Pennsylvania
Department of
Environmental Protection

MEMO

TO	File
FROM	Justin Haley JDH 11/18/2025 New Source Review Section Air Quality Program
THROUGH	David G. Balog, P.E. *DGB 11/18/2025* Chief, New Source Review Section Air Quality Program Lori McNabb *LLM 11/18/2025* Program Manager Air Quality Program
DATE	November 18, 2025
RE	Plan Approval No. 32-00457A Homer City Generation LP APS# 1136415, AUTH# 1525661 PF# 883429, PUP Ref# 307848 Homer City Generation LP Center Township, Indiana County

MESSAGE:
On April 4, 2025, the Department of Environmental Protection (DEP) received a plan approval application from Homer City Generation LP (Homer City) for a project to construct and operate a new natural gas-fired electrical generating station. The project is located at the site of the former Homer City Generating Station, a retired coal-fired power plant, at 1750 Power Road, Homer City, PA 15748, in Indiana County.

The proposed project involves the installation of seven (7) GE Vernova (GE) 7HA.02 combined-cycle combustion turbines and ten (10) Mitsubishi Power FT8 Gas Turbine MOBILEPAC simple-cycle aeroderivative gas turbines, along with associated ancillary equipment. The new turbines will be fueled exclusively by natural gas and equipped with Selective Catalytic Reduction (SCR) to control nitrogen oxide (NOx) emissions and an oxidation catalyst to control carbon monoxide (CO) and volatile organic compound (VOC) emissions. The project is subject to Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) requirements.

Facility Classification
The facility is classified under the Standard Industrial Classification (SIC) code system as **4911 (Electric Services)** and under the North American Industrial Classification System (NAICS) as **221112 (Fossil Fuel Electric Power Generation)**. Based on its potential to emit, Homer City is classified as a "major stationary source."

Project Description
The following sources are incorporated into this plan approval:

- **Seven (7) GE 7HA.02 Combined-Cycle Combustion Turbines (Source IDs 101-107)**, each with a supplemental 1,034.4 MMBTU/hr duct burner (0.973 MMCF/hr). These units use Dry Low-NOx (DLN) combustors in addition to SCR and an oxidation catalyst for emissions control.

- **Ten (10) Mitsubishi FT8 Simple-Cycle Aeroderivative Gas Turbines (Source IDs 108-117)**. These units use water injection in the combustor in addition to SCR and an oxidation catalyst.

- **Three (3) 67 MMBTU/hr Auxiliary Boilers (Source IDs 031-033)**. These boilers assist the combined-cycle units during startup and are each limited to 438 hours of operation and a fuel usage of 29,346 MMBtu per year.

- **Ten (10) 2.5 MW Emergency Generator Engines (Source IDs 118-127)**.

- **Two (2) 1.0 MW Emergency Generator Engines (Source IDs 128-129)**.

- **One (1) 399 BHP Fire Water Pump Engine (Source ID 130)**, limited to 500 hours of operation per year.

- **Seven (7) 10.8 MMBTU/hr Fuel Gas Heaters (Source IDs 201-207)**, used to preheat natural gas for the turbines.

- **Seven (7) Cooling Towers (Source IDs 301-307)**, each with eight cells, to serve the combined-cycle units.

- **Circuit Breakers/Switch Gear (Source ID 401)**, containing SF6 insulating gas. The circuit breakers shall be state-of-the-art sealed enclosed-pressure units equipped with low-pressure alarms triggered when 10% of the SF6 by weight has escaped and a low-pressure lockout.

- **Associated Control Devices**, including Selective Catalytic Reduction (SCR) and Oxidation Catalysts for all turbines.

- **Fugitive Emissions (Source ID 701)** from natural gas piping components.

- **Stack Heights:** The height of the exhaust stack associated with each combined-cycle combustion turbine shall not be less than 190'-0" above grade, and the height for each simple-cycle turbine shall not be less than 90'-0" above grade.

- **Inlet Air Filters:** High-efficiency inlet air filters shall be used in the air inlet section of the turbines. The permittee shall keep on hand a full set of filters to replace any filter(s) due to routine operation.

All combustion sources will be fired exclusively with pipeline-quality natural gas, with the exception of the emergency generators and fire pump, which will use ultra-low sulfur diesel (ULSD). The project also includes various exempt storage tanks for ULSD, lubricating oil, and aqueous ammonia.

Process Description
This section provides a summary of the operational process for the new emission sources at the facility.

- **Combined-Cycle Turbines:** The seven GE 7HA.02 turbines operate in a combined-cycle configuration. Initially, ambient air is compressed and mixed with natural gas in a Dry Low-NOx (DLN) combustor. The hot combustion gases expand through a power turbine, driving a generator to produce electricity. The hot exhaust from the power turbine is then directed to a Heat Recovery Steam Generator (HRSG), which uses the waste heat to produce high-pressure steam. This steam drives a separate steam turbine, generating additional electricity. Each HRSG is also equipped with duct burners for supplemental firing. Exhaust gases are treated by a Selective Catalytic Reduction (SCR) system to control NOx and an oxidation catalyst to control CO, VOC, and organic HAPs before being released.

- **Simple-Cycle Turbines:** The ten Mitsubishi FT8 turbines operate in a simple-cycle configuration. Similar to the combined-cycle units, air is compressed and combusted with natural gas to drive a power turbine and generate electricity. However, these units do not have an HRSG or steam turbine. To control NOx formation in the combustor, water is injected into the combustion zone. The exhaust gases are then further treated by an SCR system for NOx control and an oxidation catalyst for CO, VOC, and organic HAP control.

- **Auxiliary Boilers:** Three natural gas-fired auxiliary boilers will be used to support the startup of the combined-cycle units. By providing steam to pre-heat the steam turbine seals and bearings, the boilers allow for a more rapid and efficient startup. The boilers are

equipped with ultra-low NOx burners and are each limited to 438 hours of operation per year.

- **Emergency Engines:** The facility will include twelve emergency generator engines (ten rated at 2.5 MW and two at 1.0 MW) and one fire water pump engine (~400 bhp). All engines are fired with ultra-low sulfur diesel (ULSD) and are limited to 500 hours of operation per year. The generators are required to meet EPA's Tier 4 emission standards, and the fire pump is required to meet Tier 3 standards.

- **Ancillary Equipment:**

    - **Fuel Gas Heaters:** Seven natural gas-fired heaters, equipped with ultra-low NOx burners, will be used to preheat the natural gas fuel supply to prevent freezing of regulating valves.

    - **Cooling Towers:** Seven cooling towers, each with eight cells, will serve the combined-cycle units. Their purpose is to condense the steam exiting the steam turbine back into water, which is then recirculated to the HRSG. Each cell is equipped with high-efficiency drift eliminators to minimize particulate matter emissions.

    - **Fugitive Emissions:** The project includes sources of fugitive emissions, primarily sulfur hexafluoride (SF6) from new gas-insulated switchgear and methane (CH4) from natural gas piping components.

Estimated Emissions

The facility-wide potential to emit (PTE) in tons per year (tpy) is broken down by source group as follows:

Source Group (Source ID)	PM (Total)	PM10	PM2.5	NOx	CO	VOC	SOx	H2SO4	Total HAPs	Formaldehyde	GHG (CO2e)
Combined-Cycle Turbines (101-107)	705.18	705.18	705.18	987.25	774.4	275.41	193.16	137.97	51.31	29.33	15,942,537
Simple-Cycle Turbines (108-117)	132.45	132.45	132.45	132	257.45	51.13	17.96	27.75	5.00	2.9	1,547,728
Auxiliary Boilers (031-033)	0.33	0.33	0.33	2.16	3.63	0.24	0.06	<0.01	0.11	0.06	5,237
Fuel Gas Heaters (201-207)	1.59	1.59	1.59	9.92	12.23	1.65	0.46	<0.01	0.04	0.02	39,329
Emergency Gens - 2.5 MW (118-127)	0.45	0.41	0.4	10	52.26	2.84	0.11	<0.01	<0.01	<0.01	10,401
Emergency Gens - 1.0 MW (128-129)	0.04	0.03	0.03	0.82	4.27	0.23	<0.01	<0.01	<0.01	<0.01	849
Fire Pump Engine (130)	0.03	0.03	0.03	0.66	0.57	0.66	<0.01	<0.01	<0.01	<0.01	114
Cooling Towers (301-307)	3.15	2.17	0.01	-	-	-	-	-	-	-	-
Fugitive Emissions (401 & 701)	-	-	-	-	-	-	-	-	-	-	5259
Facility Total (tpy)	**843.21**	**842.20**	**840.02**	**1142.8**	**1104.8**	**332.16**	**211.76**	**165.73**	**57.1**	**32.2**	**17,551,454**
Major Threshold (tpy)	**100**	**100**	**100**	**100**	**100**	**50**	**100**	**100**	**25**	**10**	**100,000**

Estimated emissions are based on AP-42, worst-case emissions for the turbines (which is defined as pollutant-specific annual emission rates for the GE 7HA.02 and FT8 units calculated based on vendor-provided emissions data at 59ºF and the maximum of either 8,760 hr/year of continuous operation or emissions which include the maximum anticipated number of startup/shutdown events and the remaining hours at normal operating conditions, whichever is higher), and 8,760 operating hours per year for all other sources except for emergency engines which were calculated at 500 hours and the boilers which were calculated with a 5% annual operating capacity factor (438 hours per year).

Emission Limits

The following short-term and annual emission limits apply to each source:

Combined-Cycle Turbines (Source IDs 101-107)

- **NOx:** 2.0 ppmvd @ 15% O2 and 33.2 lb/hr (with duct burner) or 25.9 lb/hr (without duct burner) (1-hour block average)
- **CO:** 2.0 ppmvd @ 15% O2 and 20.2 lb/hr (with duct burner) or 15.8 lb/hr (without duct burner) (1-hour block average)
- **VOC:** 1.5 ppmvd @ 15% O2 and 8.7 lb/hr (with duct burner firing) and 0.7 ppmvd @ 15% O2 and 3.2 lb/hr (without duct burner firing), both based on the average of 3 stack test runs

- **PM/PM10/PM2.5:** 0.0054 lb/MMBtu and 24.1 lb/hr (with duct burner) or 19 lb/hr (without duct burner) (based on the average of 3 stack test runs)
- **H2SO4:** 0.001 lb/MMBtu and 4.7 lb/hr (with duct burner) or 3.4 lb/hr (without duct burner) (average of 3 stack test runs)
- **Ammonia Slip:** 5.0 ppmvd @ 15% O2 (12-month rolling average)
- **Annual Limits (per turbine):** The emissions from each turbine shall not exceed the following on a 12-month rolling basis:
    - NOx: 141.04 tpy
    - CO: 110.63 tpy
    - VOC: 39.34 tpy
    - PM/PM10/PM2.5: 100.74 tpy
    - SO2: 27.59 tpy
    - H2SO4: 19.71 tpy

Simple-Cycle Turbines (Source IDs 108-117)

- **NOx:** 2.5 ppmvd @ 15% O2 and 2.79 lb/hr (4-hour rolling average)
- **CO:** 9.35 lb/hr (4-hour rolling average)
- **VOC:** 3.75 lb/hr (average of 3 stack test runs)
- **PM/PM10/PM2.5:** 0.011 lb/MMBtu and 3.00 lb/hr (average of 3 stack test runs)
- **H2SO4:** 0.0022 lb/MMBtu and 0.64 lb/hr (average of 3 stack test runs)
- **Ammonia Slip:** 5.0 ppmvd @ 15% O2 (12-month rolling average)
- **Annual Limits (per turbine):** The emissions from each turbine shall not exceed the following on a 12-month rolling basis:
    - NOx: 13.30 tpy
    - CO: 25.74 tpy

- VOC: 5.11 tpy
- PM/PM10/PM2.5: 13.25 tpy
- SO2: 1.80 tpy
- H2SO4: 2.77 tpy

Auxiliary Boilers (Source IDs 031-033)

- **NOx:** 0.01 lb/MMBtu and 0.15 tpy
- **CO:** 0.08 lb/MMBtu and 1.21 tpy
- **VOC:** 0.0054 lb/MMBtu and 0.08 tpy
- **PM/PM10/PM2.5:** 0.0075 lb/MMBtu and 0.11 tpy

Emergency Generators & Fire Pump (Source IDs 118-130)

- **Emergency Generators (118-129):** Must meet Tier 4 emission standards.
- **Fire Pump Engine (130):** Must meet Tier 3 emission standards.

Fuel Gas Heaters (Source IDs 201-207)

- **NOx:** 0.03 lb/MMBtu and 1.42 tpy
- **CO:** 0.04 lb/MMBtu and 1.75 tpy
- **VOC:** 0.005 lb/MMBtu and 0.24 tpy
- **PM/PM10/PM2.5:** 0.0048 lb/MMBtu and 0.23 tpy

Cooling Towers (Source IDs 301-307)

- **Total Dissolved Solids (TDS):** Shall not exceed 3,000 ppmw (12-month rolling average).
- **Drift Rate:** Drift eliminators must have a guaranteed rate of less than 0.0005%.

Startup and Shutdown Emission Limits

The following limits apply only during startup and shutdown events and are included as part of the total annual emissions.

Combined-Cycle Turbines (Source IDs 101-107)

- **NOx:** 110 lbs/hot start; 160 lbs/warm start; 200 lbs/cold start; 16 lbs/shutdown
- **VOC:** 66 lbs/hot start; 70 lbs/warm start; 105 lbs/cold start; 55 lbs/shutdown
- **CO:** 215 lbs/hot start; 235 lbs/warm start; 830 lbs/cold start; 185 lbs/shutdown
    - *Cold Start:* A restart occurring 72 hours or more after shutdown (max duration: 70 minutes).
    - *Warm Start:* A restart occurring between 8 to 72 hours after shutdown (max duration: 60 minutes).
    - *Hot Start:* A restart occurring less than 8 hours after shutdown (max duration: 30 minutes).
    - *Shutdown:* The period from dropping below minimum load to fuel flow termination (max duration: 12 minutes).

Simple-Cycle Turbines (Source IDs 108-117)

- **NOx:** 14.4 lbs/startup; 2.8 lbs/shutdown
- **VOC:** 1.3 lbs/startup; 0.5 lbs/shutdown
- **CO:** 27.7 lbs/startup; 6.7 lbs/shutdown
    - *Startup:* The period from initiation until the unit reaches full load emissions compliance (max duration: 30 minutes).
    - *Shutdown:* The period from dropping below minimum load to fuel flow termination (max duration: 9 minutes).

Commissioning Period

The plan approval authorizes an initial commissioning period for the turbines, which will take place before the CEMS are certified and must be completed within 180 days of first fire. During this period, which allows for equipment shakedown and tuning, short-term emissions may be

higher than the normal operational limits. The commissioning activities are limited to the following operating hours per turbine:

- **Combined-Cycle Turbines:** 714 hours
- **Simple-Cycle Turbines:** 98 hours

All emissions generated during the commissioning period will be recorded and included when demonstrating compliance with the annual facility-wide emission limits. The annual tons-per-year limits for each turbine are inclusive of all modes of operation, including commissioning, startup, and shutdown.

PSD/NNSR Analysis

The facility is a major source under the Prevention of Significant Deterioration (PSD) program for PM, PM10, PM2.5, H2SO4, and Greenhouse Gases (GHG). The applicant has taken creditable emission decreases from the recent retirement of the former coal-fired boilers. Based on a baseline of actual emissions from 2021-2022, these decreases are being used in a netting analysis to show that the project's net emissions change is a significant decrease, resulting in a net change of -889.0 tpy for NOx and -2,991.7 tpy for CO, which allows the project to "net out" of PSD review for these pollutants. The detailed netting analysis can be found in Tables 3-10 and 3-11 of the plan approval application. The DEP has reviewed this analysis and concurs with the results. These reductions are being made federally enforceable through a modification to the facility's Title V Operating Permit.

The facility is also a major source under the Nonattainment New Source Review (NNSR) program for Volatile Organic Compounds (VOC), as Indiana County is located in the Ozone Transport Region. To satisfy NNSR requirements, the applicant must purchase and apply **369.035 tons** of VOC Emission Reduction Credits (ERCs) prior to commencing operation.

As part of the NNSR requirements (25 Pa. Code § 127.205(5)), the DEP reviewed the applicant's "Alternative Sites, Sizes, Production Processes, [and] Environmental Control Techniques" analysis, which was provided in Section 4.5.6.2 of the application.

- The applicant evaluated renewable production processes, specifically wind and solar power.
- The analysis concluded these alternatives were not viable for the project's stated purpose of providing 4,678 MWe of dispatchable (on-demand) power to maintain grid stability, citing that renewables are "intermittently available without requiring a form of additional energy storage capacity".

- The analysis also noted the significant difference in land-use requirements. The proposed project will be built on an approximately 200-acre footprint, while the applicant estimated a comparable solar project would require 13,380 acres.

Furthermore, the NNSR alternatives analysis, includes a demonstration that "the benefits of the proposed facility significantly outweigh the environmental and social costs imposed within this Commonwealth."

- The **"environmental and social costs"** are the project's air emissions. These costs were thoroughly evaluated via the BACT/LAER analysis, the PSD air quality modeling, and the Inhalation Risk Assessment. These analyses demonstrate that the emissions (costs) are minimized to the maximum extent achievable and will not cause or contribute to a violation of any health-based NAAQS or protective risk benchmarks.

- The **"benefits"** include the redevelopment of a large brownfield site, and the reuse of existing critical grid and water infrastructure.

The DEP has determined that these benefits significantly outweigh the environmental and social costs, which are being minimized and controlled to levels protective of public health.

In addition to the netting analysis, an air quality modeling analysis was performed for PM, PM10, and PM2.5. The results of this analysis demonstrated that the net emissions increase from the project will not cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS) or the available PSD increments for these pollutants. Furthermore, at DEP's request under the authority in 25 *Pa. Code* §127.12(a)(2), the applicant performed a conservative inhalation risk assessment for hazardous air pollutants and other air toxics. The DEP's technical review concluded that the methodology for this assessment was consistent with applicable methodologies and the benchmarks for cancer and noncancer health risks would not be exceeded. Refer to the DEP's risk assessment memo and Homer City's inhalation risk assessment report for further details.

BAT/BACT/LAER Analysis

The applicant performed a detailed five-step top-down analysis to determine Best Available Technology (BAT), Best Available Control Technology (BACT) for PSD pollutants, and Lowest Achievable Emission Rate (LAER) for VOCs. See Section 5 of the facility's PSD Permit Application for a more detailed analysis of BAT/BACT/LAER. The analysis concluded the following:

- **Turbines:** The analysis evaluated a range of post-combustion controls. Selective Non-Catalytic Reduction (SNCR) and Non-Selective Catalytic Reduction (NSCR) were determined to be technically infeasible due to exhaust gas temperature and oxygen content constraints. For Greenhouse Gases (GHG), Carbon Capture and Sequestration (CCS) and co-firing with low-GHG hydrogen were also deemed technically infeasible for

this project due to a lack of commercial availability and necessary infrastructure. Therefore, the use of new, high-efficiency turbines firing natural gas, combined with advanced combustion controls (Dry Low-NOx combustors for the combined cycle units, water injection for the simple cycle units) and post-combustion controls including Selective Catalytic Reduction (SCR) for NOx and an Oxidation Catalyst for CO and VOCs, represents BACT/LAER.

- **Boilers & Fuel Gas Heaters:** The analysis determined that add-on controls like SCR are not technically or economically feasible for units of this size. Therefore, the use of ultra-low NOx burners and flue gas recirculation (FGR) for the boilers, along with good combustion practices, constitutes BAT.

- **Emergency Engines:** The analysis confirmed that compliance with the latest applicable EPA standards (Tier 4 for the generators, Tier 3 for the fire pump), combined with the use of Ultra-Low Sulfur Diesel (ULSD) and limited operating hours, represents BAT.

- **Cooling Towers:** The analysis identified high-efficiency drift eliminators as the top control technology. The installation of eliminators with a guaranteed drift rate of 0.0005% and limits on the water's total dissolved solids represents BACT for particulate matter.

The DEP has received and reviewed technical documentation, including specification sheets and guarantee letters, from the manufacturers or vendors of the primary emitting sources. This documentation confirms that the equipment, as designed and controlled, is capable of meeting the emission limits established in this plan approval. This includes:

- **Combined-Cycle & Simple-Cycle Turbines:** Letters from GE Vernova and Mitsubishi Power Aero, and supporting emails, confirm that the operational, startup/shutdown, and commissioning emissions data used in the application are consistent with the equipment's capabilities.

- **Emergency Generators:** A letter from Cummins and their aftertreatment vendor, MIRATECH, confirms the engines will be equipped with controls to meet the required Tier 4 emission standards.

- **Fire Water Pump Engine:** A letter from Clarke certifies that the engine meets the required Tier 3 emission standards.

- **Auxiliary Boilers & Fuel Gas Heaters:** Documentation from CIB Unigas and Aether DBS confirms that the burners are guaranteed to meet the specified BAT emission limits for NOx, CO, VOC, and PM.

- **Cooling Towers:** A letter from EvapTech confirms the cooling towers will be equipped with drift eliminators that meet the guaranteed drift rate of 0.0005%.

New Source Performance Standards (NSPS) - 40 CFR Part 60
The following NSPS subparts are applicable to this project:

- **Subpart KKKK** - Standards of Performance for Stationary Combustion Turbines. This subpart applies to both the combined-cycle and simple-cycle turbines as they are new units constructed after February 18, 2005, and have a heat input capacity greater than 10 MMBtu/hr.

    - **NOx Limits:** The current rule sets NOx limits of 15 ppmvd @ 15% O2 for the combined-cycle units and 25 ppmvd @ 15% O2 for the simple-cycle units. The proposed replacement, Subpart KKKKa, would lower this limit to 3 ppmvd for both turbine types. The facility's proposed BAT/BACT limits are more stringent than the current and proposed NSPS, and compliance will be achieved through DLN combustors, water injection, and SCR.

    - **SO2 Limits:** The rule requires that the fuel's potential sulfur emissions not exceed 0.06 lb SO2/MMBtu. The facility will comply with this standard by exclusively using pipeline-quality natural gas.

- **Subpart TTTTa** - Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units. This subpart applies to combustion turbines with a base load rating greater than 250 MMBtu/hr serving a generator capable of selling more than 25 MWe to the grid.

    - The seven combined-cycle turbines are subject to this regulation and will comply with the emission limit of 800 lbs CO2/MWh (gross output) or 820 lbs CO2/MWh (net output).

    - The ten simple-cycle turbines are not subject to this subpart, as their generators have a nameplate capacity of 25 MWe, which does not exceed the applicability threshold.

- **Subpart Dc** - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. This subpart applies to the three auxiliary boilers because they have a heat input capacity of 67 MMBtu/hr (which is between 10 and 100 MMBtu/hr) and are being constructed after the applicability date of June 9, 1989. Because the boilers will be fired exclusively on natural gas, the primary requirement of this subpart is to record the monthly fuel usage for each boiler, which is required by the plan approval.

- **Subpart IIII** - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. This subpart applies because the emergency generators and fire pump are new stationary compression ignition engines manufactured after the applicability date of July 11, 2005. The facility will comply by purchasing engines certified by the manufacturer to the emission standards in 40 CFR § 60.4202 for the

appropriate model year and maximum engine power. As a result of the Best Available Technology (BAT) determination, the Plan Approval requires the emergency generator engines to meet the stringent Tier 4 standards under 40 CFR Part 1039. This BAT limit is more stringent than the minimum standards that may be required for these engines under Subpart IIII. The fire water pump engine will meet the applicable Tier 3 standards under Subpart IIII.

- *Note: Since the final make, model, and serial number of the engines are unknown at this time, the facility is required to submit a notification to the DEP with this information upon installation. This will be used to confirm the specific standards the units must comply with under 40 CFR Part 60, Subpart IIII.*

- **Subpart Kc** - Standards of Performance for Volatile Organic Liquid Storage Vessels. This subpart is not expected to apply, as the project does not anticipate installing storage tanks with a capacity greater than 20,000 gallons. Additionally, the ULSD and lubricating oils stored on site have a maximum true vapor pressure below the 0.25 psia applicability threshold. If the project installs a storage tank that is subject to this subpart and is not otherwise exempt from plan approval, the facility will be required to notify the DEP and submit either a Request for Determination (RFD) or a new plan approval application.

In addition to the subpart-specific requirements, the facility must also comply with the relevant appendices of 40 CFR Part 60. This includes utilizing the source stack testing methods in Appendix A and adhering to the CEMS performance specifications and quality assurance procedures in Appendices B and F. While the project will use CEMS for CO, NOx, and O2, the NOx and O2 CEMS will be subject to the more stringent requirements of 40 CFR Part 75.

National Emission Standards for Hazardous Air Pollutants (NESHAP) - 40 CFR Part 61 & 63

The facility is a major source of HAP emissions, as its potential emissions exceed 10 tpy for an individual HAP (Formaldehyde) and 25 tpy for all combined HAPs. There are no Part 61 NESHAP standards applicable to this installation. The following Part 63 MACT standards are applicable:

- **Subpart YYYY - NESHAP for Stationary Combustion Turbines:** This subpart applies to all turbines as they are new stationary combustion turbines located at a major HAP source. The primary requirement is to limit formaldehyde emissions to no more than 91 ppbvd corrected to 15% O2, which is achieved through the use of an oxidation catalyst and represents Best Available Technology (BAT). The parametric monitoring of the oxidation catalyst ensures proper operation to meet this limit. The facility must also comply with all applicable notification, testing, and monitoring requirements of this subpart. While the facility must comply with Subpart YYYY at all times, the specific requirements vary by operational mode. During normal operation, compliance is achieved by meeting the 91 ppbvd formaldehyde limit through the use of the oxidation catalyst.

During periods of startup, the numeric limit does not apply. Instead, the facility must comply with the applicable work practice standard, which requires minimizing startup time to a period necessary for safe loading of the turbine, not to exceed 1 hour for simple-cycle turbines and 1 hour plus an additional 3 hours of low-load operation for the combined-cycle units. This distinction exists because the oxidation catalyst is not effective until it reaches its proper operating temperature. Therefore, compliance is demonstrated by adhering to the numeric limit during normal operation and the work practice standard during startup.

- **Subpart ZZZZ - NESHAP for Stationary Reciprocating Internal Combustion Engines:** The emergency generators and fire pump are subject to this subpart. As new engines at a major HAP source, they will comply with this rule by meeting the requirements of NSPS Subpart IIII. The facility must also adhere to all applicable notification requirements of this subpart.

- **Subpart DDDDD - NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters:** This subpart applies to the auxiliary boilers and fuel gas heaters as they are new units in the "designed to burn gas 1 fuels" subcategory. They are not subject to the numeric emission limits of the rule but must comply with the work practice standard, which requires periodic tune-ups. The facility must also comply with all applicable notification and recordkeeping requirements of this subpart.

Compliance Assurance Monitoring (CAM) - 40 CFR Part 64
The Compliance Assurance Monitoring (CAM) rule applies to pollutant-specific emissions units that are located at a major source, use a control device to achieve a federally enforceable emission limit, and have pre-control potential emissions that are at least 100% of the major source threshold.

The combustion turbines at this facility meet these criteria for NOx and CO emissions. However, the CAM rule contains an exemption for sources that are already subject to a continuous compliance determination method, such as a Continuous Emission Monitoring System (CEMS) required by 40 CFR Part 75 (Acid Rain Program).

Therefore, while the turbines are subject to the CAM rule, the requirement to install, certify, and operate CEMS for NOx, CO, and O2, as specified in this plan approval, will satisfy the CAM requirements for those pollutants. No separate CAM plan is required.

Other Federal Requirements
In addition to the NSPS and NESHAP standards, the facility is subject to the following major federal programs:

- **40 CFR Part 72 - Acid Rain Program:** The seven combined-cycle turbines are considered affected "utility units" and are subject to the SO2 allowance trading and permitting requirements of this program. The simple-cycle turbines are exempt as their generators do not exceed the 25 MWe applicability threshold.

- **40 CFR Part 75 - Continuous Emissions Monitoring:** This part provides the required procedures and quality assurance criteria for the CEMS that will be used to demonstrate compliance with the Acid Rain Program and the Cross-State Air Pollution Rule (CSAPR). The facility will use CEMS for NOx, CO, and O2, and Part 75 calculation methods for CO2 and SO2.

- **40 CFR Part 97 - Cross-State Air Pollution Rule (CSAPR):** As a new electric generating facility in Pennsylvania, the facility is subject to the currently effective CSAPR trading programs. This includes the CSAPR NOx Annual Trading Program (Subpart AAAAA), the CSAPR SO2 Group 1 Trading Program (Subpart CCCCC), and the CSAPR NOx Ozone Season Group 2 Trading Program (Subpart EEEEE). While the facility is also subject to the CSAPR NOx Ozone Season Group 3 Trading Program (Subpart GGGGG), that program is currently under judicial review, and the Group 2 program remains in effect in the interim. The facility will be required to hold allowances to account for their emissions of these pollutants under the applicable programs.

- **40 CFR Part 98 - Greenhouse Gas Reporting Program:** The facility's potential GHG emissions exceed the 25,000 metric ton/year reporting threshold, making it subject to this mandatory reporting rule. Emissions from the turbines will be reported under Subpart D, while emissions from the boilers and heaters will be reported under Subpart C.

25 Pa. Code Requirements
This plan approval will be subject to the requirements of 25 Pa. Code Chapters 121, 123, 127, 129, 135, 139, and 145. This includes standards for fugitive emissions, visible emissions, malodors, open burning, emission inventory reporting, and plan approval conditions.

Testing and Monitoring Requirements
The facility is subject to a comprehensive set of testing and monitoring requirements to ensure continuous compliance with the emission limits.

Source-Specific Testing and Monitoring

- **Turbines (Combined-Cycle & Simple-Cycle):**
    - **Initial & Periodic Stack Testing:** Initial stack testing is required within 180 days of startup to demonstrate compliance with limits for NOx, CO, VOC, PM, H2SO4, Formaldehyde, SO2, and ammonia slip. Subsequent performance testing is required every 2 years for VOC, HCHO, PM, PM10, and PM2.5 (filterable and condensable), and Ammonia slip.
    - **Continuous Emission Monitoring Systems (CEMS):** The facility must install, certify, and operate CEMS to continuously monitor emissions of NOx, CO, and O2 from each turbine.
    - **Compliance Methods: Compliance Methods:** Compliance with emission limits will be demonstrated using the following methods:
        - **NOx:** U.S. EPA Reference Method 7E (for concentration) and CEMS (for continuous compliance).
        - **CO:** U.S. EPA Reference Method 10 (for concentration) and CEMS (for continuous compliance).
        - **VOC:** U.S. EPA Reference Method 18 and 25A or a Thermo Scientific™ Direct Methane & Non-Methane Hydrocarbon Analyzer, Model 55i (or equivalent) calibrated in accordance with U.S. EPA Reference Method 25A and U.S. EPA Alternate Test Method (ALT) 096 or other methods approved by the DEP.
        - **PM/PM10/PM2.5:** U.S. EPA Reference Methods 201/201A and 202, adjusted for ammonium sulfate formation.
        - **H2SO4:** U.S. EPA Reference Method 8 or EPA Conditional Test Method 013.
        - **Formaldehyde (HCHO):** U.S. EPA Test Method 320 or ASTM D6348-12e1.
        - **Ammonia (NH3):** U.S. EPA Reference Method 320 or EPA Conditional Test Method 027.
        - **Mass-based limits (lb/hr):** Compliance will be demonstrated using 40 CFR Part 75 Appendix D fuel flow monitoring and EPA Method 19 calculations.

- **Parametric Monitoring:** To ensure the proper operation of the control devices, the facility must continuously monitor key parameters. The pressure differential across the inlet air filters shall be monitored and recorded on a weekly basis. The pressure differential across the oxidation catalyst, as well as its inlet and outlet temperatures, shall be monitored and recorded on a continuous (1-hour average) basis. The inlet temperature, outlet temperature, and pressure differential across the SCR shall also be monitored and recorded continuously. Visual and audible alarms will be used to indicate improper operation. The acceptable ranges for these parameters will be established during initial stack testing.

- **Ammonia Slip Monitoring:** A continuous monitoring system will be used to determine compliance with the ammonia emissions limit. A surrogate system will continuously monitor NOx before and after the SCR and the ammonia feed rate. Ammonia slip concentration is then calculated using the following equation:

    - NH3 Adj. = ((A-(B*C/1,000,000))*(1,000,000/B))*D

    - Where:

        - NH3 Adj. = NH3, ppmvd

        - A = NH3 injection rate (lb/hr)/17 lb/lb-mol

        - B = Dry exhaust flow rate (lb/hr)/29 lb/lb-mol

        - C = Change in NOx ppmvd across the catalyst (Inlet NOx - Outlet NOx)

        - D = Correction factor = RM avg. / CEMS avg.

- **Auxiliary Boilers:**

    - **Initial Stack Testing:** Initial stack testing is required within 180 days of startup to demonstrate compliance with the emission limits for NOx, CO, VOC, and PM. Testing shall be performed using the following EPA reference methods or equivalents: NOx (Method 7E), CO (Method 10), VOC (Methods 18 & 25A), PM/PM10/PM2.5 (Methods 5, 201/201A, & 202), SO2 (Method 6C), and H2SO4 (Method 8 or CTM-013).

    - **Fuel Monitoring:** The facility must record the amount of natural gas combusted in each boiler on a monthly basis.

- **Emergency Engines & Fire Pump:**

    - **Operational Monitoring:** Each engine must be equipped with a non-resettable hour meter to track its hours of operation to ensure compliance with the 500-hour annual limit.

- **Cooling Towers:**

    - **Water Quality Monitoring:** The facility must sample and analyze the Total Dissolved Solids (TDS) content of the circulating water on a monthly basis. The circulating water and make-up water flow rates must also be continuously monitored.

Site-Wide Monitoring and Recordkeeping

- **Daily Inspections:** The facility is required to perform daily inspections during daylight hours while operating to detect the presence of visible air contaminant emissions.

- **Methane Leak Detection:** The facility will be required to implement a methane (CH4) leak detection and repair program which includes audible, visual, and olfactory ("AVO") inspections conducted on a monthly basis.

- **Recordkeeping:** The facility shall maintain records of the following:

    - Site-wide emissions calculations on a 12-month rolling basis, including PM, PM10, PM2.5, NOx, CO, VOC, SOx, H2SO4, CO2e, total HAPs, and individual HAPs.

    - Results of all facility-wide inspections.

    - Valid purchase contracts, tariff sheets, or transportation contracts from the natural gas supplier detailing the sulfur content.

    - Results of monthly natural gas sulfur content analyses.

Work Practice Standards

- The sources and associated control devices shall be maintained and operated in a manner consistent with good air pollution control practices and in accordance with the manufacturer’s recommendations as well as the manufacturer’s maintenance plan.

- The permittee shall operate and maintain the stationary combustion turbines, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times, including during startup, shutdown, and malfunctions.

Regulatory Analysis
The applicant has complied with the municipal notification requirements contained in 25 Pa. Code §127.43a. Notification was sent to Center Township Municipality and the Indiana County Commissioners on April 2, 2025. The proof of notification was received by the DEP on April 4, 2025. A fee of $50,000 was remitted to the "Clean Air Fund" by the applicant on April 4, 2025, as required under 25 Pa. Code §127.703.

A draft Plan Approval was prepared and sent to the company on July 21, 2025. The draft plan approval was also sent to the EPA on August 12, 2025, for a 45-day review period. A notice of intent to issue the plan approval was published in the *PA Bulletin* on August 16, 2025, which initiated a 30-day public comment period. A public meeting and hearing on the draft plan approval was be held on September 17, 2025. A separate comment response document was prepared to answer comments. Homer City posted the Notice of Intent to issue the plan approval to the Indiana Gazette on August 23, 2025, August 24, 2025, and August 25, 2025.

Program Coordination
No other DEP program has required prior approval for this project.

Changes to the Final Plan Approval Based on Comments Received
- Increased the frequency of stack testing for PM and VOC emissions on the turbines from 5 years to 2 years; and
- Lowered the VOC emissions limit for the combined cycle turbines when there is no duct burner firing from 1.0 ppmvd @ 15% O2 to 0.7 ppmvd @ 15% O2.

Recommendation
It is recommended that a plan approval be issued to Homer City Generation LP to authorize the construction and operation of the natural gas-fired electrical generating station in Center Township, Indiana County.