketch giving locations of equipment, controls systems, important parameters and method of operation.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
NO_x			
CO			
VOC			

Section C - Air Cleaning Device (Continued) – *N/A*

11. Oxidizer/Afterburners

Equipment Specifications

Manufacturer	Type ☐ Thermal ☐ Catalytic	Model No.
Design Inlet Volume (SCFM)	Combustion chamber dimensions (length, cross-sectional area, effective chamber volume, etc.)	

Describe design features, which will ensure mixing in combustion chamber.

Describe method of preheating incoming gases (if applicable).	Describe heat exchanger system used for heat recovery (if applicable).

Catalyst used	Life of catalyst	Expected temperature rise across catalyst (°F)	Dimensions of bed (in inches). Height: _____ Diameter or Width: _____ Depth: _____

Are temperature sensing devices being provided to measure the temperature rise across the catalyst? ☐ Yes ☐ No

If yes, describe.

Describe any temperature sensing and/or recording devices (including specific location of temperature probe in a drawing or sketch.

Burner Information

Burner Manufacturer	Model No.	Fuel Used
Number and capacity of burners	Rated capacity (each)	Maximum capacity (each)

Describe the operation of the burner	Attach dimensioned diagram of afterburner

Operating Parameters

Inlet flow rate (ACFM) _____ @ _____°F	Outlet flow rate (ACFM) _____@ _____°F
State pressure drop range across catalytic bed (in. of water).	Describe the method adopted for regeneration or disposal of the used catalyst.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued) – *N/A*

12. Flares

Equipment Specifications

Manufacturer	Type ☐ Elevated flare ☐ Ground flare ☐ Other _____ Describe	Model No.
Design Volume (SCFM)	Dimensions of stack (ft.) Diameter _____ Height _____	
Residence time (sec.) and outlet temperature (°F)	Turn down ratio	Burner details

Describe the flare design (air/steam-assisted or nonassisted), essential auxiliaries including pilot flame monitor of proposed flare with a sketch.

Describe the operation of the flare's ignition system.

Describe the provisions to introduce auxiliary fuel to the flare.

Operation Parameters

Detailed composition of the waste gas	Heat content	Exit velocity
Maximum and average gas flow burned (ACFM)	Operating temperature (°F)	

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued) – *N/A*

13. Other Control Equipment

Equipment Specifications

Manufacturer	Type	Model No.

Design Volume (SCFM)	Capacity

Describe pH monitoring and pH adjustment, if any.

Indicate the liquid flow rate and describe equipment provided to measure pressure drop and flow rate, if any.

Attach efficiency curve and/or other efficiency information.

Attach any additional date including auxiliary equipment and operation details to thoroughly evaluate the control equipment.

Operation Parameters

Volume of gas handled

_____ ACFM @ _____ °F _____ % Moisture

Describe fully giving important parameters and method of operation.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)

14. Costs – *TBD Costs will be provided upon completion of design*

Indicate cost associated with air cleaning device and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost

15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

N/A

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

N/A

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

N/A

Section D - Additional Information

Will the construction, modification, etc. of the sources covered by this application increase emissions from other sources at the facility? If so, describe and quantify.

No

If this project is subject to any one of the following, attach a demonstration to show compliance with applicable standards. ***See the attached narrative.***

a. Prevention of Significant Deterioration permit (PSD), 40 CFR 52? ☐ YES ☒ NO

b. New Source Review (NSR), 25 Pa. Code Chapter 127, Subchapter E? ☐ YES ☒ NO

c. New Source Performance Standards (NSPS), 40 CFR Part 60? ☒ YES ☐ NO
(If Yes, which subpart) ***Subpart IIII***

d. National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61? (If Yes, which subpart) _____ ☐ YES ☒ NO

e. Maximum Achievable Control Technology (MACT) 40 CFR Part 63? ☐ YES ☒ NO
(If Yes, which part) ***Subpart ZZZZ (comply with NSPS IIII)***

Attach a demonstration showing that the emissions from any new sources will be the minimum attainable through the use of best available technology (BAT).

See the attached narrative.

Provide emission increases and decreases in allowable (or potential) and actual emissions within the last five (5) years for applicable PSD pollutant(s) if the facility is an existing major facility (PSD purposes).

N/A

Section D - Additional Information (Continued)

Indicate emission increases and decreases in tons per year (tpy), for volatile organic compounds (VOCs) and nitrogen oxides (NOx) for NSR applicability since January 1, 1991 or other applicable dates (see other applicable dates in instructions). The emissions increases include all emissions including stack, fugitive, material transfer, other emission generating activities, quantifiable emissions from exempted source(s), etc.

Permit number (if applicable)	Date issued	Indicate ***Yes*** or ***No*** if emission increases and decreases were used previously for netting	Source I. D. or Name	VOCs		NOx	
				Emission increases in potential to emit (tpy)	Creditable emission decreases in actual emissions (tpy)	Emission increases in potential to emit (tpy)	Creditable emission decreases in actual emissions (tpy)

Please refer to the attached Emissions Inventory Tables, Appendix E.

If the source is subject to 25 Pa. Code Chapter 127, Subchapter E, New Source Review requirements,

d. Identify Emission Reduction Credits (ERCs) for emission offsets or demonstrate ability to obtain suitable ERCs for emission offsets. ***See the attached narrative.***

e. Provide a demonstration that the lowest achievable emission rate (LAER) control techniques will be employed (if applicable). ***See the attached narrative.***

f. Provide an analysis of alternate sites, sizes, production processes and environmental control techniques demonstrating that the benefits of the proposed source outweigh the environmental and social costs (if applicable). ***See the attached narrative.***

Attach calculations and any additional information necessary to thoroughly evaluate compliance with all the applicable requirements of Article III and applicable requirements of the Clean Air Act adopted thereunder The Department may request additional information to evaluate the application such as a standby plan, a plan for air pollution emergencies, air quality modeling, etc. ***Please refer to the attached Emissions Inventory Tables in Appendix E.***

Section E - Compliance Demonstration

Note: Complete this section if source is not a Title V facility. Title V facilities must complete Addendum A.

Method of Compliance Type: Check all that apply and complete all appropriate sections below

☒ Monitoring ☐ Testing ☐ Reporting

☒ Recordkeeping ☒ Work Practice Standard

Monitoring:

a. Monitoring device type (Parameter, CEM, etc): ***Hours meter***

b. Monitoring device location: ***Fire pump engine***

c. Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:

Equipment, monitoring, and control configurations are in development with expected vendors.

Testing:

a. Reference Test Method: Citation ***N/A***

b. Reference Test Method: Description ***N/A***

Recordkeeping:

Describe what parameters will be recorded and the recording frequency:

Fire pump operational hours will be recorded each month.

Reporting:

a. Describe what is to be reported and frequency of reporting:

Annual hours of operation, actual emissions via annual emissions inventory

b. Reporting start date: ***TBD***

Work Practice Standard:

Describe each: ***Equipment will be operated in accordance with manufacturer's specifications and good combustion practices to maintain combustion efficiency. Equipment will be maintained at a minimum as recommended by manufacturer's specifications.***

Section F - Flue and Air Contaminant Emission

1. Estimated Atmospheric Emissions*

Pollutant	Maximum emission rate			Calculation/ Estimation Method
	specify units	lbs/hr	tons/yr.	
PM				
PM_{10}				
SO_x				
CO				
NO_x				
VOC				
Others: (e.g., HAPs)	-----	-----	-----	-----

Please refer to the attached Emissions Inventory Tables – Appendix E.

* These emissions must be calculated based on the requested operating schedule and/or process rate e.g., operating schedule for maximum limits or restricted hours of operation and /or restricted throughput. Describe how the emission values were determined. Attach calculations.

2. Stack and Exhauster

Stack Designation/Number ***S201***

List Source(s) or source ID exhausted to this stack:
P201

% of flow exhausted to stack: ***100%***

Stack height above grade (ft.) ***90***
Grade elevation (ft.) ***~760***

Stack diameter (ft) or Outlet duct area (sq. ft.)
10.5

f. Weather Cap ☒ YES ☐ NO

Distance of discharge to nearest property line (ft.). Locate on topographic map.
~450

Does stack height meet Good Engineering Practice (GEP)?
No

If modeling (estimating) of ambient air quality impacts is needed, attach a site plan with buildings and their dimensions and other obstructions. ***N/A***

Location of stack** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
S201	***41***	***39***	***38.4***	***-76***	***13***	***31.6***

Stack exhaust
Volume ***N/A*** ACFM Temperature ***N/A*** °F Moisture ***N/A*** %

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.
N/A

Exhauster (attach fan curves) ***N/A*** in water ***N/A*** HP @ ***N/A*** RPM.

** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.

Section G - Attachments

Number and list all attachments submitted with this application below:

Appendix A – General Information Form

Appendix B – Process/Addendum/Fees Forms

Appendix C – Compliance Review Form

Appendix D – Municipal Notification Letters

Appendix E – Emissions Calculations

2700-PM-BAQ0030e Rev. 2/2021

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

AIR QUALITY FEES FOR NEW PLAN APPROVAL

Company Information	
Federal Tax ID: ***33-2410502***	Firm Name: ***KDI Wyalusing Power LLC***
Permit # (If any):	Facility Name: ***Wyalusing Energy Center***
Municipality: ***Wyalusing Township***	County: ***Bradford County***
Contact Person Name: ***Debra Raggio***	Telephone Number: ***703-778-0842***
E-mail: ***draggio@newfortressenergy.com***	

New Plan Approval (The following fees are cumulative.)

Line #	Check the appropriate boxes below	Type of review requested	Fee 2021 - 2025	Total Fees
1	Base Fee	Subchapter B	$2,500	***(a)***
2	☐	New Source Review, Subchapter E	$7,500	
3	☒	NSPS/NESHAP /MACT standard A. # of NSPS: 3 B. # of NESHAP/MACT: ____ C. Add lines A and B: ____ D. Maximum applicable standards: 3 E. Enter smaller of line C or line D: ____ Multiply line E by $2,500 and enter the amount in the "Total Fees" column.	$2,500	***$7,500***
4	☐	Case-by-Case MACT	$9,500	
5	☐	Prevention of Significant Deterioration (PSD) requirements. Subchapter D	$32,500	
6	☐	Plantwide Applicability Limit (PAL) for NSR regulated pollutants or PAL for PSD regulated pollutants or both	$7,500	
7	☐	Risk Assessment Analysis – Inhalation only	$10,000	
8	☐	Risk Assessment Analysis – Multi-pathway	$25,000	
		Add Lines 1 thru 8 of Total Fees column and write it here. →		***$7,500***

(a) In accordance with discussions with Pennsylvania Department of Environmental Protection Bureau of Air Quality, Northcentral Region, the Base Fee for Subchapter B (Public Submission Fee) has already been submitted under Transaction Reference 270183, Reference # 70287374384, and will be credited to this submission.

APPENDIX C -
COMPLIANCE REVIEW FORM

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

AIR POLLUTION CONTROL ACT COMPLIANCE REVIEW FORM

Fully and accurately provide the following information, as specified. Attach additional sheets as necessary.

Type of Compliance Review Form Submittal (check all that apply)

☒ Original Filing
☐ Amended Filing

Date of Last Compliance Review Form Filing: _____/_____/_____

Type of Submittal

☒ New Plan Approval ☐ New Operating Permit ☐ Renewal of Operating Permit
☐ Extension of Plan Approval ☐ Change of Ownership ☐ Periodic Submission (@ 6 mos)
☐ Other: _____

SECTION A. GENERAL APPLICATION INFORMATION

Name of Applicant/Permittee/("applicant")
(non-corporations-attach documentation of legal name)
KDI Wyalusing Power LLC

Address ***44074 Route 6***
Wyalusing, PA 18853

Telephone ***703-778-0842*** **Taxpayer ID#** ***33-2410502***

Permit, Plan Approval or Application ID# ***Not Applicable (N/A)***

Identify the form of management under which the applicant conducts its business (check appropriate box)

☐ Individual ☐ Syndicate ☐ Government Agency
☐ Municipality ☐ Municipal Authority ☐ Joint Venture
☐ Proprietorship ☐ Fictitious Name ☐ Association
☐ Public Corporation ☐ Partnership ☐ Other Type of Business, specify below:
☒ Private Corporation ☐ Limited Partnership

Describe below the type(s) of business activities performed.

Natural gas fueled power generation to operate a third party data center.

SECTION B. GENERAL INFORMATION REGARDING "APPLICANT"

If applicant is a corporation or a division or other unit of a corporation, provide the names, principal places of business, state of incorporation, and taxpayer ID numbers of all domestic and foreign parent corporations (including the ultimate parent corporation), and all domestic and foreign subsidiary corporations of the ultimate parent corporation with operations in Pennsylvania. Please include all corporate divisions or units, (whether incorporated or unincorporated) and privately held corporations. (A diagram of corporate relationships may be provided to illustrate corporate relationships.) Attach additional sheets as necessary.

Unit Name	Principal Places of Business	State of Incorporation	Taxpayer ID	Relationship to Applicant
New Energy Fortress Energy Inc.	*New York*	*Delaware*	*83-1482060*	*Parent corporation*
NFE Sub LLC	*New York*	*Delaware*	*83-3234314*	*Parent corporation*
NFE US Holdings LLC	*New York*	*Delaware*	*86-1391098*	*Parent corporation*
New Fortress Intermediate LLC	*New York*	*Delaware*	*83-3254137*	*Parent corporation*
NFE Atlantic Holdings LLC	*New York*	*Delaware*	*82-4783444*	*Parent corporation*
Klondike Digital Infrastructure LLC	*New York*	*Delaware*	*99-4463244*	*Sibling corporation*
Klondike Digital Infra Inc.	*New York*	*Delaware*	*N/A*	*Sibling corporation*
KDI Wyalusing Holdings LLC	*Pennsylvania*	*Delaware*	*33-2410502*	*Self*
Wyalusing Energy Center	*Pennsylvania*	*To Be Determined (TBD)*	*TBD*	*Subsidiary corporation*

SECTION C. SPECIFIC INFORMATION REGARDING APPLICANT AND ITS "RELATED PARTIES"

Pennsylvania Facilities. List the name and location (mailing address, municipality, county), telephone number, and relationship to applicant (parent, subsidiary or general partner) of applicant and all Related Parties' places of business, and facilities in Pennsylvania. Attach additional sheets as necessary.

Unit Name	Street Address	County and Municipality	Telephone No.	Relationship to Applicant
Klondike Digital Infrastructure LLC	*44074 Route 6 Wyalusing, PA 18853*	*Bradford County, Wyalusing Township*	*703-778-0842*	*Applicant*

Provide the names and business addresses of all general partners of the applicant and parent and subsidiary corporations, if any.

Name	Business Address
New Energy Fortress Energy Inc.	*111 W 19th Street, 8th Floor, New York, NY 10011*

NFE Sub LLC	*111 W 19th Street, 8th Floor, New York, NY 10011*
NFE US Holdings LLC	*111 W 19th Street, 8th Floor, New York, NY 10011*
New Fortress Intermediate LLC	*111 W 19th Street, 8th Floor, New York, NY 10011*
NFE Atlantic Holdings LLC	*111 W 19th Street, 8th Floor, New York, NY 10011*
Klondike Digital Infrastructure LLC	*111 W 19th Street, 8th Floor, New York, NY 10011*
Klondike Digital Infra Inc.	*111 W 19th Street, 8th Floor, New York, NY 10011*
KDI Wyalusing Holdings LLC	*111 W 19th Street, 8th Floor, New York, NY 10011*
Wyalusing Energy Center Power Plant	*TBD*

List the names and business address of persons with overall management responsibility for the process being permitted (i.e. plant manager).

Name	Business Address
Debra L. Raggio, Executive Vice President, Head of Regulatory	*111 W 19th St, 10011, Second Floor, New York, NY*
Mike Compton, President	*111 W 19th St, 10011, Second Floor, New York, NY*
Lily Hassan, VP of Permitting	*111 W 19th St, 10011, Second Floor, New York, NY*

Plan Approvals or Operating Permits. List all plan approvals or operating permits issued by the Department or an approved local air pollution control agency under the APCA to the applicant or related parties that are currently in effect or have been in effect at any time 5 years prior to the date on which this form is notarized. This list shall include the plan approval and operating permit numbers, locations, issuance and expiration dates. Attach additional sheets as necessary.

Air Contamination Source	Plan Approval/ Operating Permit#	Location	Issuance Date	Expiration Date
Natural Gas Processing Plant	*08-00058A*	*Wyalusing Township, Bradford County, PA*	*July 24, 2019*	*January 23, 2021*

Compliance Background. (Note: Copies of specific documents, if applicable, must be made available to the Department upon its request.) List all documented conduct of violations or enforcement actions identified by the Department pursuant to the APCA, regulations, terms and conditions of an operating permit or plan approval or order by applicant or any related party, using the following format grouped by source and location in reverse chronological order. Attach additional sheets as necessary. See the definition of "documented conduct" for further clarification. Unless specifically directed by the Department, deviations which have been previously reported to the Department in writing, relating to monitoring and reporting, need not be reported.

Date	Location	Plan Approval/ Operating Permit#	Nature of Documented Conduct	Type of Department Action	Status: Litigation Existing/Continuing or Corrected/Date	Dollar Amount Penalty
N/A						$
						$
						$
						$
						$
						$
						$
						$
						$
						$

List all incidents of deviations of the APCA, regulations, terms and conditions of an operating permit or plan approval or order by applicant or any related party, using the following format grouped by source and location in reverse chronological order. This list must include items both currently known and unknown to the Department. Attach additional sheets as necessary. See the definition of "deviations" for further clarification.

Date	Location	Plan Approval/ Operating Permit#	Nature of Deviation	Incident Status: Litigation Existing/Continuing Or Corrected/Date
N/A				

<u>CONTINUING OBLIGATION</u>. Applicant is under a continuing obligation to update this form using the Compliance Review Supplemental Form if any additional deviations occur between the date of submission and Department action on the application.

VERIFICATION STATEMENT
Subject to the penalties of Title 18 Pa.C.S. Section 4904 and 35 P.S. Section 4009(b)(2), I verify under penalty of law that I am authorized to make this verification on behalf of the Applicant/Permittee. I further verify that the information contained in this Compliance Review Form is true and complete to the best of my belief formed after reasonable inquiry. I further verify that reasonable procedures are in place to ensure that "documented conduct" and "deviations" as defined in 25 Pa Code Section 121.1 are identified and included in the information set forth in this Compliance Review Form.
 ***12/26/2024***
Signature — Date
Debra Raggio
Name (Print or Type)
Executive Vice President, Head of Regulatory
Title

APPENDIX D -
MUNICIPAL NOTIFICATION LETTERS

111 W 19th Street, 8th Floor
New York, NY 10011

December 20, 2024

Duane Naugle
Planning Director
Bradford County Planning Office
Bradford County Public Safety Center
29 VanKuren Drive
Suite 1
Towanda, PA 18848

Re: Notification of Plan Approval Application
Wyalusing Energy Center
Wyalusing Township, Bradford County, Pennsylvania

Dear Mr. Naugle:

Pursuant to Title 25, Subpart C, Article III, Section 127.43a of the Pennsylvania Code, KDI Wyalusing Power LLC hereby notifies Wyalusing Township of its intent to submit a Plan Approval Application to the Pennsylvania Department of Environmental Protection (PADEP) Northcentral Regional Office for the proposed Wyalusing Energy Center. This application is being submitted for approval to build a power generation facility that will be composed of eight (8) simple-cycle combustion turbines, each equipped with selective catalytic reduction (SCR) and oxidation catalyst emissions control devices. The proposed project will also include installation of a diesel fire pump. Construction is expected to commence in June 2025. KDI Wyalusing Power LLC will provide a copy of the application to you upon its submittal to PADEP.

PADEP will accept comments on the application during a 30-day period which begins upon your receipt of this notification. Any comments concerning the application should be transmitted to PADEP within 30 days of your receipt of this letter, at the following address: Commonwealth of Pennsylvania, Department of Environmental Protection, Northcentral Regional Office, 208 West 3rd Street, Suite 101, Williamsport, PA 17701.

Should you have any questions about this submittal, please feel free to contact me at 703-778-0841 x123 or draggio@newfortressenergy.com.

Sincerely,
KDI Wyalusing Power LLC

Debra Raggio
Executive Vice President, Head of Regulatory

cc: Lily Hassan (KDI)
Merritt McGlynn (ALL4 LLC)
John Slade (ALL4 LLC)

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number

1Z3225YY0291469021

Weight

1.00 LBS

Service

UPS 2nd Day Air®

Shipped / Billed On

12/20/2024

Delivered On

12/21/2024 1:31 P.M.

Delivered To

TOWANDA, PA, US
Received By

INSIDE

Left At

Inside Delivery

Please print for your records as photo and details are only available for a limited time.

Sincerely,

UPS

Tracking results provided by UPS: 12/23/2024 11:21 A.M. EST

111 W 19th Street, 8th Floor
New York, NY 10011

December 20, 2024

Marvin Meteer
Township Supervisor
Wyalusing Township
2473 Old Stage Coach Road
Wyalusing, PA 18853

Re: Notification of Plan Approval Application
Wyalusing Energy Center
Wyalusing Township, Bradford County, Pennsylvania

Dear Mr. Meteer:

Pursuant to Title 25, Subpart C, Article III, Section 127.43a of the Pennsylvania Code, KDI Wyalusing Power LLC hereby notifies Wyalusing Township of its intent to submit a Plan Approval Application to the Pennsylvania Department of Environmental Protection (PADEP) Northcentral Regional Office for the proposed Wyalusing Energy Center. This application is being submitted for approval to build a power generation facility that will be composed of eight (8) simple-cycle combustion turbines, each equipped with selective catalytic reduction (SCR) and oxidation catalyst emissions control devices. The proposed project will also include installation of a diesel fire pump. Construction is expected to commence in June 2025. KDI Wyalusing Power LLC will provide a copy of the application to you upon its submittal to PADEP.

PADEP will accept comments on the application during a 30-day period which begins upon your receipt of this notification. Any comments concerning the application should be transmitted to PADEP within 30 days of your receipt of this letter, at the following address: Commonwealth of Pennsylvania, Department of Environmental Protection, Northcentral Regional Office, 208 West 3rd Street, Suite 101, Williamsport, PA 17701.

Should you have any questions about this submittal, please feel free to contact me at 703-778-0841 x123 or draggio@newfortressenergy.com.

Sincerely,
KDI Wyalusing Power LLC

Debra Raggio
Executive Vice President, Head of Regulatory

cc: Lily Hassan (KDI)
Merritt McGlynn (ALL4 LLC)
John Slade (ALL4 LLC)

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number

1Z3225YY0298999115

Weight

1.00 LBS

Service

UPS 2nd Day Air®

Shipped / Billed On

12/20/2024

Delivered On

12/21/2024 5:34 P.M.

Delivered To

WYALUSING, PA, US
Left At

Front Door

Please print for your records as photo and details are only available for a limited time.

Sincerely,

UPS

Tracking results provided by UPS: 12/23/2024 11:20 A.M. EST

APPENDIX E -
EMISSIONS CALCULATIONS

Table E-1

Performance/Emissions Specifications for Single-Cycle Combustion Turbine [(a)]

KDI Wyalusing Power LLC - Wyalusing, PA

Specifications		
Case Number		**5**
Case Description		59°F, 99.5% Load
Site Conditions		
Ambient Temperature	°F	59
Ambient Relative Humidity	%	60%
Plant Status		
Gas Turbine Load	%	99.50
Gas Turbines Operating	-	1
Fuel Data (Natural Gas)		
Combustion Turbine Heat Consumption	MMBtu/hr, HHV	[redacted]
Pre-Control Exhaust Gas		
Ar	%Vol	0.86
CO_2	%Vol	3.35
H_2O	%Vol	11.49
N_2	%Vol	71.68
O_2	%Vol	12.62
Molecular Weight	lb/lbmol	28.00
Temperature	°F	921.90
Mass Flow	lb/hr	[redacted]
Standard Volume Flow	Standard ft^3/min (SCFM)	[redacted]
Dry Standard Volume Flow	DSCFM	[redacted]
Dry Standard Volume Flow	DSCFM @ 15% O_2	[redacted]
Pre-Control Exhaust Gas Emissions		
NO_X	ppmvd @ 15% O_2	25.00
NO_X	lb/hr	27.81
CO	ppmvd @ 15% O_2	60.60
CO	lb/hr	41.05
VOC	ppmvd @ 15% O_2 as CH_4	7.30
VOC	ppmvd @ 15% O_2 as C_3H_8	2.43
VOC	lb/hr as methane	2.83
VOC	lb/hr as propane	2.60
Catalyst Inlet Exhaust Gas		
Tempering Air Flow	Actual ft^3/min (ACFM)	[redacted]
Tempering Air Flow	lb/hr	[redacted]
Ar	%Vol	0.87
CO_2	%Vol	2.94
H_2O	%Vol	10.28
N_2	%Vol	72.31
O_2	%Vol	13.60
Molecular Weight at Inlet	lb/lbmol	28.09
Temperature at Inlet	°F	823.58
Mass Flow at Inlet	lb/hr	[redacted]
Standard Volume Flow at Inlet	Standard ft^3/min (SCFM)	[redacted]
Dry Standard Volume Flow at Inlet	DSCFM	[redacted]
Dry Standard Volume Flow at Inlet	DSCFM @ 15% O_2	[redacted]

Table E-1

Performance/Emissions Specifications for Single-Cycle Combustion Turbine [a]

KDI Wyalusing Power LLC - Wyalusing, PA

Specifications		
Case Number		**5**
Case Description		59°F, 99.5% Load
Post-Control Exit Exhaust Gas Emissions		
NO_X	ppmvd @ 15% O_2	2.50
NO_X	lb/hr	2.40
NO_X	lb/MMBtu	7.70E-03
CO	ppmvd @ 15% O_2	5.00
CO	lb/hr	2.93
CO	lb/MMBtu	9.37E-03
VOC	ppmvd @ 15% O_2 as CH_4	3.70
VOC	ppmvd @ 15% O_2 as C_3H_8	1.23
VOC	lb/hr as methane	1.43
VOC	lb/hr as propane	1.31
VOC	lb/MMBtu as propane	4.21E-03
NH_3 Slip	ppmvd @ 15% O_2	5.00
NH_3 Slip	lb/hr	2.06
CO_2	lb/hr	36,531.63
CO_2	lb/MMBtu	116.98
SO_X	lb/hr as SO_2	0.44
SO_2 [c]	lb/MMBtu	1.39E-03
$PM_{10}/PM_{2.5}$	lb/hr	3.00
$PM_{10}/PM_{2.5}$	lb/MMBtu	9.61E-03
PM filterable	lb/hr	3.00
PM filterable	lb/MMBtu	9.61E-03
Sulfuric Acid Mist[d]	lb/hr	0.07
Sulfuric Acid Mist[d]	lb/MMBtu	2.13E-04
Formaldehyde[e]	lb/hr	0.08
Formaldehyde[e]	lb/MMBtu	2.69E-04
CO_2 [b]	lb/MWh gross	1,281.68
CH_4 [b]	lb/hr	0.69
N_2O [b]	lb/hr	0.07
GHG/CO_2e [b]	lb/hr	36,569.15
GHG/CO2e [b]	lb/MMBtu	117.10
Heat and Mass Balance Summary		
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

[a] As supplied by Sisu Energy & Environmental [redacted] provided 12/19/2024.

[b] CO_2 and CO_2e emissions factors obtained from 40 CFR Part 98, Subpart C, Tables C-1 and C-2. Global warming potentials obtained from Part 98, Subpart A, Table A-1.

Table E-1

Performance/Emissions Specifications for Single-Cycle Combustion Turbine [a]

KDI Wyalusing Power LLC - Wyalusing, PA

40 CFR Part 98, Subpart A, Table A-1	
Pollutant	Global Warming Potential
CO_2	1
CH_4	28
N_2O	265

40 CFR Part 98, Subpart C, Tables C-1 and C-2				
Pollutant	**Value**	**Unit**	**Fuel**	**Reference**
CO_2	53.06	kg/MMBtu	NG	40 CFR Part 98, Subpart C, Table C-1
CH_4	1.00E-03	kg/MMBtu	NG	40 CFR Part 98, Subpart C, Table C-2
N_2O	1.00E-04	kg/MMBtu	NG	40 CFR Part 98, Subpart C, Table C-2

[c] Sulfur emissions factors calculated based on natural gas specifications as provided in Roberts Corrosion Services Natural Gas Analysis Report (attached) dated 01/08/2024.

[d] H_2SO_4 emissions factors conservatively calculated based on 10% molar conversion of SO_2 to SO_3 and 100% conversion of SO_3 to H_2SO_4.

[e] Although the facility is not a major source HAP, formaldehyde emissions conservatively calculated based on 40 CFR Part 63, Subpart YYYY using 91 parts per billion emissions standard.

Table E-2

Natural Gas Specifications

KDI Wyalusing Power LLC - Wyalusing, PA

Natural Gas Fuel Parameter	Value	Units
High Heating Value @ 60°F [(a)]	1,025	Btu/SCF
Sulfur Content [(a)]	0.003	ppm
Sulfur Content [(b)]	0.5	grains/100 scf
SO_2 emissions factor from gas combustion	0.0014	lb/MMBtu

[(a)] Natural gas specifications as provided in Roberts Corrosion Services Natural Gas Analysis Report (attached) dated 01/08/2024.

[(b)] As defined in 40 CFR §72.2 for "pipeline quality natural gas".

Table E-3

Maximum Hourly Heat Input and Post-Control Emissions During Steady-State Operations

KDI Wyalusing Power LLC - Wyalusing, PA

Gross Maximum Electrical Capacity [(a)]	[redacted]	MW total
Maximum CT Heat Input (Natural Gas)[(a)]	[redacted]	MMBtu/hr

Maximum Short Term Emissions Rates Per CT [(b)]			
Pollutant	**Post-Control Emissions Rate**		
	(ppmvd @ 15% O_2)	**(lb/hr)**	**(lb/MMBtu) [(c)]**
NO_X	2.5	2.85	8.61E-03
CO	5.0	3.47	0.01
VOC as propane	3.4	2.19	0.01
NH_3 Slip	5.0	2.18	6.59E-03
CO_2e	--	38,735.43	117.10
SO_2	--	0.46	1.39E-03
PM	--	3.00	0.02
PM_{10} and $PM_{2.5}$	--	3.00	0.02
Formaldehyde	--	0.09	2.62E-04
H_2SO_4	--	0.07	2.13E-04

[(a)] For compliance purposes, KDI has provided a worst-case short-term emissions rate, per CT, based on the maximum emissions rate across all operating loads and ambient conditions.

[(b)] No emissions of fluoride (F), hydrogen sulfide (H_2S), total reduced sulfur (TRS), or lead (Pb) are expected to occur.

[(c)] Lb/MMBtu emissions rates based on higher heating value (HHV) fuel basis.

Table E-4
Combustion Turbine Startup Emissions
KDI Wyalusing Power LLC - Wyalusing, PA

CT Startup Emissions Rates Per CT									
Event	Maximum Duration	NO_X	CO	VOC as Propane	$PM/PM_{10}/PM_{2.5}$	NO_X	CO	VOC as Propane	$PM/PM_{10}/PM_{2.5}$
	(min)	(lb/hr)				(lb/event)			
Startup Phase 1 [(a)]	10	16.20	97.20	3.30	3.00	2.70	16.20	0.55	0.50
Startup Phase 2 [(b)]	20	8.88	17.87	1.57	3.00	2.96	5.96	0.52	1.00
Total Startup	**30**	**25.08**	**115.07**	**4.87**	**6.00**	**5.66**	**22.16**	**1.07**	**1.50**

[(a)] Startup Phase 1 includes the duration of time from the turbine being turned on, to achieving NO_X emissions of 25 parts per million (ppm) with water injection.

[(b)] Startup Phase 2 includes the duration of time after Phase 1 for the turbine's flow to reach the temperature required for the optimum control guaranteed by the selective catalytic reduction and oxidation catalyst control technology. It is assumed that the average control efficiency during Phase 2 of NO_X, CO, and VOC is equal to half of the following guaranteed reductions during steady state operation at 59 °F and 50% load:

Pollutant	Phase 2 Control Efficiency
NO_X	45%
CO	47%
VOC	26%

Table E-5

Combustion Turbine Annual Potential Emissions [(a)(b)]

KDI Wyalusing Power LLC - Wyalusing, PA

Pollutant	PTE (tpy)
NO_X	67.58
CO	85.08
VOC	36.58
PM	83.33
$PM_{10}/PM_{2.5}$	83.33
CO_2e	1,012,416.96
SO_2	12.05
H_2SO_4	1.85

[(a)] Annual potential emissions for the CTs are based on 365 startup events per year and the hourly emissions factors for each pollutant under the parameters below, based on CT reliability data supplied by KDI [redacted]

Number of CTs Operating Simultaneously	Operating Time (hr/yr)
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
Cumulative Total	[redacted]

[(b)] Operating conditions of 59°F at 99.5% load were assumed to be representative of average annual climate conditions based on average temperature data for Binghamton, NY, which is 46°F, obtained from the Cornell Northeast Regional Climate Center: https://www.nrcc.cornell.edu/wxstation/comparative/comparative.html#.

Table E-6

Fire Water Pump Engine Emissions [a]

KDI Wyalusing Power LLC - Wyalusing, PA

Pollutant	Emissions Factor	Emissions Factor Units	Emissions Factor Source	PTE	
				(lb/hr)	(tpy)
NO_X	2.85	g/bhp-hr	40 CFR Part 60, Subpart IIII Table 4 [c]	0.79	0.20
CO	3.70	g/bhp-hr	40 CFR Part 60, Subpart IIII Table 4	1.02	0.25
VOC	0.15	g/bhp-hr	40 CFR Part 60, Subpart IIII Table 4 [c]	0.04	0.01
PM	0.22	g/bhp-hr	40 CFR Part 60, Subpart IIII Table 4 [d]	0.06	0.02
$PM_{10}/PM_{2.5}$	0.24	g/bhp-hr	(d)	0.07	0.02
SO_2	5.50E-03	g/bhp-hr	AP-42 Table 3.4-1 [e]	1.52E-03	3.79E-04
H_2SO_4	8.43E-04	g/bhp-hr	(f)	2.32E-04	5.81E-05
CO_2	73.96	kg/MMBtu	(g)	142.67	35.67
CH_4	3.00E-03	kg/MMBtu	(g)	5.79E-03	1.45E-03
N_2O	6.00E-04	kg/MMBtu	(g)	1.16E-03	2.89E-04
CO_2e	-	-	(g)	143.14	35.79
Pb	9.00E-06	lb/MMBtu	AP-42 Table 1.3-10	7.88E-06	1.97E-06

[a] Pump engine PTE calculated using the following parameters:

Parameter	Value
Fuel	Ultra Low Sulfur Diesel
Number of units	1
BHP	125
Conversion (Btu/hp-hr)	7,000
MMBtu/hr[b]	0.88
Diesel sulfur content, wt. %	0.0015
Max. hrs/yr	500

[b] Calculated from pump engine horsepower and Btu/hp-hr conversion factor found in AP-42 Chapter 3.3.

[c] Published emissions factor is for NO_X+NMHC. Assumed that NO_X emissions are 95% of this factor and VOC emissions are 5% based on "CARB Emission Factor for CI Diesel Engines - Percent HC in Relation to NMHC + NO_X" policy.

[d] It is assumed that $PM_{10} = PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions factors account for both the filterable and condensable portions of PM. The filterable portion of PM_{10} and $PM_{2.5}$ is based on 40 CFR Part 60, Subpart IIII Table 4. The condensable portion of PM_{10} and $PM_{2.5}$ was obtained from AP-42 Chapter 3.4 Table 3.4-2 (10/96).

[e] AP-42 Chapter 3.4 (Large Stationary Diesel and ALL Stationary Duel-fuel Engines) utilized in lieu of AP-42 Chapter 3.3 (Gasoline and Diesel Industrial Engines) since AP-42 Chapter 3.3 SO_2 emissions factor utilizes higher sulfur content than proposed for the Fire Water Pump Engine.

[f] H_2SO_4 emissions factor conservatively based on 10% conversion of SO_2 to SO_3 and 100% conversion of SO_3 to H_2SO_4.

[g] The CO_2 emissions factor is obtained from Table C-1 to 40 CFR Part 98, Subpart C, while CH_4 and N_2O emissions factors are obtained using Table C-2 to 40 CFR Part 98, Subpart C. CO_2e is carbon dioxide equivalent, calculated according to 40 CFR Part 98 Equation A-1:

$$CO_2e = \sum_{i=1}^{n} GHG_i \times GWP_i$$

GHG_i = Mass emissions of each greenhouse gas

GWP_i = Global warming potential for each

n = Number of greenhouse gases emitted.

Pollutant	GWP (100 year)
CO_2	1
CH_4	28
N_2O	265

Table E-7
HAP Potential Emissions
KDI Wyalusing Power LLC - Wyalusing, PA

			Emissions Unit Description	**Combustion Turbines [a]**	**Fire Water Pump**	
			Cumulative Operating Time, hr/yr	[redacted]	500	
			Fuel Type	Natural Gas	ULSD	
			Heat Input, Max. MMBtu/hr each unit	[redacted]	0.88	
Emissions Factor Reference (unless otherwise noted)		**Emissions Factors for Natural Gas-Fired Turbines**	**Emissions Factors for Small Diesel Engines**	**Annual Emissions**		
		AP-42 Ch 3.1 Table 3.1-3	**AP-42 Ch. 3.3 Table 3.3-2**	**CTs**	**Fire Water Pump Engine**	**Combined Annual Emissions**
HAP	**CAS Number**	**(lb/MMBtu)**	**(lb/MMBtu)**	**(tpy)**		
1,3-Butadiene	106-99-0	4.30E-07	3.91E-05	3.72E-03	8.55E-06	3.73E-03
Acenaphthene	83-32-9	-	1.42E-06	-	3.11E-07	3.11E-07
Acenaphthylene	208-96-8	-	5.06E-06	-	1.11E-06	1.11E-06
Acetaldehyde	75-07-0	4.00E-05	7.67E-04	0.35	1.68E-04	0.35
Anthracene	120-12-7	-	1.87E-06	-	4.09E-07	4.09E-07
Acrolein	107-02-8	6.40E-06	9.25E-05	0.06	2.02E-05	0.06
Benz(a)anthracene	56-55-3	-	1.68E-06	-	3.68E-07	3.68E-07
Benzene	71-43-2	1.20E-05	9.33E-04	0.10	2.04E-04	0.10
Benzo(a)pyrene	50-32-8	-	1.88E-07	-	4.11E-08	4.11E-08
Benzo(b)fluoranthene	205-99-2	-	9.91E-08	-	2.17E-08	2.17E-08
Benzo(g,h,i)perylene	191-24-2	-	4.89E-07	-	1.07E-07	1.07E-07
Benzo(k)fluoranthene	207-08-9	-	1.55E-07	-	3.39E-08	3.39E-08
Chrysene	218-01-9	-	3.53E-07	-	7.72E-08	7.72E-08
Dibenz(a,h)anthracene	53-70-3	-	5.83E-07	-	1.28E-07	1.28E-07
Ethylbenzene	100-41-4	3.20E-05	-	0.28	-	0.28
Fluoranthene	206-44-0	-	7.61E-06	-	1.66E-06	1.66E-06
Fluorene	86-73-7	-	2.92E-05	-	6.39E-06	6.39E-06
Formaldehyde [b]	50-00-0	2.69E-04	1.18E-03	2.32	2.58E-04	2.32
Indeno(1,2,3-cd)pyrene	193-39-5	-	3.75E-07	-	8.20E-08	8.20E-08
Lead [c]	7439-92-1	-	9.00E-06	-	1.97E-06	1.97E-06
Naphthalene	91-20-3	1.30E-06	8.48E-05	0.01	1.86E-05	0.01
Phenanthrene	85-01-8	-	2.94E-05	-	6.43E-06	6.43E-06
Polycyclic Aromatic Hydrocarbons	Various	2.20E-06	-	0.02	-	0.02
Propylene Oxide	75-56-9	2.90E-05	-	0.25	-	0.25
Pyrene	129-00-0	-	4.78E-06	-	1.05E-06	1.05E-06
Toluene	108-88-3	1.30E-04	4.09E-04	1.12	8.95E-05	1.12
Xylenes	1330-20-7	6.40E-05	2.85E-04	0.55	6.23E-05	0.55
		Maximum Individual HAP (tpy)				**2.32**
		Total HAP (tpy)		**5.07**	**8.49E-04**	
						5.07

[a] Annual potential emissions for the CTs assume representative average annual operating conditions of 99.5% load at 59 °F.

[b] Combustion turbine formaldehyde emissions factor based on a maximum exhaust concentration of 91 parts per billion (ppb) as listed in Table 1 to 40 CFR Part 63, Subpart YYYY.

[c] Pump engine lead emissions factor from AP-42 Chapter 1.3 Table 1.3-10.

Table E-8
Emissions Summary and Major Source Threshold Applicability Table
KDI Wyalusing Power LLC - Wyalusing, PA

Source	PM	PM_{10}	$PM_{2.5}$	CO	VOC [(a)]	NO_X [(a)]	SO_2	Pb	Individual HAP [(b)]	Total HAP	CO_2e [(c)]
	(tpy)										
Combustion Turbines	83.33	83.33	83.33	85.08	36.58	67.58	12.05	-	2.32	5.07	1,012,417
Fire Water Pump Engine	0.02	0.02	0.02	0.25	0.01	0.20	3.79E-04	1.97E-06	2.58E-04	8.49E-04	35.79
Total Project Emissions	**83.34**	**83.35**	**83.35**	**85.33**	**36.59**	**67.78**	**12.05**	**1.97E-06**	**2.32**	**5.07**	**1,012,453**
PSD/NNSR Major Source Threshold	250	250	250	250	50	100	250	250	N/A	N/A	N/A
PSD/NNSR Major Source?	No	No	No	No	No	No	No	No	N/A	N/A	N/A
Title V Major Source Threshold	100	100	100	100	50	100	100	100	10	25	N/A
Title V Major Source?	No	No	No	No	No	No	No	No	No	No	N/A

[(a)] Major Source Threshold for the ozone transport region (OTR) pursuant to 25 Pa. Code §127.201(c).

[(b)] The individual HAP with the highest total project emissions is formaldehyde.

[(c)] Per the June 23, 2014 Supreme Court decision in Utility Air Regulatory Group v. U.S. EPA, U.S. EPA may not treat GHGs as an air pollutant for the specific purpose of determining whether a source is required to obtain a PSD or Title V Operating Permit.

Extended Gas Analysis

ROBERTS CORROSION SERVICES

RCS Sample ID	R4223	Unique ID	Y Osburn
Client Company	Arsenal Resources	GPS Lat	-
Field Location	-	GPS Long	-
Sample Date	01/08/24	Received at Lab	01/08/24
Sample Time	11:20	Analysis Date	01/08/24
Pressure / Temp	235 psig / NR degF	Analysis Time	17:49
Collected By	DCC	Analyzed By	RRC
Bottle Number	R0009 / 500cc Sulfur Cylinder	Approved By	MJR

Components			Mole %	Wt%	GPM
Oxygen	O_2	Oxygen	0.00577	0.01114	
Carbon Dioxide	CO_2	Carbon Dioxide	0.40382	1.07265	
Nitrogen	N_2	Nitrogen	0.33046	0.55873	
Methane	CH_4	Methane	96.70949	93.64025	
Ethane	C_2H_6	Ethane	2.45322	4.45223	0.656
Propane	C_3H_8	Propane	0.09047	0.24079	0.025
Isobutane	C_4H_{10}	2-Methylpropane	0.00172	0.00604	0.001
Butane	C_4H_{10}	n-Butane	0.00450	0.01579	0.001
Isopentane	C_5H_{12}	2-Methylbutane	0.00029	0.00128	0.000
Pentane	C_5H_{12}	n-Pentane	0.00019	0.00084	0.000
Cyclopentane	C_5H_{10}	cyclopentane	0.00001	0.00006	0.000
Benzene	C_6H_6	benzene	0.00000	0.00000	0.000
Isohexane	C_6H_{14}	2-Methylpentane	0.00003	0.00013	0.000
Hexanes	C_6H_{14}	n-Hexane	0.00001	0.00007	0.000
Cyclohexane	C_6H_{12}	cyclohexane	0.00000	0.00000	0.000
Toluene	C_7H_8	toluene	0.00000	0.00000	0.000
Isoheptane	C_7H_{16}	2-Methylhexane	0.00000	0.00000	0.000
Heptanes	C_7H_{16}	n-Heptane	0.00000	0.00000	0.000
Methylcyclohexane	C_7H_{14}	Methylcyclohexane	0.00000	0.00000	0.000
Ethylbenzene	C_8H_{10}	ethylbenzene	0.00000	0.00000	0.000
1,4-Xylene	C_8H_{10}	p-xylene	0.00000	0.00000	0.000
1,3-Xylene	C_8H_{10}	m-xylene	0.00000	0.00000	0.000
1,2-Xylene	C_8H_{10}	o-xylene	0.00000	0.00000	0.000
Isooctane	C_8H_{18}	2,2,4-trimethylpentane	0.00000	0.00000	0.000
Octanes	C_8H_{18}	n-Octane	0.00000	0.00000	0.000
Nonanes	C_9H_{20}	n-Nonane	0.00000	0.00000	0.000
Decane	$C_{10}H_{22}$	n-Decane	0.00000	0.00000	0.000
Undecane	$C_{11}H_{24}$	n-undecane	0.00000	0.00000	0.000
Dodecane	$C_{12}H_{26}$	n-dodecane	0.00000	0.00000	0.000
Tridecane	$C_{13}H_{28}$	n-tridecane	0.00000	0.00000	0.000
Tetradecane	$C_{14}H_{30}$	n-tetradecane	0.00000	0.00000	0.000
		Totals:	**100.00000**	**100.00000**	**0.683**

Extended Gas Analysis

RCS Sample ID	R4223	Unique ID	Y Osburn
Client Company	Arsenal Resources	GPS Lat	-
Field Location	-	GPS Long	-
Sample Date	01/08/24	Received at Lab	01/08/24
Sample Time	11:20	Analysis Date	01/08/24
Pressure / Temp	235 psig / NR degF	Analysis Time	17:49
Collected By	DCC	Analyzed By	RRC
Bottle Number	R0009 / 500cc Sulfur Cylinder	Approved By	MJR

BTU/SCF (Dry)	1024.83	14.696 PSIA at 60.0 degF	
BTU/SCF (Sat)	1007.29		
Z Factor (Dry)	0.9979	Ideal Specific Gravity (G)	0.572
Z Factor (sat)	0.9976	Real Specific Gravity (G)	0.573

Total Raw Mole % (Dry)	88.82	Wobbe Index (Dry)	1353.84
Total GPM	17.176	Total Molecular Weight (Dry)	16.57

Total Sulfur Analysis

Components		ppm
H_2S	Hydrogen Sulfide	<0.003
COS	Carbonyl Sulfide	<0.003
CS_2	Carbon Disulfide	<0.003
CH_3SH	Methylmercaptan	<0.003
C_2H_6S	Ethyl Mercaptan	<0.003
C_2H_6S	Dimethyl Sulfide	<0.003
C_3H_8S	Propyl Mercaptan	<0.003
$C_2H_6S_2$	Dimethyl Disulfide	<0.003
$C_4H_{10}S$	Diethyl Sulfide	<0.003
$C_4H_{10}S$	t-Butyl Mercaptan	<0.003
C_3H_8S	Methyl Ethyl Sulfide	<0.003
$C_4H_{10}S_2$	Diethyl Disulfide	<0.003
	Total:	0.000

Analytical Method for Gas Analysis	GPA 2261-20, GPA 2286-14
Analytical Method for Sulfur Analysis	ASTM D6228-10
Analytical Method for Calculations	GPA 2172-09

Limit of Detection = 0.003 PPMV for Sulfur components and 0.00001 Mole Percent for Hydrocarbons

Lab Comments