University of Kentucky
Facilities Management
Office of the Vice President

February 25, 2026

Zachary Bittner
Environmental Control Manager
Kentucky Division for Air Quality
Permit Review Branch, Combustion Section
300 Sower Boulevard, 2nd Floor
Frankfort, Kentucky 40601

Submitted via eForms

RE: Significant Permit Revision Application for New Hospital Heating Plant – Central Utility Plant #5 (CUP5) Project
University of Kentucky – V-25-005
Agency Interest: 1104

Mr. Bittner:

The University of Kentucky (UK) is an educational institution in Lexington, KY, which owns an adjacent source, UK Good Samaritan Hospital (Samaritan Hospital), regulated as a single major source under the Title V permit program (herein referred to collectively as UK) and operates in accordance with Title V permit V-25-005, originally issued on January 23, 2026, by the Kentucky Division for Air Quality (KDAQ).

As part of the Central Utility Plant #5 (CUP5) Project, UK is submitting this signification permit revision application to install the following equipment to support the Chandler Hospital expansion and other campus growth and which will be operated by third-party entities, herein referred to as "P3":[1] UK may start construction on these boilers as soon as Q1 2027.

- Two (2) new 121 MMBtu/hr (nominal) natural gas-fired boilers, with ultra-low sulfur diesel (ULSD) used as a backup fuel;
- Six (6) new 3,000 kW diesel-fired emergency generator engines;
- One (1) 1,250 kW diesel-fired emergency generator engine; and
- Supporting ancillary ULSD storage tanks

APPLICATION SUMMARY

The changes associated with the Project are submitted as a Significant Permit Revision (SPR) in accordance with 401 KAR 52:020, Section 16. A SPR is requested to implement federally-enforceable limits on back-up fuel use and emergency generator hours of operation to avoid the Prevention of Significant Deterioration (PSD) permitting program.

The components required for a SPR, pursuant to 401 KAR 52:020, Section 5, are included in this application letter and its attachments. The required permit application forms (DEP7007AI, DD, A, EE, V, and N) are provided in **Attachment A**. A description of the Project and regulatory review are provided within this letter, along with an analysis of potential emissions from the new boilers, emergency

[1]Kentucky Infrastructure Partners LLC ("KIP"), a consortium consisting of Walsh Investors and Plenary Americas, will finance the P3 facility. KIP will contract with NORESCO LLC to operate and maintain the facility.

generators, and associated equipment. Detailed supporting emission calculations are included in **Attachment B**.

PROJECT DESCRIPTION

The Project will include the installation of two (2) natural gas-fired boilers, proposed emission units (EU) 104 & 105 (P3 Boiler #1 & P3 Boiler #2), which are designed to produce 100,000 pounds per hour (lb/hr) of 150 psig steam each. The boilers will primarily operate by combusting pipeline quality natural gas using ultra-low NOx burner technology and 20% flue gas recirculation with a maximum heat input rating of 121.7 MMBtu/hr. Each boiler may alternatively combust ULSD fuel in cases of natural gas supply interruptions. The maximum heat input capacity rating of the burner while combusting ULSD is 116.2 MMBtu/hr.

In addition to the boiler steam, the Project will require six (6) new 3,000 kW diesel fueled emergency generator engines (proposed as EU106 – EU111). These units will provide emergency backup power to the critical hospital infrastructure and equipment in case of loss of power from the Utility provider.

To support potential power loss to P3 Boilers #1 & #2, UK will require additional backup power and thus will install one (1) new 1,250 kW diesel fueled emergency generator engine (proposed as EU112). To address diesel fuel storage needs, UK will add five (5) new ULSD fixed-roof storage tanks, which will be installed above-ground outdoors. UK proposes that these tanks be permitted as part of the existing insignificant activity IA#1 "Fuel Oil Storage Tanks".

A new cooling plant is also part of the Project; however, there are no emissions units subject to air permitting in the scope for the cooling plant.

APPLICABLE REGULATIONS SUMMARY

The following subsections discuss the applicability of regulatory requirements to the affected source.

New Source Review (NSR)/PSD

Federal construction permitting programs regulate new and modified sources of attainment pollutants under the PSD program and new and modified sources of non-attainment pollutants under Non-Attainment New Source Review (NA-NSR). UK is located in Fayette County, Kentucky, which is designated as in attainment/unclassifiable for all pollutants. Therefore, PSD permitting is potentially applicable to the facility. The PSD preconstruction permitting program in Kentucky has been approved by the US EPA and incorporated into the Kentucky State Implementation Plan (SIP) under 401 KAR 51:017 to implement the federal requirements of 40 CFR 51.166 or 52.21.

For the purposes of the PSD permitting program, a *major stationary source* can be summarized as:

- One of the 28 listed stationary sources that emits, or has the potential to emit, 100 tons per year (tpy) or more of any regulated NSR pollutant, where fugitive emissions from the listed source category must be included in the total; or
- Any source not belonging to one of the listed source categories that emits, or has the potential to emit, 250 tpy or more of any regulated NSR pollutant, where fugitive emissions are not included in the total.

One of the 28 listed stationary source categories (otherwise known as the List of 28) is "fossil fuel boilers (or combinations thereof) totaling more than 250 MMBtu/hr heat input", which applies to UK. The facility

has a PTE greater than 100 tpy for particulate matter less than 10 microns and less than 2.5 microns ($PM_{10}/PM_{2.5}$), carbon monoxide (CO), nitrogen oxides (NO_X), and sulfur dioxide (SO_2) and is classified as an existing major stationary source.

Since the P3 operations will be operated by a third party, UK evaluated whether this will be a single "source" with the University. Pursuant to 401 KAR 51:001 Section 1 (230), a "stationary source" under the PSD permitting program means a building, structure, facility, or installation that emits or has the potential to emit a regulated NSR pollutant. Section 1 (29) further defines "Building, structure, facility, or installation" as all of the pollutant emitting activities that:

(1) Belong to the same industrial grouping or have the same two (2) digit major group code as described in the Standard Industrial Classification Manual;
(2) Are located on one (1) or more contiguous or adjacent properties;
(3) Are under the control of the same person or persons under common control; and
(4) Do not include the activities of a vessel. *(not applicable)*

The P3 will be in the same industrial grouping as the University and Hospital campus since it will serve as a support facility by providing heating and emergency power needs. The P3 will be physically located on UK's campus, and is thus located on contiguous property. The question of common control was evaluated based on the relationship between the P3 owner and operator with the University. Based on the current understanding of the contractual obligations between UK and the P3 owner and operator, UK does not rebut the presumption of common control. Thus, the P3 facility will be considered a single source with the University and Hospital Campus.

As an existing major stationary source, PSD permitting is triggered for a regulated NSR pollutant only if the project is considered a major modification. To qualify as a major modification the project must result in both a significant emissions increase and a significant net emissions increase. As demonstrated by Table 1, maximum potential emissions from the new boilers and auxiliary combustion equipment (i.e., the project emissions increase, PEI) are less than the significant emission rate (SER) for each regulated NSR pollutant, when taking into account requested federally enforceable limits of back-up fuel oil in the boilers and emergency generator operating hours.[2] Therefore, PSD permitting is not required for the Project.

[2] A facility only triggers PSD requirements for GHG emissions if the requirements are also triggered for a traditional NSR pollutant. Since no NSR pollutants trigger PSD requirements, the proposed GHG emissions increase does not become subject to the PSD permitting program.

Table 1. Project Emissions Increase

KyEIS ID, Permit ID	Description	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	NO_X (tpy)	CO (tpy)	VOC (tpy)	SO_2 (tpy)
New Emission Units								
COMB37, EU104	P3 Boiler #1, NG, 121 MMBtu/hr[a]	4.43	4.43	4.43	7.53	21.28	2.87	0.18
COMB38, EU105	P3 Boiler #2, NG, 121 MMBtu/hr[a]	4.43	4.43	4.43	7.53	21.28	2.87	0.18
COMB39, EU106	Emergency Generator #1, FO , 3.0 MWh	0.03	0.03	0.03	3.72	0.66	0.03	2.6E-03
COMB40, EU107	Emergency Generator #2, FO , 3.0 MWh	0.03	0.03	0.03	3.72	0.66	0.03	2.6E-03
COMB41, EU108	Emergency Generator #3, FO , 3.0 MWh	0.03	0.03	0.03	3.72	0.66	0.03	2.6E-03
COMB42, EU109	Emergency Generator #4, FO , 3.0 MWh	0.03	0.03	0.03	3.72	0.66	0.03	2.6E-03
COMB43, EU110	Emergency Generator #5, FO , 3.0 MWh	0.03	0.03	0.03	3.72	0.66	0.03	2.6E-03
COMB44, EU111	Emergency Generator #6, FO , 3.0 MWh	0.03	0.03	0.03	3.72	0.66	0.03	2.6E-03
COMB45, EU112	Heating Plant Generator, #1, FO , 1.25 MWh	4.6E-03	4.6E-03	4.6E-03	1.42	0.05	0.02	1.1E-03
IA-1	P3 Fuel Oil Storage Tanks (adding 5 tanks)						0.14	
Emissions Increase Summary P3		*9.06*	*9.06*	*9.06*	*38.78*	*46.57*	*6.11*	*0.39*
PSD/NSR Major Modification Threshold		25	15	10	40	100	40	40
Trigger PSD/NSR?		**No**	**No**	**No**	**No**	**No**	**No**	**No**

[a] Potential emissions for P3 Boiler #1 and P3 Boiler #2 were determined by using the worst-case emissions on a lb/hr basis for the first 500 hours of usage, then exclusively natural gas emission factors for the remaining hours, assuming continuous operation.

Federal Internal Combustion Engine Regulations

40 CFR 63 Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

NESHAP Subpart ZZZZ applies to new and existing reciprocating internal combustion engines. The requirements of this regulation are already incorporated into V-25-005. The proposed new P3 emergency generators for the Project will be subject to NESHAP Subpart ZZZZ, as shown in the DEP7007V forms in Attachment B. Pursuant to 40 CFR §63.6590(c)(1), new emergency generator engines shall comply with NESHAP Subpart ZZZZ via compliance with New Source Performance Standard (NSPS) Subpart IIII.

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

NSPS Subpart IIII applies to owners, and operators of stationary compression ignition internal combustion engines for which construction commences after July 11, 2005, where the stationary compression ignition internal combustion engines are either manufactured after April 1, 2006, and are not fire pump engines, or are manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006. The requirements of this regulation are already incorporated into V-25-005. The proposed new P3 emergency generators for the Project will be subject to NSPS Subpart IIII, with specific requirements detailed in the DEP7007V forms in Attachment B.

National Emissions Standards for Hazardous Air Pollutants

A major source of HAP is one with potential emissions in excess of 25 tpy for total combined HAP and/or in excess of 10 tpy for any individual HAP. UK's Title V permit includes emissions limits for combined HAP

below 22.5 tpy and below 9.0 tpy for any individual HAP; therefore, UK is classified as an area source of HAP. As such, UK is subject to certain area-source NESHAP standards.

40 CFR 63 Subpart JJJJJJ – Industrial, Commercial and Institutional Boilers at Area Sources of HAP Emissions

NESHAP Subpart JJJJJJ applies to each new, reconstructed, or existing affected source, located at an area source of HAP. The affected source includes the collection of existing and each new or reconstructed industrial, commercial or institutional boilers within a subcategory listed in 40 CFR 63.11200. The new P3 Boiler #1 and P3 Boiler #2 will be subject to NESHAP Subpart JJJJJJ.

Pursuant to 40 CFR 63.11201, the boilers must meet applicable emission limits in Table 1 to Subpart JJJJJJ, comply with the work practice standards of Table 2, and comply with the operating limits in Table 3 at all times except during periods of startup and shutdown. These requirements are as follows (and detailed in the DEP7007V form in Attachment A):

Emission Limits: None

- Pursuant to 40 CFR 63.1120(f), new or reconstructed boilers that combust only ultra-low-sulfur liquid fuel as defined in §63.11237, are not subject to the PM emission limit in Table 1 of this regulation providing the facility monitors and records on a monthly basis the type of fuel combusted. A performance test is required if any fuel other than ULSD will be fired.

Work Practice Standards:

- Minimize the boiler's startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures.
- Conduct a tune-up of the boiler biennially as specified in §63.11223, or every 5 years when using an oxygen trim system that maintains an optimum air-to-fuel ratio.

Operating Limits: None

Notifications, Recordkeeping, and Reporting:
UK has several boilers with are already in compliance with NESHAP Subpart JJJJJJ and will comply with the periodic reporting requirements already in the permit, as well as additional recordkeeping and notification requirements for the affected liquid-fired boilers under 40 CFR 63.11225.

- The initial notification required by 40 CFR 63.11225(a)(2) is satisfied by this permit application.
- A notification of compliance status report (NOCS) is not required, pursuant to 40 CFR 63.11225(a)(4) because the new boilers are subject only to a requirement to conduct a biennial or 5-year tune-up.

40 CFR 60 Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

NSPS Subpart Db standards of performance apply to Industrial-Commercial-Institutional Steam Generating Units, greater than 100 MMBtu/hr, and installed after June 19, 1984. P3 Boiler #1 and P3 Boiler #2 will be subject to NSPS Subpart Db, including NO_X emissions and opacity standards and associated compliance demonstration requirements. P3 Boilers #1 and #2 will be exempt from the SO_2 and PM (except opacity) standards, as described below. These requirements are already established for EU01, EU02, and EU97 (CHP boilers #1, #2, and #3) Section B of the current air permit.

Pursuant to 40 CFR 60.42b(k)(2), units firing only very low sulfur oil, gaseous fuel, a mixture of these fuels, or a mixture of these fuels with any other fuels with a potential SO_2 emission rate of 0.32 lb/MMBtu or less are exempt from the SO_2 emission limits in 40 CFR 60.42b(k)(1). P3 Boilers #1 and #2 will fire only natural gas or ULSD, both having an SO_2 emission rate less than 0.32 lb/MMBtu; therefore, the SO_2 emission limits in this section do not apply. Furthermore, pursuant to 40 CFR 60.43b(h)(5) the PM standards of §60.43b(h)(1) do not apply to boilers that commence construction after February 28, 2005, and that combust only natural gas and ULSD and not using a post-combustion technology to reduce SO_2 or PM emission.

Based on the design heat release rate for each of P3 Boilers #1 and #2, each boiler represents a high heat release rate unit and is subject to a NO_X limit of 0.20 lb/MMBtu under 40 CFR 60.44b(a). The vendor guarantees for these boilers (i.e., 9 ppmv @ 3% O2, which corresponds to 0.011 lb/MMBtu) ensures that the units achieve compliance with the NSPS Db limit. UK will demonstrate compliance with this limit on a 30-day rolling average basis (including periods of startup, shutdown, or malfunction) using a Continuous Parametric Emissions Monitoring System (PEMS) for estimating NO_X.

Initial compliance will be demonstrated by conducting a NO_X performance test for 30 successive steam generating unit operating days, as required by 40 CFR 60.46b(e)(4). The 30-day average emission rate (i.e., the average of all hourly emissions data recorded by the monitoring system during the 30-day test period) is used to determine compliance with the NO_X limit. Following this initial demonstration, UK will identify excess emissions with respect to the NO_X standard on a continuous basis as specified in a plan submitted pursuant to §60.49b(c).

While firing fuel oil, P3 Boilers #1 and #2 will be subject to 40 CFR 60.43b(f), which states that opacity shall not exceed 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. This limit applies at all times the boiler is firing fuel oil, except during periods of startup, shutdown, or malfunction, as specified in 40 CFR 60.43b(g). UK will demonstrate compliance with this requirement through initial and subsequent performance testing using EPA Method 9, as required by 40 CFR 60.46b(d)(7) and 60.48b(a)(1).

The applicable requirements of NSPS Db are detailed in the DEP7007V forms in Attachment A.

40 CFR 60 Subpart Kc – Volatile Organic Liquid Storage Vessels

NSPS Subpart Kc standards of performance apply each storage vessel with a capacity greater than or equal to 20,000 gallons that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after October 4, 2023. NSPS Subpart Kc will not apply to the proposed new ULSD storage tanks, pursuant to 40 CFR 60.110c(b)(8), because it will only store VOL with a maximum true vapor pressure less than 0.25 psia.

Kentucky Administrative Regulations

401 KAR 59:015 – New Indirect Heat Exchangers

401 KAR 59:015 applies to indirect heat exchangers with a capacity greater than 1 MMBtu/hr and less than 250 MMBtu/hour and which commenced after April 9, 1972, and to indirect heat exchangers with a capacity greater than 250 MMBtu/hr and which commenced after August 17, 1971. P3 Boilers #1 and #2 will be subject to the PM, opacity, and SO_2 emissions standards of this regulation.

PM shall not exceed 0.10 lb/MMBtu, pursuant to 401 KAR 59:015, Section 4(1)(c). Compliance is implicit based on the potential to emit emission factors while combusting natural gas.

Opacity shall not exceed 20 percent, except for one 6-minute period up to 27 percent in 60 consecutive minutes, pursuant to 401 KAR 59:015, Section 4(2). These limits do not apply while building a new fire, as long as the method used and duration of bringing each boiler up to operating conditions is consistent with manufacturer's recommendations. Compliance is assured with this standard while P3 Boilers #1 and #2 combust natural gas. Compliance with NSPS Subpart Db assures compliance with this regulation while burning ULSD.

SO_2 emissions shall not exceed 0.8 lb/MMBtu, pursuant to 401 KAR 59:015, Section 5(1). Compliance with this limitation is assured through combustion of pipeline quality natural gas and ULSD, demonstrated by the fuel receipt records required by 40 CFR 60.49b(r)(1).

401 KAR 59:015 was revised, effective March 9, 2018. Changes were made to the startup, shutdown, and malfunction (SSM) provisions of the rule; whereby work practice standards must be met during periods of SSM and certain procedures must be followed for startup and shutdown periods (now defined in the rule). Because the new P3 Boilers #1 and #2 are subject to 40 CFR 63, Subpart JJJJJJ, the units must meet the work practices standards established in Table 2 of that regulation pursuant to 401 KAR 59:015, Section 7 and 401 KAR 59:015, Section 7(2)(c).

401 KAR 63:020 – Potentially Hazardous Matter or Toxic Substances

Kentucky regulates the emissions of toxic air pollutant emissions through 401 KAR 63:020. KDAQ can require that dispersion modeling or other analyses be completed by facilities at permit renewal or when constructing equipment when there is an increase in toxic pollutant emissions, as defined under 401 KAR 63:020, Section 2(2), deemed to be "significant." This is done so that there is a documented basis for affirming that a facility does not cause an adverse impact. However, pursuant to 401 KAR 63:020, Section 1, the requirements of this rule are applicable only to the extent that such emissions are not elsewhere subject to the provisions of the KAR.

P3 Boiler #1 and P3 Boiler #2 both emit toxic chemicals as a biproduct of fuel combustion; however, these emissions are elsewhere subject to the provisions of the KAR via their applicability to 40 CFR 63, Subpart JJJJJJ. Similarly, the proposed emergency generators emit small amounts of toxic chemicals; however, these emissions are subject to 40 CFR 63 Subpart ZZZZ. Any emissions of toxic chemicals from the new ULSD storage tanks are expected to be negligible.

REQUESTED PERMIT LIMITS

UK is herein requesting federally enforceable limits to ensure the Project is minor with respect to PSD for all pollutants. When calculating the project emissions increase (PEI) without any operational restrictions (i.e., assuming each boiler can operate on ULSD for 8,760 hours per year and each emergency generator will operate 500 hours per year), the project would exceed the SERs for NO_X, CO, PM, PM_{10}, and $PM_{2.5}$. Since ULSD is intended only as a back-up fuel, a more realistic PTE would be calculated by assuming no more than the equivalent of 500 hours of operation on fuel oil would be necessary in any 12-month period for each new boiler. As such, UK is seeking a limit restricting the amount of backup ULSD allowed to be fired in P3 Boilers #1 and #2 on a 12-month rolling basis to the equivalent of 500 hours at maximum capacity, or 830 Mgal/12-months combined for both boilers. The requested limits are as follows:

- P3 Boiler #1 (EU 104) and P3 Boiler #2 (EU 105) - 830,000 gallons ULSD per rolling 12-month period, combined for both boilers.

For the emergency generators, a more realistic PTE was developed based on one hour of operation per week and a 3-day extended emergency for each unit, or 124 hours per generator. As such, UK is seeking a limit restricting the hours of operation to 124 hours per generator, as a combined limit for the 6 identical 3,000 kW emergency generator engines and separate limit for the smaller, 1,250 kW emergency generator engine. The requested limits are as follows:

- P3 Hospital Emergency Generators (EU 106 – EU 111) – 744 hours of operation combined per rolling 12-month period.
- P3 Boilers Emergency Generator (EU 112) – 124 hours of operation per rolling 12-month period.

401 KAR 52:020, Section 16 provides procedures for existing Title V sources to obtain significant permit revisions for modifications that involve significant changes in the monitoring requirements or a relaxation in the reporting or recordkeeping requirements contained in the permit. Based on UK's request for a limit to preclude PSD permitting under 401 KAR 51:017, UK has prepared this submittal in accordance with the requirements for significant permit revisions, which follow the same procedures that are required for initial permits and permit renewals per 401 KAR 52:020, Section 16(2).

This permit action is not a modification under Title I of the Clean Air Act as this term is defined at 401 KAR 52:001 Section 1(52). Kentucky's Title V permitting rules define *modification* under Title I of the Act as "a change at a facility that would constitute a modification under 42 USC 7470 to 7492 or 42 USC 7501 to 7515." This includes PSD and NA-NSR modifications. The proposed changes do not trigger PSD permitting, provided that 12-month rolling ULSD usage and 12-month emergency generator hours of operation from the Project remains below the proposed limit. Therefore, this permit action is not considered a modification under Title I of the Act.

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If you have any questions or require additional information, please do not hesitate to contact Ms. Andrea Smith, Air Quality Compliance Manager. She can be reached at Andrea.Smith@uky.edu or 859-218-6265.

Sincerely,

Barry K. Swanson
Interim Vice President
Chief Facilities Officer

Attachments
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ATTACHMENT A – DEP7007 Forms

DEP7007AI – Administrative Information
DEP7007DD – Insignificant Activities
DEP7007A – Indirect Heat Exchangers
DEP7007EE – Internal Combustion Engines
DEP7007N - Emissions
DEP7007V - Applicable Requirements

ATTACHMENT B - Emissions Calculations

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007AI

Administrative Information

___ Section AI.1: Source Information

___ Section AI.2: Applicant Information

___ Section AI.3: Owner Information

___ Section AI.4: Type of Application

___ Section AI.5: Other Required Information

___ Section AI.6: Signature Block

___ Section AI.7: Notes, Comments, and Explanations

Additional Documentation

None

___ Additional Documentation attached

Source Name: University of Kentucky

KY EIS (AFS) #: 21- 067-00003

Permit #: V-25-005

Agency Interest (AI) ID: 1104

Date: Feb-26

Section AI.1: Source Information

Physical Location Address:	**Street:**	225 Frank D. Peterson Service Bldg.				
	City:	Lexington	**County:**	Fayette	**Zip Code:**	40506
Mailing Address:	**Street or P.O. Box:**	225 Frank D. Peterson Service Bldg.				
	City:	Lexington	**State:**	KY	**Zip Code:**	40506

Standard Coordinates for Source Physical Location

Longitude: -84.50496 (decimal degrees) **Latitude:** 38.03895 (decimal degrees)

Primary (NAICS) Category: University **Primary NAICS #:** 611310

Classification (SIC) Category: University **Primary SIC #:** 8221

Briefly discuss the type of business conducted at this site: The University of Kentucky is classified under Standard Industrial Code (SIC) 8221 for Colleges, Universities, and Professional Schools, and the Main Campus also includes UK HealthCare, which includes the hospitals and clinics of the University of Kentucky, and Samaritan Hospital. The majority of emission sources at are boilers and emergency generators, combusting natural gas, diesel, and coal.

Description of Area Surrounding ☐ Rural Area ☐ Industrial Park ☐ Residential Area ☑ Urban Area ☐ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employee ~17,000

distance to nearest residence or commercial 40 ft

Property Area: 600 acres

Is this source portable? ☐ Yes ☐ No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	☑ Currently Hold	☐ Need	☐ N/A
Solid Waste:	☐ Currently Hold	☐ Need	☑ N/A
RCRA:	☐ Currently Hold	☐ Need	☑ N/A
UST:	☐ Currently Hold	☐ Need	☑ N/A

Type of Regulated Waste Activity: ☐ Mixed Waste Generator ☐ Generator ☐ Recycler ☐ Other: _____ ☐ U.S. Importer of Hazardous Waste ☐ Transporter ☐ Treatment/Storage/Disposal Facility ☑ N/A

Section AI.2: Applicant Information

Applicant Name: University of Kentucky

Title: (if individual) N/A

Mailing Address:
Street or P.O. Box: 225 Frank D. Peterson Service Bldg.
City: Lexington **State:** KY **Zip Code:** 40506

Email: (if individual) andrea.smith@uky.edu

Phone: (859) 218-6265

Technical Contact

Name: Andrea Smith

Title: Air Quality Compliance Manager

Mailing Address:
Street or P.O. Box: Same as Applicant
City: **State:** **Zip Code:**

Email:

Phone: (859) 218-6265

Air Permit Contact for Source

Name: Same as technical contact.

Title:

Mailing Address:
Street or P.O. Box:
City: **State:** **Zip Code:**

Email:

Phone:

Section AI.3: Owner Information

☑ **Owner same as applicant**

Name:

Title:

Mailing Address: **Street or P.O. Box:**

City: **State:** **Zip Code:**

Email:

Phone:

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position
State Owned University	

Section AI.4: Type of Application

Current Status: ☑ Title V ☐ Conditional Major ☐ State-Origin ☐ General Permit ☐ Registration ☐ None

Requested Action: *(check all that apply)*

☐ Name Change	☐ Initial Registration	☑ Significant Revision	☐ Administrative Permit Amendment
☐ Renewal Permit	☐ Revised Registration	☐ Minor Revision	☐ Initial Source-wide Operating Permit
☐ 502(b)(10)Change	☐ Extension Request	☐ Addition of New Facility	☐ Portable Plant Relocation Notice
☐ Revision	☐ Off Permit Change	☐ Landfill Alternate Compliance Submittal	☐ Modification of Existing Facilities
☐ Ownership Change	☐ Closure		

Requested Status: ☑ Title V ☐ Conditional Major ☐ State-Origir ☐ PSD ☐ NSR ☐ Other: _____

Is the source requesting a limitation of potential emissions? ☐ Yes ☑ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☐ Particulate Matter		☐ Single HAP	9 tpy (retain current limit)
☐ Volatile Organic Compounds (VOC)		☐ Combined HAPs	22.5 tpy (retain current limit)
☐ Carbon Monoxide		☐ Air Toxics (40 CFR 68, Subpart F)	
☐ Nitrogen Oxides		☐ Carbon Dioxide	
☐ Sulfur Dioxide		☐ Greenhouse Gases (GHG)	
☐ Lead		☑ Other	Refer to AI.7 Form

For New Construction:

Proposed Start Date of Construction: *(MM/YYYY)* Q1 2027 **Proposed Operation Start-Up Date:** *(MM/YYYY)* Q3 2027

For Modifications:

Proposed Start Date of Modification: *(MM/YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM/YYYY)* _____

Applicant is seeking coverage under a permit shield. ☐ **Yes** ☑ **No** **Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.**

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA08	Fifty-Seven hot water heaters 8.4 MMBtu/hr combined	Varies (57 units)	N/A	Highest single pollutant (NOx) = 3.61 tpy combined
IA09	Four gas-fired space heaters 0.54 MMBtu/hr combined	N/A	N/A	Highest single pollutant (NOx) = 0.23 tpy combined
IA10	One gas-fired furnace 0.08 MMBtu/hr	N/A	N/A	Highest single pollutant (NOx) = 0.03 tpy combined
IA11	**Seventeen** natural gas heat exchangers under 1 MMBtu/hr each	N/A	N/A	Highest single pollutant (NOx) < 0.43 tpy each
IA12	#2 Diesel Fuel Cylinder tank and vehicle fueling, underground (2 tanks)	Bldg 490 #2 Cooling Diesel Fueling Tank; Bldg 88 Ag Motor Diesel Fueling Tank	N/A	Negligible, <0.01 tpy VOC per AP-42 Section 5.2 and weekly tank turnovers
IA14	Grain Handling Operations (2.1	N/A	401 KAR 59:010 401 KAR 63:010	PM = 0.112 tpy
IA15	Six 500-Gallon Fermenters	N/A	401 KAR 63:010	VOC = .00113 tpy
IA16	Aging Facility (952 bbl/yr)	N/A	401 KAR 63:010	VOC = 3.28 tpy

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

By:	**Authorized Signature**	**Date** 2/27/2026
	Barry K. Swanson	Acting Chief Facilities Officer, Facilities Management
	Type/Print Name of Signatory	**Title of Signatory**

Section AI.7: Notes, Comments, and Explanations

UK is herein requesting the following limits:
1) P3 Boiler #1 (EU 104) and P3 Boiler #2 (EU 105) - 830,000 gallons ULSD per rolling 12-month period, combined for both boilers.
2) P3 Hospital Emergency Generators (EU 106 – EU 111) – 744 hours of operation combined per each rolling 12-month period.
3) P3 Boilers Emergency Generator (EU 112) – 124 hours of operation per rolling 12-month period.

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007A

Indirect Heat Exchangers and Turbines

___ Section A.1: General Information
___ Section A.2: Operating and Fuel Information
___ Section A.3: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG
____ Manufacturer's specifications

Source Name: University of Kentucky
KY EIS (AFS) #: 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: Feb-26

Section A.1: General Information

Emission Unit #	Emission Unit Name	Process ID	Process Name	Identify General Type: Indirect Heat Exchanger, Gas Turbine, or Combustion Turbine	Indirect Heat Exchanger Configuration	Manufacturer	Model No./ Serial No.	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	SCC Code	SCC Units	Control Device ID	Stack ID
EU104	P3 Boiler #1	1	Natural Gas Combustion w/ LNB	Indirect Heat Exchanger	Industrial Watertube Boiler	Superior Boiler	Custom	Q1 2027	10300601	Million Cubic Feet Natural Gas Burned	na	S-104
EU104	P3 Boiler #1	2	No. 2 Fuel Oil Back-up	Indirect Heat Exchanger	Industrial Watertube Boiler	Superior Boiler	Custom	Q1 2027	10300501	1000 Gallons Distillate Oil (No. 1 & 2)	na	S-104
EU105	P3 Boiler #2	1	Natural Gas Combustion w/ LNB	Indirect Heat Exchanger	Industrial Watertube Boiler	Superior Boiler	Custom	Q1 2027	10300601	Million Cubic Feet Natural Gas Burned	na	S-105
EU105	P3 Boiler #2	2	No. 2 Fuel Oil Back-up	Indirect Heat Exchanger	Industrial Watertube Boiler	Superior Boiler	Custom	Q1 2027	10300501	1000 Gallons Distillate Oil (No. 1 & 2)	na	S-105

Section A.2: Operating and Fuel Information

Emission Unit #	If multipurpose unit, identify the percentage of use by purpose				Rated Capacity Heat Input *(MMBTU/hr)*	Rated Capacity Power Output		Describe Operating Scenario (only if this unit will be used in different configurations)	Classify Fuel as Primary or Secondary	Identify Fuel Type: Coal, Natural Gas, Wood, Biomass, Landfill/Digester Gas, Fuel Oil # (specify 1-6), or Other	Heat Content (HHV)		Maximum Operating Hours	Ash Content *(%)*	Sulfur Content *(%)*
	Space Heat	Process Heat	Power	Emergency			*(Specify units: hp, MW, or lb steam/hr)*					*(Specify units: Btu/lb, Btu/gal, or Btu/scf)*			
EU104					121.7	100	lb Steam / hr	N/A	Primary	Natural Gas	1,020	Btu/scf	8,760	N/A	N/A
EU104					116.2	100	lb Steam / hr	N/A	Secondary	No. 2 Fuel Oil	140	MMBtu/Mgal	500	N/A	0.0015%
EU105					121.7	100	lb Steam / hr	N/A	Primary	Natural Gas	1,020	Btu/scf	8,760	N/A	N/A
EU105					116.2	100	lb Steam / hr	N/A	Secondary	No. 2 Fuel Oil	140	MMBtu/Mgal	500	N/A	0.0015%

Section A.3: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
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DEP7007EE

Internal Combustion Engines

___ Section EE.1: General Information
___ Section EE.2: Operating Information
___ Section EE.3: Design Information
___ Section EE.4: Fuel Information
___ Section EE.5: Emission Factor Information
___ Section EE.6: Notes, Comments, and Explanations

Additional Documentation

__ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG

__ Attach EPA certification of the engine

Source Name: University of Kentucky
KY EIS (AFS) #: 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: Feb-26

Section EE.1: General Information

Emission Unit #	Emission Unit Name	Control Device ID	Stack ID	Manufacturer	Model Number	Model Year	Date of Manufacture	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Date Reconstructed/ Modified	List Applicable Regulations
EU106	P3 Hospital Diesel-Fired Emergency Generator #1	N/A	S-106	Caterpillar	Cat® 3516E	TBD	TBD	Q1 2027	N/A	40 CFR 63 Subpart ZZZZ, 40 CFR 60 Subpart IIII
EU107	P3 Hospital Diesel-Fired Emergency Generator #2	N/A	S-107	Caterpillar	Cat® 3516E	TBD	TBD	Q1 2027	N/A	40 CFR 63 Subpart ZZZZ, 40 CFR 60 Subpart IIII
EU108	P3 Hospital Diesel-Fired Emergency Generator #3	N/A	S-108	Caterpillar	Cat® 3516E	TBD	TBD	Q1 2027	N/A	40 CFR 63 Subpart ZZZZ, 40 CFR 60 Subpart IIII
EU109	P3 Hospital Diesel-Fired Emergency Generator #4	N/A	S-109	Caterpillar	Cat® 3516E	TBD	TBD	Q1 2027	N/A	40 CFR 63 Subpart ZZZZ, 40 CFR 60 Subpart IIII
EU110	P3 Hospital Diesel-Fired Emergency Generator #5	N/A	S-110	Caterpillar	Cat® 3516E	TBD	TBD	Q1 2027	N/A	40 CFR 63 Subpart ZZZZ, 40 CFR 60 Subpart IIII

Emission Unit #	Emission Unit Name	Control Device ID	Stack ID	Manufacturer	Model Number	Model Year	Date of Manufacture	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Date Reconstructed/ Modified	List Applicable Regulations
EU111	P3 Hospital Diesel-Fired Emergency Generator #6	N/A	S-111	Caterpillar	Cat® 3516E	TBD	TBD	Q1 2027	N/A	40 CFR 63 Subpart ZZZZ, 40 CFR 60 Subpart IIII
EU112	P3 Boilers Diesel-Fired Emergency Generator	N/A	S-112	Caterpillar	Cat® C32	TBD	TBD	Q1 2027	N/A	40 CFR 63 Subpart ZZZZ, 40 CFR 60 Subpart IIII

Section EE.2: Operating Information

Emission Unit #	Engine Purpose (Identify if Non-Emergency, Emergency,Fire/Water Pump, Black-start engine for combustion turbine, Engine Testing)	Hours Operated	Is this engine a rental? *(Yes/No)*	Rental Time Period *(hrs)*	Alternate Operating Scenarios (Describe any operating scenarios in which the engine may be used in a different configuration)
EU106	Emergency	744	No	N/A	N/A
EU107	Emergency		No	N/A	N/A
EU108	Emergency		No	N/A	N/A
EU109	Emergency		No	N/A	N/A
EU110	Emergency		No	N/A	N/A
EU111	Emergency		No	N/A	N/A
EU112	Emergency	124	No	N/A	N/A

Section EE.3: Design Information

Emission Unit #	Engine Type (Identify all that apply: Commercial, Institutional, Stationary, Non-Road)	Ignition Type (Identify if either Compression or Spark Ignition)	Engine Family (Identify all that apply: 2-stroke, 4-stroke, Rich Burn, Lean Burn)	Maximum Engine Power *(bhp)*	Maximum Engine Speed *(rpm)*	Total Displacement *(L)*	Number of Cylinders
EU106	Stationary	Compression Ignition	4-Stroke	4,023	1,800	78.1	16
EU107	Stationary	Compression Ignition	4-Stroke	4,023	1,800	78.1	16
EU108	Stationary	Compression Ignition	4-Stroke	4,023	1,800	78.1	16
EU109	Stationary	Compression Ignition	4-Stroke	4,023	1,800	78.1	16
EU110	Stationary	Compression Ignition	4-Stroke	4,023	1,800	78.1	16
EU111	Stationary	Compression Ignition	4-Stroke	4,023	1,800	78.1	16
EU112	Stationary	Compression Ignition	4-Stroke	1,676	TBD	32.1	12

Section EE.4: Fuel Information

Emission Unit #	Identify if Primary, Secondary, or Tertiary Fuel	Fuel Type (Identify if Diesel, Gasoline, Natural Gas, Liquefied Petroleum Gas (LPG), Landfill/Digester Gas, or Other)	Fuel Grade	Percent Time Used *(%)*	Maximum Fuel Consumption	Heat Content	Sulfur Content *(%)*	SCC Code	SCC Units
EU106	Primary	Diesel	ULSD	100%	0.204 Mgal/hr	137,000 Btu/gal	0.0015%	20300101	1000 Gallons Distillate Oil (Diesel) Burned
EU107	Primary	Diesel	ULSD	100%	0.204 Mgal/hr	137,000 Btu/gal	0.0015%	20300101	1000 Gallons Distillate Oil (Diesel) Burned
EU108	Primary	Diesel	ULSD	100%	0.204 Mgal/hr	137,000 Btu/gal	0.0015%	20300101	1000 Gallons Distillate Oil (Diesel) Burned
EU109	Primary	Diesel	ULSD	100%	0.204 Mgal/hr	137,000 Btu/gal	0.0015%	20300101	1000 Gallons Distillate Oil (Diesel) Burned
EU110	Primary	Diesel	ULSD	100%	0.204 Mgal/hr	137,000 Btu/gal	0.0015%	20300101	1000 Gallons Distillate Oil (Diesel) Burned
EU111	Primary	Diesel	ULSD	100%	0.204 Mgal/hr	137,000 Btu/gal	0.0015%	20300101	1000 Gallons Distillate Oil (Diesel) Burned
EU112	Primary	Diesel	ULSD	100%	0.087 Mgal/hr	137,000 Btu/gal	0.0015%	20300101	1000 Gallons Distillate Oil (Diesel) Burned

Section EE.5: Emission Factor Information

Emission factors expressed here are based on the potential to emit.

Emission Unit #	Fuel	Pollutant	Emission Factor	Emission Factor Units	Source of Emission Factor
EU106 - EU111	Diesel	PM/PM10/PM2.5	2.60	lb/Mgal	Manufacturer Specifications
EU106 - EU111	Diesel	NOx	293	lb/Mgal	Manufacturer Specifications
EU106 - EU111	Diesel	CO	52.10	lb/Mgal	Manufacturer Specifications
EU106 - EU111	Diesel	VOC	2.60	lb/Mgal	Manufacturer Specifications
EU106 - EU111	Diesel	SO2	0.21	lb/Mgal	AP-42 Table 3.4-1, 10/96
EU106 - EU111	Diesel	CO2	22,744	lb/Mgal	AP-42 Table 3.4-1, 10/96
EU106 - EU111	Diesel	N2O	0.18	lb/Mgal	40 CFR 98, Subpart C, Table C-2
EU106 - EU111	Diesel	CH4	0.91	lb/Mgal	40 CFR 98, Subpart C, Table C-2
EU106 - EU111	Diesel	Total HAP	0.19	lb/Mgal	AP-42 Table 3.4-3, 10/96
EU112	Diesel	PM/PM10/PM2.5	0.85	lb/Mgal	Manufacturer Specifications
EU112	Diesel	NOx	262	lb/Mgal	Manufacturer Specifications
EU112	Diesel	CO	8.88	lb/Mgal	Manufacturer Specifications
EU112	Diesel	VOC	4.23	lb/Mgal	Manufacturers Specifications (TOC)
EU112	Diesel	SO2	0.20	lb/Mgal	AP-42 Table 3.4-1, 10/96
EU112	Diesel	CO2	22,152	lb/Mgal	AP-42 Table 3.4-1, 10/96
EU112	Diesel	N2O	0.18	lb/Mgal	40 CFR 98, Subpart C, Table C-2
EU112	Diesel	CH4	0.89	lb/Mgal	40 CFR 98, Subpart C, Table C-2
EU112	Diesel	Formaldehyde	0.01	lb/Mgal	AP-42 Table 3.4-3
EU112	Diesel	Total HAP	0.18	lb/Mgal	AP-42 Table 3.4-3

Section EE.6: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007N

Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
__ Section N.3: Fugitive Information
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: University of Kentucky
KY EIS (AFS) #: 21- 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: Feb-26

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
EU104	P3 Boiler #1	1	Natural Gas Combustion w/ LNB	--	--	S-104	0.12	CO	37.68	Vendor guarantee	--	--	4.49	4.49	19.69	19.69
								NOx	11.14	Vendor guarantee	--	--	1.33	1.33	5.82	5.82
								PM	7.60	AP-42 Section 1.4 Table 1.4-2 (7/98)	--	--	0.91	0.91	3.97	3.97
								PM10	7.60	AP-42 Section 1.4 Table 1.4-2 (7/98)	--	--	0.91	0.91	3.97	3.97
								PM2.5	7.60	AP-42 Section 1.4 Table 1.4-2 (7/98)	--	--	0.91	0.91	3.97	3.97
								SO2	0.29	Maximum based on 12/20/2024 analysis	--	--	0.03	0.03	0.15	0.15
								VOC	5.50	AP-42 Section 1.4 Table 1.4-2 (7/98)	--	--	0.66	0.66	2.87	2.87
								H2SO4	2.19E-03	1.53% conversion of SO2 to H2S	--	--	2.61E-04	2.61E-04	1.14E-03	1.14E-03
								Lead	5.00E-04	AP-42, Section 1.4	--	--	5.96E-05	5.96E-05	2.61E-04	2.61E-04
								CO2	120,000	AP-42, Section 1.4	--	--	14,314	14,314	62,696	62,696
								CH4	2.30	AP-42, Section 1.4	--	--	0.27	0.27	1.20	1.20
								N2O	0.64	AP-42, Section 1.4	--	--	0.08	0.08	0.33	0.33
								CO2e	120,234	GWP from Subpart 98	--	--	14,342	14,342	62,818	62,818

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU104	P3 Boiler #1	2	No. 2 Fuel Oil Back-up	--	--	S-104	0.83	CO	13.10	Vendor guarantee	--	--	10.87	10.87	2.72	2.72
								NOx	9.82	Vendor guarantee	--	--	8.15	8.15	2.04	2.04
								PM	3.30	AP-42 Table 1.3-1 and 1.3-2	--	--	2.74	2.74	0.68	0.68
								PM10	3.30	PM=PM10	--	--	2.74	2.74	0.68	0.68
								PM2.5	3.30	PM = PM2.5	--	--	2.74	2.74	0.68	0.68
								SO2	0.21	AP-42 Table 1.3-1	--	--	0.18	0.18	0.04	0.04
								VOC	0.34	AP-42 Table 1.3-3	--	--	0.28	0.28	0.07	0.07
								H2SO4	1.63E-03	AP-42 Table 1.3-1	--	--	1.35E-03	1.35E-03	3.38E-04	3.38E-04
								Lead	1.26E-03	AP-42 Table 1.3-1	--	--	1.05E-03	1.05E-03	2.61E-04	2.61E-04
								CO2	22,300	AP-42 Table 1.3-12	--	--	18,511	18,511	4,628	4,628
								CH4	0.22	AP-42 Table 1.3-3	--	--	0.18	0.18	0.04	0.04
								N2O	0.26	AP-42 Table 1.3-9	--	--	0.22	0.22	0.05	0.05
								CO2e	22,375	GWP from Subpart 98	--	--	18,573	18,573	4,643	4,643
EU105	P3 Boiler #2	1	Natural Gas Combustion w/ LNB	--	--	S-105	0.12	CO	37.68	Vendor guarantee	--	--	4.49	4.49	19.69	19.69
								NOx	11.14	Vendor guarantee	--	--	1.33	1.33	5.82	5.82
								PM	7.60	AP-42 Section 1.4 Table 1.4-2 (7/98)	--	--	0.91	0.91	3.97	3.97
								PM10	7.60	AP-42 Section 1.4 Table 1.4-2 (7/98)	--	--	0.91	0.91	3.97	3.97
								PM2.5	7.60	AP-42 Section 1.4 Table 1.4-2 (7/98)	--	--	0.91	0.91	3.97	3.97
								SO2	0.29	Maximum based on 12/20/2024 analysis	--	--	0.03	0.03	0.15	0.15
								VOC	5.50	AP-42 Section 1.4 Table 1.4-2 (7/98)	--	--	0.66	0.66	2.87	2.87
								H2SO4	2.19E-03	1.53% conversion of SO2 to H2S	--	--	2.61E-04	2.61E-04	1.14E-03	1.14E-03
								Lead	5.00E-04	AP-42, Section 1.4	--	--	5.96E-05	5.96E-05	2.61E-04	2.61E-04
								CO2	120,000	AP-42, Section 1.4	--	--	14,314	14,314	62,696	62,696
								CH4	2.30	AP-42, Section 1.4	--	--	0.27	0.27	1.20	1.20
								N2O	0.64	AP-42, Section 1.4	--	--	0.08	0.08	0.33	0.33
								CO2e	120234	GWP from Subpart 98	--	--	14,342	14,342	62,818	62,818

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU105	P3 Boiler #2	2	No. 2 Fuel Oil Back-up	--	--	S-105	0.83	CO	13.10	Vendor guarantee	--	--	10.87	10.87	2.72	2.72
								NOx	9.82	Vendor guarantee	--	--	8.15	8.15	2.04	2.04
								PM	3.30	AP-42 Table 1.3-1 and 1.3-2	--	--	2.74	2.74	0.68	0.68
								PM10	3.30	PM=PM10	--	--	2.74	2.74	0.68	0.68
								PM2.5	3.30	PM = PM2.5	--	--	2.74	2.74	0.68	0.68
								SO2	0.21	AP-42 Table 1.3-1	--	--	0.18	0.18	0.04	0.04
								VOC	0.34	AP-42 Table 1.3-3	--	--	0.28	0.28	0.07	0.07
								H2SO4	1.63E-03	AP-42 Table 1.3-1	--	--	1.35E-03	1.35E-03	3.38E-04	3.38E-04
								Lead	1.26E-03	AP-42 Table 1.3-1	--	--	1.05E-03	1.05E-03	2.61E-04	2.61E-04
								CO2	22,300	AP-42 Table 1.3-12	--	--	18,511	18,511	4,628	4,628
								CH4	0.22	AP-42 Table 1.3-3	--	--	0.18	0.18	0.04	0.04
								N2O	0.26	AP-42 Table 1.3-9	--	--	0.22	0.22	0.05	0.05
								CO2e	22,375	GWP from Subpart 98	--	--	18,573	18,573	4,643	4,643
EU106	P3 Hospital Diesel-Fired Emergency Generator #1	1	No. 2 Fuel Oil	N/A	N/A	S-106	0.204	CO	52.10	Manufacturer Specifications	--	--	10.64	10.64	0.66	0.66
								NOx	293	Manufacturer Specifications	--	--	59.96	59.96	3.72	3.72
								PM	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								PM10	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								PM2.5	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								SO2	0.21	AP-42 Table 3.4-1, 10/96	--	--	0.04	0.04	2.65E-03	2.65E-03
								VOC	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								Total HAPs	0.19	AP-42 Table 3.4-3, 10/96	--	--	0.04	0.04	2.38E-03	2.38E-03
								Formaldehyde	0.01	AP-42 Table 3.4-3, 10/96	--	--	2.22E-03	2.22E-03	1.38E-04	1.38E-04
								CO2	22,744	AP-42 Table 3.4-1, 10/96	--	--	4,647	4,647	288	288
								CH4	0.91	40 CFR 98, Subpart C, Table C-2	--	--	0.19	0.19	0.01	0.01
								N2O	0.18	40 CFR 98, Subpart C, Table C-2	--	--	0.04	0.04	2.31E-03	2.31E-03
								CO2e	22,818	40 CFR 98, Subpart A	--	--	4,662	4,662	289	289

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU107	P3 Hospital Diesel-Fired Emergency Generator #2	1	No. 2 Fuel Oil	N/A	N/A	S-107	0.204	CO	52.10	Manufacturer Specifications	--	--	10.64	10.64	0.66	0.66
								NOx	293	Manufacturer Specifications	--	--	59.96	59.96	3.72	3.72
								PM	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								PM10	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								PM2.5	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								SO2	0.21	AP-42 Table 3.4-1, 10/96	--	--	0.04	0.04	2.65E-03	2.65E-03
								VOC	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								Total HAPs	0.19	AP-42 Table 3.4-3, 10/96	--	--	0.04	0.04	2.38E-03	2.38E-03
								Formaldehyde	0.01	AP-42 Table 3.4-3, 10/96	--	--	2.22E-03	2.22E-03	1.38E-04	1.38E-04
								CO2	22,744	AP-42 Table 3.4-1, 10/96	--	--	4,647	4,647	288	288
								CH4	0.91	40 CFR 98, Subpart C, Table C-2	--	--	0.19	0.19	0.01	0.01
								N2O	0.18	40 CFR 98, Subpart C, Table C-2	--	--	0.04	0.04	2.31E-03	2.31E-03
								CO2e	22,818	40 CFR 98, Subpart A	--	--	4,662	4,662	289	289
EU108	P3 Hospital Diesel-Fired Emergency Generator #3	1	No. 2 Fuel Oil	N/A	N/A	S-108	0.204	CO	52.10	Manufacturer Specifications	--	--	10.64	10.64	0.66	0.66
								NOx	293	Manufacturer Specifications	--	--	59.96	59.96	3.72	3.72
								PM	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								PM10	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								PM2.5	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								SO2	0.21	AP-42 Table 3.4-1, 10/96	--	--	0.04	0.04	2.65E-03	2.65E-03
								VOC	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								Total HAPs	0.19	AP-42 Table 3.4-3, 10/96	--	--	0.04	0.04	2.38E-03	2.38E-03
								Formaldehyde	0.01	AP-42 Table 3.4-3, 10/96	--	--	2.22E-03	2.22E-03	1.38E-04	1.38E-04
								CO2	22,744	AP-42 Table 3.4-1, 10/96	--	--	4,647	4,647	288	288
								CH4	0.91	40 CFR 98, Subpart C, Table C-2	--	--	0.19	0.19	0.01	0.01
								N2O	0.18	40 CFR 98, Subpart C, Table C-2	--	--	0.04	0.04	2.31E-03	2.31E-03
								CO2e	22,818	40 CFR 98, Subpart A	--	--	4,662	4,662	289	289

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU109	P3 Hospital Diesel-Fired Emergency Generator #4	1	No. 2 Fuel Oil	N/A	N/A	S-109	0.204	CO	52.10	Manufacturer Specifications	--	--	10.64	10.64	0.66	0.66
								NOx	293	Manufacturer Specifications	--	--	59.96	59.96	3.72	3.72
								PM	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								PM10	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								PM2.5	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								SO2	0.21	AP-42 Table 3.4-1, 10/96	--	--	0.04	0.04	2.65E-03	2.65E-03
								VOC	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								Total HAPs	0.19	AP-42 Table 3.4-3, 10/96	--	--	0.04	0.04	2.38E-03	2.38E-03
								Formaldehyde	0.01	AP-42 Table 3.4-3, 10/96	--	--	2.22E-03	2.22E-03	1.38E-04	1.38E-04
								CO2	22,744	AP-42 Table 3.4-1, 10/96	--	--	4,647	4,647	288	288
								CH4	0.91	40 CFR 98, Subpart C, Table C-2	--	--	0.19	0.19	0.01	0.01
								N2O	0.18	40 CFR 98, Subpart C, Table C-2	--	--	0.04	0.04	2.31E-03	2.31E-03
								CO2e	22,818	40 CFR 98, Subpart A	--	--	4,662	4,662	289	289
EU110	P3 Hospital Diesel-Fired Emergency Generator #5	1	No. 2 Fuel Oil	N/A	N/A	S-110	0.204	CO	52.10	Manufacturer Specifications	--	--	10.64	10.64	0.66	0.66
								NOx	293	Manufacturer Specifications	--	--	59.96	59.96	3.72	3.72
								PM	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								PM10	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								PM2.5	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								SO2	0.21	AP-42 Table 3.4-1, 10/96	--	--	0.04	0.04	2.65E-03	2.65E-03
								VOC	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								Total HAPs	0.19	AP-42 Table 3.4-3, 10/96	--	--	0.04	0.04	2.38E-03	2.38E-03
								Formaldehyde	0.01	AP-42 Table 3.4-3, 10/96	--	--	2.22E-03	2.22E-03	1.38E-04	1.38E-04
								CO2	22,744	AP-42 Table 3.4-1, 10/96	--	--	4,647	4,647	288	288
								CH4	0.91	40 CFR 98, Subpart C, Table C-2	--	--	0.19	0.19	0.01	0.01
								N2O	0.18	40 CFR 98, Subpart C, Table C-2	--	--	0.04	0.04	2.31E-03	2.31E-03
								CO2e	22,818	40 CFR 98, Subpart A	--	--	4,662	4,662	289	289

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU111	P3 Hospital Diesel-Fired Emergency Generator #6	1	No. 2 Fuel Oil	N/A	N/A	S-111	0.204	CO	52.10	Manufacturer Specifications	--	--	10.64	10.64	0.66	0.66
								NOx	293	Manufacturer Specifications	--	--	59.96	59.96	3.72	3.72
								PM	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								PM10	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								PM2.5	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								SO2	0.21	AP-42 Table 3.4-1, 10/96	--	--	0.04	0.04	2.65E-03	2.65E-03
								VOC	2.60	Manufacturer Specifications	--	--	0.53	0.53	0.03	0.03
								Total HAPs	0.19	AP-42 Table 3.4-3, 10/96	--	--	0.04	0.04	2.38E-03	2.38E-03
								Formaldehyde	0.01	AP-42 Table 3.4-3, 10/96	--	--	2.22E-03	2.22E-03	1.38E-04	1.38E-04
								CO2	22,744	AP-42 Table 3.4-1, 10/96	--	--	4,647	4,647	288	288
								CH4	0.91	40 CFR 98, Subpart C, Table C-2	--	--	0.19	0.19	0.01	0.01
								N2O	0.18	40 CFR 98, Subpart C, Table C-2	--	--	0.04	0.04	2.31E-03	2.31E-03
								CO2e	22,818	40 CFR 98, Subpart A	--	--	4,662	4,662	289	289
EU112	P3 Boilers Diesel-Fired Emergency Generator	1	No. 2 Fuel Oil	N/A	N/A	S-112	0.087	CO	8.88	Manufacturer Specifications	--	--	1.81	1.81	0.11	0.11
								NOx	262	Manufacturer Specifications	--	--	53.56	53.56	3.32	3.32
								PM	0.85	Manufacturer Specifications	--	--	0.17	0.17	0.01	0.01
								PM10	0.85	Manufacturer Specifications	--	--	0.17	0.17	0.01	0.01
								PM2.5	0.85	Manufacturer Specifications	--	--	0.17	0.17	0.01	0.01
								SO2	0.20	AP-42 Table 3.4-1, 10/96	--	--	0.04	0.04	2.58E-03	2.58E-03
								VOC	4.23	Manufacturers Specifications (TOC)	--	--	0.86	0.86	0.05	0.05
								Total HAPs	0.18	AP-42 Table 3.4-3	--	--	0.04	0.04	2.32E-03	2.32E-03
								Formaldehyde	0.01	AP-42 Table 3.4-3	--	--	2.16E-03	2.16E-03	1.34E-04	1.34E-04
								CO2	22,152	AP-42 Table 3.4-1, 10/96	--	--	4,526	4,526	281	281
								CH4	0.89	40 CFR 98, Subpart C, Table C-2	--	--	0.18	0.18	0.01	0.01
								N2O	0.18	40 CFR 98, Subpart C, Table C-2	--	--	0.04	0.04	2.25E-03	2.25E-03
								CO2e	22,224	40 CFR 98, Subpart A	--	--	4,540	4,540	282	282

Section N.2: Stack Information

UTM Zone: 16

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter *(ft)*	Height *(ft)*	Base Elevation *(ft)*	Northing *(m)*	Easting *(m)*	Flowrate *(acfm)*	Temperature *(°F)*	Exit Velocity *(ft/sec)*
S-104	P3 Boiler #1	TBD	50 +	298.7	718,824.1	4,211,923.7	35,681	312	TBD
S-105	P3 Boiler #2	TBD	50 +	298.7	718,824.1	4,211,923.7	35,681	312	TBD
S-106	P3 Hospital Diesel-Fired Emergency Generator #1	TBD	TBD	298.7	718,794.9	4,211,861.4	22,806	902	TBD
S-107	P3 Hospital Diesel-Fired Emergency Generator #2	TBD	TBD	298.7	718,794.9	4,211,861.4	22,806	902	TBD
S-108	P3 Hospital Diesel-Fired Emergency Generator #3	TBD	TBD	298.7	718,794.9	4,211,861.4	22,806	902	TBD
S-109	P3 Hospital Diesel-Fired Emergency Generator #4	TBD	TBD	298.7	718,794.9	4,211,861.4	22,806	902	TBD
S-110	P3 Hospital Diesel-Fired Emergency Generator #5	TBD	TBD	298.7	718,794.9	4,211,861.4	22,806	902	TBD
S-111	P3 Hospital Diesel-Fired Emergency Generator #6	TBD	TBD	298.7	718,794.9	4,211,861.4	22,806	902	TBD
S-112	P3 Boilers Diesel-Fired Emergency Generator	TBD	TBD	298.7	718,824.1	4,211,923.7	10,006	807	TBD

Section N.3: Fugitive Information

UTM Zone:

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side *(ft)*	Length of the Y Side *(ft)*	Northing *(m)*	Easting *(m)*	Release Temperature *(°F)*	Release Height *(ft)*
Not Applicable for this Notification								

Section N.4: Notes, Comments, and Explanations
1. Annualized fuel oil emissions for EU104 & EU105 are based on the requested limitation of 415 M-gallons per year per unit (approx. 500 hours).
2. Annualized emissions for EU106 - EU112 are based on the requested limitation of 124 hours per year per unit.

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007V
Applicable Requirements and Compliance Activities

___ Section V.1: Emission and Operating Limitatio
___ Section V.2: Monitoring Requirem
___ Section V.3: Recordkeeping Requi
___ Section V.4: Reporting Requireme
___ Section V.5: Testing Requirements
___ Section V.6: Notes, Comments, and Explanatio

Additional Documentation

___ Complete DEP7007AI

Source Name: University of Kentucky
KY EIS (AFS) # 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: Feb-26

Section V.1: Emission and Operating Limitation(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NESHAP JJJJJJ: 401 KAR 59:015, Section 7(2)(c)	N/A	N/A	N/A	Meet the work practice standards established in 40 CFR Part 63, Table 2 to Subpart JJJJJJ, as established in 401 KAR 63:002, Section 2(4)(jjjjj).	Refer to V.3 recordkeeping and V.4 reporting requirements.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NESHAP JJJJJJ: 401 KAR 59:015, Section 7(2)(c) and 40 CFR 63.11201(b) referencing Table 2, Item 1.	N/A	N/A	N/A	Minimize the boilers' startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures. If manufacturer's recommended procedures are not available, the permittee shall follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available.	Refer to V.3 recordkeeping and V.4 reporting requirements.

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NSPS Db: 40 CFR 60.42b(k)(2); 40 CFR 60.43b(h)(5); and 40 CFR 60.48b(j)(7)	N/A	N/A	N/A	Only use natural gas and very low sulfur oil that contains no more than 0.30 wt% sulfur.	Purchase only compliant diesel fuel and submit reports to the Administrator certifying that only very low sulfur oil is used.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NESHAP JJJJJJ: 401 KAR 59:015, Section 7(2)(c); 40 CFR 63.11201(b) referencing Table 2, Item 5.; and 40 CFR 63.11223(b) and (c)	N/A	N/A	N/A	Conduct a tune-up of the boiler every 5 years when oxygen trim system is operated (in lieu of biennially) to demonstrate continuous compliance as specified in 40 CFR 63.11223(b)(1) through (7).	Perform a tune-up within 180 days of startup. Refer to V.3 recordkeeping and V.4 reporting requirements.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NESHAP JJJJJJ: 40 CFR 63.11205(a)	N/A	N/A	N/A	Operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.	Minimize startup and shutdown events.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	401 KAR 59:015, Section 4(1)(c)	PM	0.10 lb/MMBtu	N/A	Particulate matter (PM) emissions from each stack shall not exceed 0.10 lbs/MMBtu.	Units are assumed in compliance with the 401 KAR 59:015 PM emission standard while combusting natural gas or fuel oil based on AP-42 emission factors, manufacturer specifications or most recently approved stack test.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NESHAP JJJJJJ: 40 CFR 63.11210(f)	N/A	N/A	N/A	The permittee is not subject to the PM emission limitation in 40 CFR 63, Subpart JJJJJJ, Table 1 while combusting only ultra-low-sulfur liquid fuel. If the permittee intends to burn a fuel other than ultra-low-sulfur liquid fuel or gaseous fuels as defined in 40 CFR 63.11237, the permittee shall conduct a performance test within 60 days of burning the new fuel.	Compliance is assumed while combusting ultra-low-sulfur liquid fuel.

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	401 KAR 59:015, Section 4(2)(a)	Visible Emissions (VE)	20% Opacity	N/A	While combusting natural gas, opacity emissions from each stack shall not exceed 20 percent opacity except: a maximum of 27 percent opacity shall be allowed for one six minute period in any 60 consecutive minutes.	These units are assumed to be in compliance while combusting natural gas.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	401 KAR 59:015, Section 4(2)(c)	Visible Emissions (VE)	20% Opacity	N/A	While combusting natural gas, opacity emissions from each stack shall not exceed 20 percent opacity except: for emissions caused by building a new fire, emissions during the period required to bring the boiler up to operating conditions shall be allowed, if the method used is recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.	These units are assumed to be in compliance while combusting natural gas.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NSPS Db: 40 CFR 60.43b(f) & 40 CFR 60.43b(g)	Visible Emissions (VE)	20% Opacity	N/A	While combusting fuel oil, visible emissions from each stack shall not exceed 20 percent opacity (6-minute average) except for one 6-minute period per hour of not more than 27 percent opacity. This opacity standard applies at all times, except during periods of startup, shutdown, or malfunction.	Refer to V.2 monitoring, V5 testing, V.3 recordkeeping, and V.4 reporting requirements.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	401 KAR 59:015, Section 5(1)	SO2	0.8 lb/MMBtu	N/A	Sulfur dioxide (SO2) emissions from each stack shall not exceed 0.8 lb/MMBtu.	Units are assumed to be in compliance while combusting natural gas. While burning fuel oil, the facility shall obtain fuel receipts that certify that the oil meets the definition of distillate oil and certify reports to the Administrator certifying that only very low sulfur oil (per 40 CFR 60, Subpart Db) was combusted during the reporting period.

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NSPS Db: 40 CFR 60.44b(a) and (i) and 40 CFR 60.44b(h)	NOX	0.20 lb/MMBtu	N/A	Emissions of nitrogen oxides (expressed as NO2) from each stack shall not exceed 0.20 lb/MMBtu based on a 30-day rolling average. This NOX standard applies at all times including periods of startup, shutdown, or malfunction.	Refer to V.2 monitoring, V.5 testing, V.3 recordkeeping, and V.4 reporting requirements.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	To Preclude Applicability of 401 KAR 51:017	Fuel Oil (USLD) Usage	NA	830 Mgal/year	The P3 Boilers shall combust no more than 830,000 gallons fuel oil per year (12 month rolling total), equivalent to 500 hours of operation, combined for both boilers.	Refer to V.2 monitoring and V.3 recordkeeping.
EU106 EU107 EU108 EU109 EU110 EU111 EU112	P3 Hospital Diesel-Fired Emergency Generator #1 - #6 P3 Boilers Diesel-Fired Emergency Generator	NSPS IIII: 40 CFR 60.4211(f)	NA	NA	NA	In order for the engines to be considered emergency stationary ICE (Internal Combustion Engine) under 40 CFR 60, Subpart IIII, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 60.4211(f)(1)-(3) is prohibited. If the permittee does not operate the engines according to these requirements, the engines will not be considered emergency engines and shall meet all requirements for non-emergency engines.	
EU106 EU107 EU108 EU109 EU110 EU111 EU112	P3 Hospital Diesel-Fired Emergency Generator #1 - #6 P3 Boilers Diesel-Fired Emergency Generator	NSPS IIII: 40 CFR 60.4211(a)	NA	NA	NA	The permittee shall operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions, change only those emission-related settings that are permitted by the manufacturer; and meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply.	

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU106 EU107 EU108 EU109 EU110 EU111 EU112	P3 Hospital Diesel-Fired Emergency Generator #1 - #6 P3 Boilers Diesel-Fired Emergency Generator	NSPS IIII: 40 CFR 60.4207(b)	NA	NA	NA	The permittee shall use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted	
EU106 EU107 EU108 EU109 EU110 EU111 EU112	P3 Hospital Diesel-Fired Emergency Generator #1 - #6 P3 Boilers Diesel-Fired Emergency Generator	NSPS IIII: 40 CFR 60.4206	NA	NA	NA	The permittee shall operate and maintain the stationary CI ICE such that the emission standards required in 40 CFR 60.4205 are achieved over the entire life of the engine.	
EU106 EU107 EU108 EU109 EU110 EU111 EU112	P3 Hospital Diesel-Fired Emergency Generator #1 - #6 P3 Boilers Diesel-Fired Emergency Generator	NSPS IIII: 40 CFR 60.4211(g)	NA	NA	NA	If the engine and control device are not installed, configured, operated, and maintained according to the manufacturer's emission-related written instructions, or emission-related settings are changed in a way that is not permitted by the manufacturer, the permittee shall demonstrate compliance according to 40 CFR 60.4211(g)(3)	
EU106 EU107 EU108 EU109 EU110 EU111 EU112	P3 Hospital Diesel-Fired Emergency Generator #1 - #6 P3 Boilers Diesel-Fired Emergency Generator	NSPS IIII: 40 CFR 60.4205(b) 40 CFR 60.4211(c)	All	NA	NA	The emergency engines shall comply with the emission standards for new nonroad CI engines in 40 CFR 60.4202 for all pollutants, for the same model year and maximum engine power	Purchase engine certified to the emission standards in 40 CFR 60.4204(b), for the same model year and maximum engine power. The engine shall be installed and configured according to the manufacturer's emission-related specifications
EU106 EU107 EU108 EU109 EU110 EU111	P3 Hospital Diesel-Fired Emergency Generator #1 - #6	To Preclude Applicability of 401 KAR 51:017	Hours of Operation	NA	744 hours/year	P3 Hospital emergency generators shall be limited to 744 hours of operation combined per 12-month period. This cap does not authorize any non-emergency use beyond NSPS IIII limits.	Refer to V.2 monitoring and V.3 recordkeeping.

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU112	P3 Boilers Diesel-Fired Emergency Generator	To Preclude Applicability of 401 KAR 51:017	Hours of Operation	NA	124 hours/year	P3 Boilers emergancy generator shall be limited to 124 hours of operation per 12-month period.	Refer to V.2 monitoring and V.3 recordkeeping.

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	NSPS Db: 40 CFR 60.49b(d)(1)	Fuel Usage	The permittee shall monitor the amount of natural gas combusted (in MMscf) and the amount of fuel oil combusted (in gallons) during each day on a monthly
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	401 KAR 52:020, Section 10	Fuel Usage	Monitor the total amount of ULSD consumed (in gallons) on a monthly and on a consecutive twelve (12) month rolling total basis.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NOX	NSPS Db: 40 CFR 60.48b(g)	Emission Rate	Comply with the provisions of paragraphs (b), (c), (d), (e)(2), (e)(3), and (f) of 40 CFR 60.48b (NOX CEMS) or monitor steam generating unit operating conditions and predict NOX emission rates as specified in a plan submitted pursuant to 40 CFR 60.49b(c).
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NOX and O2/CO2	NSPS Db: 40 CFR 60.48b(b)(1)	Fuel Usage	If the option to operate NOX CEMS is selected, the permittee shall install, calibrate, maintain, and operate CEMS for measuring NOX and O2 (or CO2) emissions discharged to the atmosphere, and shall record the output
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	Visible Emissions (VE)	NSPS Db: 40 CFR 60.48b(a)	Opacity	While combusting fuel oil, the permittee shall conduct a performance test using U.S. EPA Reference Method 9 to demonstrate compliance with the applicable limit in 40 CFR 60.43b, and shall comply with either 40 CFR 60.48b(a)(1), (2), or (3).
EU106 EU107 EU108 EU109 EU110 EU111 EU112	P3 Hospital Diesel-Fired Emergency Generator #1 - #6 P3 Boilers Diesel-Fired Emergency Generator	NA	NSPS IIII: 40 CFR 60.4209(a)	Hours	The permittee shall install non-resettable hour meters prior to startup of each engine.

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	NSPS Db: 40 CFR 60.49b(d)(1)	Fuel Usage	Maintain records of the amount of natural gas combusted (in MMscf) and the amount of fuel oil combusted (in gallons) each day.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	401 KAR 52:020, Section 10	Fuel Usage	Compile and maintain records of the total amount of ULSD consumed (in gallons) on a monthly and on a consecutive twelve (12) month rolling total basis.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NOX	NSPS Db: 40 CFR 60.49b(g)	Emissions Rates	The permittee shall maintain records obtained through the use of CEMS or PEMS consisting of the information specified in 40 CFR 60.49b(g).
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	Visable Emissions	NSPS Db: 40 CFR 60.49b(f)(1)	Opacity	For each performance test conducted using Method 9 of appendix A-4 of this part, the owner or operator shall keep the records including the information specified in 40 CFR 60.49 (f)(1)(i) through (iii).
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	NSPS Db: 40 CFR 60.49b(r)(1)	Fuel Sulfur Conent	The permittee shall obtain and maintain at the affected facility fuel receipts (such as a current, valid purchase contract, tariff sheet, or transportation contract) from the fuel supplier that certify that the oil meets the definition of distillate oil and gaseous fuel meets the definition of natural gas as defined in 40 CFR 60.41b and the applicable sulfur limit. For the purposes of 40 CFR 60, Subpart Db the distillate oil need not meet the fuel nitrogen content
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	NSPS Db: 40 CFR 60.49b	N/A	The permittee shall maintain records of all performance tests.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	NSPS Db: 40 CFR 60.49b(o)	N/A	All records required under 40 CFR 60.49b shall be maintained for a period of 2 years following the date of such record.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	CO	40 CFR 63.11223(b)(6)	Concentration	The permittee shall maintain on-site and submit, if requested by the Administrator, a report containing the concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of each boiler; a description of any corrective actions taken as a part of the tune-up of each boiler; and the type and amount of fuel used over the 12 months prior to the tune-up of each boiler. Units sharing a fuel meter may estimate the fuel use by each unit.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	NESHAP JJJJJJ: 40 CFR 63.11225(c)	N/A	The permittee shall maintain a copy of the following: - Each notification and report that was submitted to comply with 40 CFR 63, Subpart JJJJJJ and all documentation supporting any Initial Notification or Notification of Compliance Status that was submitted - Records to document conformance with the work practices, emission reduction measure, and management practices required by 40 CFR 63.11214 and 40 CFR 63.11223 - Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment - Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in 40 CFR 63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation - Records of all inspection and monitoring data required by 40 CFR
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	NESHAP JJJJJJ: 40 CFR 63.11225(d)	N/A	Records shall be in a form suitable and readily available for expeditious review. The permittee shall keep each record for 5 years following the date of each recorded action. The permittee shall keep each record on-site or be accessible from a central location by computer or other means that instantly provide access at the site for at least 2 years after the date of each recorded action. The permittee may keep the records off site for the remaining 3 years.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU106 EU107 EU108 EU109 EU110 EU111 EU112	P3 Hospital Diesel-Fired Emergency Generator #1 - #6 P3 Boilers Diesel-Fired Emergency Generator	N/A	NSPS IIII: 40 CFR 60.4214(b)	Hours	The permittee shall record the time of operation of the engine and the reason the engine was in operation during that time on a monthly basis.
EU106 EU107 EU108 EU109 EU110 EU111	P3 Hospital Diesel-Fired Emergency Generator #1 - #6	N/A	401 KAR 52:020, Section 10	Hours	The permittee maintain records of the combined hours of operation of EUs 106-111 on a monthly basis.
EU106 EU107 EU108 EU109 EU110 EU111 EU112	P3 Hospital Diesel-Fired Emergency Generator #1 - #6 P3 Boilers Diesel-Fired Emergency Generator	N/A	401 KAR 52:020, Section 10	Hours	The permittee shall maintain records of the manufacturer's certified emissions certificate, manufacturer's written operating instructions, and any procedures developed by the permittee that are approved by the engine manufacturer, over the entire life of the engine.

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	NSPS Db: 40 CFR 60.49b(d)(1)	Annual Capacity	The permittee shall calculate the annual capacity factor individually for natural gas and fuel oil for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	NSPS Db: 40 CFR 60.49b(a)	Initial Startup Notification	The permittee shall submit notification of the date of initial startup, as provided by 40 CFR 60.7.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	SO2/PM/NOX	NSPS Db: 40 CFR 60.49b(b)	Performance Test Data	The permittee of each affected facility subject to the SO2, PM, or NOX emission limits under 40 CFR 60.42b, 60.43b, and 60.44b shall submit to the Administrator the performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in Appendix B of 40 CFR Part 60.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NOX	NSPS Db: 40 CFR 60.49b(c)	Emission Rates and Operating Conditions	The permittee of each affected facility subject to the NOX standard in 40 CFR 60.44b who seeks to demonstrate compliance with those standards through the monitoring of steam generating unit operating conditions in the provisions of 40 CFR 60.48b(g)(2) shall submit to the Administrator for approval a plan that identifies the operating conditions to be monitored in 40 CFR 60.48b(g)(2) and the records to be maintained in 40 CFR 60.49b(g). This plan shall be submitted to the Administrator for approval within 360 days of the initial startup of the affected facility. If the plan is approved, the permittee shall maintain records of predicted nitrogen oxide emission rates and the monitored operating conditions, including steam generating unit load, identified in the plan.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NOX	NSPS Db: 40 CFR 60.49b(h) and 40 CFR 60.49b(h)(4)	Excess Emissions	The permittee shall submit excess emission reports for any excess emissions that occurred during the reporting period. For purposes of 40 CFR 60.48b(g)(1), excess emissions are defined as any calculated 30-day rolling average NOX emission rate, as determined under 40 CFR 60.46b(e), that exceeds the applicable emission limits in 40 CFR 60.44b.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NOX	NSPS Db: 40 CFR 60.49b(h) and 40 CFR 60.49b(h)(4)	Emission Rates	The permittee shall submit reports consisting of the information specified in 40 CFR 60.49b(i) using data obtained through CEMS.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NOX	NSPS Db: 40 CFR 60.49b(v)	Quarterly Reports	The permittee may submit electronic quarterly reports for NOX in lieu of submitting the written reports required under paragraphs 40 CFR 60.49b(h), (i), (j), (k) or (l). The format of each quarterly electronic report shall be coordinated with the permitting authority. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the permittee, indicating whether compliance with the applicable emission standards and minimum data requirements of 40 CFR 60 Subpart Db was achieved during the reporting period. Before submitting reports in the electronic format, the permittee shall coordinate with the permitting authority to obtain their agreement to submit reports in this alternative format.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	NSPS Db: 40 CFR 60.49b(w)	Semi-Annual Reports	The reporting period for the reports required under 40 CFR 60, Subpart Db is each 6 month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	NSPS Db: 40 CFR 60.49b(r)(1)	Fuel Sulfur Content	Reports shall be submitted to the Administrator certifying that only very low sulfur oil meeting the definition in 40 CFR 60, Subpart Db, natural gas, wood, and/or other fuels that are known to contain insignificant amounts of sulfur were combusted in the affected facility during the reporting period.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	NESHAP JJJJJJ: 40 CFR 63.11225(a)(1) and (2)	Initial Startup Notification	The permittee shall submit to the Administrator all of the notifications in 40 CFR 63.7(b); 63.8(e) and (f); and 63.9(b) through (e), (g), and (h) that apply.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	N/A	NESHAP JJJJJJ: 40 CFR 63.11225(b)(1) and (2)	Annual Compliance Certification	The permittee shall prepare, by March 1 of each year, and submit to the delegated authority upon request, an annual compliance certification report for the previous calendar year containing the company name and address and a statement by a responsible official, with the official's name, title, phone number, email address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of 40 CFR 63, Subpart JJJJJJ.
EU106 EU107 EU108 EU109 EU110 EU111 EU112	P3 Hospital Diesel-Fired Emergency Generator #1 - #6 P3 Boilers Diesel-Fired Emergency Generator	N/A	NSPS IIII: 40 CFR 60.4214(d)	N/A	If the engine operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in 40 CFR 60.4211(f)(3) the permittee shall submit an annual report by March 31 of the following calendar year.

Section V.5: Testing Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	NOX	NSPS Db: 40 CFR 60.46b(e)(4)	NOX, 30-day rolling average	Following the date on which the initial performance test is completed, the permittee shall upon request determine compliance with the NOX standards in 40 CFR 60.44b through the use of a 30-day performance test. During periods when performance tests are not requested, NOX emissions data collected pursuant to 40 CFR 60.48b(g)(1) or 40 CFR 60.48b(g)(2) shall be used to calculate a 30-day rolling average emission rate on a daily basis and used to prepare excess emission reports, but will not be used to determine compliance with the NOX emission standards. A new 30-day rolling average emission rate shall be calculated for each steam generating unit operating day as the average of all of the hourly NOX emission data for the preceding 30 steam generating unit operating days.
EU104 & EU105	P3 Boiler #1 & P3 Boiler #2	Visible Emissions (VE)	NSPS Db: 40 CFR 60.46b(d)(7)	Opacity/Method 9	To determine compliance with the opacity limits under 40 CFR 60.43b (fuel oil), the permittee shall conduct an initial performance test as required under 40 CFR 60.8, and shall conduct subsequent performance tests as requested by the Administrator, using U.S. EPA Reference Method 9 of Appendix A of 40 CFR Part 60.
EU106 EU107 EU108 EU109 EU110 EU111 EU112	P3 Hospital Diesel-Fired Emergency Generator #1 - #6 P3 Boilers Diesel-Fired Emergency Generator	N/A	401 KAR 50:045, Section 4	N/A	Testing shall be conducted at such times as may be required by the Cabinet.

Section V.6: Notes, Comments, and Explanations

Division for Air Quality
300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007DD

Insignificant Activities

___ Section DD.1: Table of Insignificant Activities
___ Section DD.2: Signature Block
___ Section DD.3: Notes, Comments, and Explanations

Source Name: University of Kentucky
KY EIS (AFS 21- 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: Feb-26

Section DD.1: Table of Insignificant Activities

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3… etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA01	Fuel Oil Storage Tanks	N/A	N/A	<0.1 tpy VOC per tank
IA03	Laboratory Fume Hoods	N/A	N/A	Negligible
IA04	TSD Consolidation	N/A	N/A	<0.26 tpy VOC/HAP based on RCRA permit limit of 300hr/yr, 3 drums/hr, and worst-case emitting volatile as Chloroform
IA05	Transportation Research Center Spray Booth (Usage less than 5 gal/yr)	N/A	401 KAR 59:010	VOC/PM < 0.03 tpy, assuming 100% VOC or PM (max 10 lb/gal), usage <5 gal/yr
IA06	Arts and Visual Bldg. Paint Spray Booth (Usage less than 50 gal/yr)	N/A	401 KAR 59:010	VOC/PM < 0.25 tpy, assuming 100% VOC or PM (max 10 lb/gal)
IA07	TK-76 Fuel oil storage tank (300 gal)	TK-76	N/A	Negligible, <0.01 tpy VOC

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
IA08	Fifty-Seven hot water heaters 8.4 MMBtu/hr combined	Varies (57 units)	N/A	Highest single pollutant (NOx) = 3.61 tpy combined
IA09	Four gas-fired space heaters 0.54 MMBtu/hr combined	N/A	N/A	Highest single pollutant (NOx) = 0.23 tpy combined
IA10	One gas-fired furnace 0.08 MMBtu/hr	N/A	N/A	Highest single pollutant (NOx) = 0.03 tpy combined
IA11	**Seventeen** natural gas heat exchangers under 1 MMBtu/hr each	N/A	N/A	Highest single pollutant (NOx) < 0.43 tpy each
IA12	#2 Diesel Fuel Cylinder tank and vehicle fueling, underground (2 tanks)	Bldg 490 #2 Cooling Diesel Fueling Tank; Bldg 88 Ag Motor Diesel Fueling Tank	N/A	Negligible, <0.01 tpy VOC per AP-42 Section 5.2 and weekly tank turnovers
IA14	Grain Handling Operations (2.1	N/A	401 KAR 59:010 401 KAR 63:010	PM = 0.112 tpy
IA15	Six 500-Gallon Fermenters	N/A	401 KAR 63:010	VOC = .00113 tpy
IA16	Aging Facility (952 bbl/yr)	N/A	401 KAR 63:010	VOC = 3.28 tpy

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

	Authorized Signature	Date
By:	Barry K. Swanson	Acting Chief Facilities Officer, Facilities Management
	Type/Print Name of Signatory	Title of Signatory

Section DD.3: Notes, Comments, and Explanations
New fuel oil storage tanks (5) will be 30 Mgal capacity to store backup fuel for new Med Center Boilers, Emergency Generators, and Heating Plant Emergency Generator. Group with other ULSD storage tanks under IA-01. Tanks are not subject to NSPS Kc because only fuel oil with a vapor pressure of less than 0.25 psia is stored.

1. P3 Boiler #1 and #2, NG-Fired, FO Backup, 122 MMBtu/hr Potential Emissions Profile

> A new heating plant will be installed at the Medical Center operated by a third party, P3, to replace existing coal-fired capacity with natural gas capacity (fuel oil back-up) and expand steam capacity for the Chandler Hospital expansion. Potential emissions for the each P3 Boiler #1 and #2 are documented in this section.

1.1 Boiler Nomenclature and Specifications

> **P3 Boiler #1**

KyEIS Equipment, Source ID: **COMB37, EU104**
Emission Unit Description: Steam Boiler
KyEIS Process ID/Description: 1 - Natural Gas Combustion w/ LNB
KyEIS Process ID/Description: 2 - No. 2 Fuel Oil Back-up
Control Device: --
Stack ID: S-104

> **P3 Boiler #2**

KyEIS Equipment, Source ID: **COMB38, EU105**
Emission Unit Description: Steam Boiler
KyEIS Process ID/Description: 1 - Natural Gas Combustion w/ LNB
KyEIS Process ID/Description: 2 - No. 2 Fuel Oil Back-up
Control Device: --
Stack ID: S-105

> Process ID 1 SCC Information:

SCC Code 10300601
SCC Description External Combustion Boilers, Commercial/Institutional (1-03), Natural Gas (1-03-006), > 100 Million Btu/hr (1-03-006-01)
SCC Units Million Cubic Feet Natural Gas Burned
SCC Units Ab: Million Cubic Feet

> Process ID 2 SCC Information:

SCC Code 10300501
SCC Description External Combustion Boilers, Commercial/Institutional (1-03), Distillate Oil (1-03-005), Grades 1 and 2 Oil (1-03-005-01)
SCC Units 1000 Gallons Distillate Oil (No. 1 & 2) Burned
SCC Units Ab: 1000 Gallons

1.1.1 Natural Gas Combustion

Max Annual Operating Hours	8,760	hr/yr	
Combustion Efficiency =	82.90%		Superior Boiler bid package dated 9/25/2025.
Blowdown Rate =	3%		Superior Boiler bid package dated 9/25/2025.
Saturated Steam Enthalpy =	1,196.7	Btu/lbm	at 368 F steam temperature
Steam Mass Flow Required =	100.0	klb/hr	Specification
	119.7	MMBtu/hr	= 1196.65 Btu/lbm x 100 klb/hr x 1,000 lb/klb / 1,000,000 Btu/MMBtu
Feedwater Mass Flow Rate =	103.09	klb/hr	= 100 klb/hr / (1 - 0.03)
Specific Enthalpy of Feedwater =	195.1	Btu/lbm	Enthalpy of saturated liquid at feedwater temperature of 227°F
	20.12	MMBtu/hr	= 195.121 Btu/lbm x 103.09 klb/hr x 1,000 lb/klb / 1,000,000 Btu/MMBtu
Blowdown Mass Flow Rate =	3.09	klb/hr	= Feedwater mass flow of 103.093 klb/hr * 0.03
Specific Enthalpy of Blowdown Water =	341.18	Btu/lbm	Enthalpy of saturated liquid for 368 F steam (assumed)
	1.06	MMBtu/hr	= 341.179 Btu/lbm x 3.093 klb/hr x 1,000 lb/klb / 1,000,000 Btu/MMBtu
	100.60	MMBtu/hr	Boiler Energy = Steam Energy Flow + Blowdown Energy Flow - Feedwater Energy Flow
Calculated Capacity =	**121.4**	**MMBtu/hr**	Capacity = Boiler Energy / efficiency losses
Maximum per Mfg. =	**121.7**	**MMBtu/hr**	Maximum Continuous Range
NG Heating Value	1,020	Btu/scf	AP-42 Section 1.4
Max Gas Firing Rate at AP-42 HHV	0.1193	MMscf/hr	121.7 MMBtu/hr / 1,020.0 MMBtu/MMscf = 0.1193 MMscf/hr
Max Gas Usage at Zero Fuel Oil and AP-42 HHV =	1,045	MMscf/yr	At hourly usage at rating and actual heating value, minus fuel oil hours
Adjusted Annual Gas Usage at Max Fuel Oil =	985	MMscf/yr	At hourly usage at rating and actual heating value, minus fuel oil hours

1.1.2 No. 2 Fuel Oil Combustion

Combustion Efficiency =	86.80%		Superior Boiler bid package dated 9/25/2025.
Blowdown Rate =	3%		Estimate
Saturated Steam Enthalpy =	1,196.7	Btu/lbm	at 368 F steam temperature
Steam Mass Flow Required =	100.0	klb/hr	Specification
	119.67	MMBtu/hr	= 1196.65 Btu/lbm x 100 klb/hr x 1,000 lb/klb / 1,000,000 Btu/MMBtu
Feedwater Mass Flow Rate =	103.09	klb/hr	= 100 klb/hr / (1 - 0.03)
Specific Enthalpy of Feedwater =	195.1	Btu/lbm	Enthalpy of saturated liquid at feedwater temperature of 227°F
	20.12	MMBtu/hr	= 195.121 Btu/lbm x 103.09 klb/hr x 1,000 lb/klb / 1,000,000 Btu/MMBtu
Blowdown Mass Flow Rate =	3.09	klb/hr	= Feedwater mass flow of 103.093 klb/hr * 0.03
Specific Enthalpy of Blowdown Water =	341.18	Btu/lbm	Enthalpy of saturated liquid for 368 F steam (assumed)
	1.06	MMBtu/hr	= 341.179 Btu/lbm x 3.093 klb/hr x 1,000 lb/klb / 1,000,000 Btu/MMBtu
	100.60	MMBtu/hr	Boiler Energy = Steam Energy + Blowdown Energy - Feedwater Energy
Calculated Capacity =	**115.9**	**MMBtu/hr**	Capacity = Boiler Energy / efficiency losses
Maximum per Mfg. =	**116.2**	**MMBtu/hr**	Maximum Continuous Range
Heating Value of No. 2 FO =	140,000	Btu/gal - FO	For estimating emissions with normalized conversion factor from gal to btu
Maximum =	0.830	Mgal/hr	For estimating emissions with normalized conversion factor from gal to btu
Assumed Maximum Hours of Operation on FO =	500	Hours on FO	Maximum allowed while remaining gas-fired boiler under Boiler NESHAP
Maximum for emissions =	415	Mgal/yr	For estimating emissions with normalized conversion factor from gal to btu

1.2 Derivation and Documentation of Emission Factors

1.2.1 Constants and Conversion Factors

Molar Volume (at STP)	385.5	scf/lbmol	= 528 °R / 1 atm x 0.7302 cf-atm/(lbmol-°R)
Atomic Weight of Sulfur	32.07	lb/lbmol	
Molecular Weight of NO2	46.01	lb NO_2/lbmol	
Molecular Weight of CO	28.01	lb CO/lbmol	
Molecular Weight of SO2	64.07	lb SO_2/lbmol	
Molecular Weight of H2SO4	98.079	lb H_2SO_4/lbmol	
F-Factor for natural gas combustion from 40 CFR	8,710	dscf/MMBtu	
F-Factor for oil combustion from 40 CFR 60,	9,190	dscf/MMBtu	
Concentration of Sulfur in Natural Gas	0.1	gr/Ccf	Conservative maximum based on 12/20/2024 analysis result = 0.012 gr/CCf
	0.5	gr/Ccf	AP-42 emission factor basis
Concentration of Sulfur in Fuel Oil	15.0	ppm	Only ULSD will be fired.
Estimated SO_2 to H_2SO_4 Conversion Rate	1.53	%	
F2 Factor for APH	0.50	%	

1.2.2 Prospective Vendor Data

Pollutant	CAS #	Concentration (ppmv @ 3% O_2)	Concentration (ppmv @ 0% O_2)	Emission Factor Basis
Natural Gas				
NOx	na	9	11	Mfg. guarantee with Ultra Low NOx Burners (ULNB); exhaust expressed at 3% oxygen concentration, corrected to 0% oxygen concentration by multiplying by 20.9% / (20.9% - 3%)
CO	00630-08-0	50	58	UK requirement at 3% oxygen concentration, corrected to 0% oxygen concentration by multiplying by 20.9% / (20.9% - 3%)
Standard No. 2 Fuel Oil				
NOx	na	90	105	Mfg. guarantee at 3% oxygen concentration, corrected to 0% oxygen concentration by multiplying by 20.9% / (20.9% - 3%)
CO	00630-08-0	120	140	Mfg. guarantee at 3% oxygen concentration, corrected to 0% oxygen concentration by multiplying by 20.9% / (20.9% - 3%)

1.2.3 Regulated NSR Pollutant Emission Factors for NG Combustion

Pollutant	CAS #	Emission Factor (lb/MMBtu)	Emission Factor (lb/MMscf)	Emission Factor Basis
NOx	10102-44-0	0.011	11.14	Vendor guarantee (9 ppmv @ 3% O2) *11 lbmol NO2/10^6 lbmol air x 46.01 lb NO2/lbmol / 385.5 scf/lbmol x 8,710 dscf/MMBtu x 1,020 MMBtu/MMscf =11.1 lb/MMscf*
CO	00630-08-0	0.037	37.68	Vendor guarantee (50 ppmv @ 3% O2) *58 lbmol NO2/10^6 lbmol air x 28.01 lb NO2/lbmol / 385.5 scf/lbmol x 8,710 dscf/MMBtu x 1,020 MMBtu/MMscf =37.7 lb/MMscf*
VOC	na	0.0054	5.5	AP-42 Section 1.4 Table 1.4-2 (7/98)
PM/PM10/PM2.5-Filt		0.0019	1.90	AP-42 Section 1.4 Table 1.4-2 (7/98)
PM-Condensable		0.0056	5.70	AP-42 Table 1.4-2
PM/PM10/PM2.5 Total		0.0075	7.60	AP-42 Table 1.4-2
SO2	07446-09-5	0.0003	0.29	0.10 gr/CCf / 7,000 gr/dscf x 64.07 lb SO2/lbmol / 32.07 lb S/lbmol x 10,000 CCf/MMscf
H2SO4	7664-93-9	2.14E-06	2.19E-03	1.53% conversion of SO2 to H2SO4 and 0.5 factor for air preheater *0.285 lb SO2/MMscf x 1.53% Conv to H2SO4 x 0.50 F2*
Lead		4.90E-07	5.00E-04	AP-42, Section 1.4, Table 1.4-2

1.2.4 GHG Emission Factors

Pollutant	GWP	Emission Factor (lb/MMBtu)	Emission Factor (lb/MMscf)	Emission Factor Basis
CO2	1	117.65	120,000	AP-42, Section 1.4, Table 1.4-2
CH4	28	0.0023	2.3	AP-42, Section 1.4, Table 1.4-2
N2O	265	0.0006	0.6	AP-42, Section 1.4, Table 1.4-2 (low-NOx burner)
CO2e		117.88	120,234	GWP from Subpart 98, Table A-1 (1/2025). Sum of individual pollutants x GWP.

1.2.5 Regulated NSR Pollutant Emission Factors for No. 2 Fuel Oil

Pollutant	CAS #	Emission Factor (lb/MMBtu)	Emission Factor (lb/Mgal)	Emission Factor Basis
PM		0.024	3.3	AP-42 Table 1.3-1
PM-CON = PM10-CON = PM25-CON		0.009	1.3	Calculated as a ratio of total particulate matter based off AP-42 Table 1.3-1 factors
PM-FIL		0.014	2.0	Calculated as a ratio of total particulate matter based off AP-42 Table 1.3-1 factors
PM10		0.024	3.3	PM=PM10
PM2.5		0.024	3.3	PM = PM2.5
VOC		0.002	0.34	AP-42 Table 1.3-3 (05/2010) (institutional boiler)
CO	00630-08-0	0.094	13.1	Vendor guarantee (120 ppmv @ 3% O2)
SO2	07446-09-5	0.002	0.213	AP-42 Table 1.3-1 (05/2010), sulfur content spec = 15 ppm
H2SO4	7664-93-9	1.16E-05	1.63E-03	AP-42 Table 1.3-1 (05/2010), sulfur content spec = 15 ppm
NO_X	10102-44-0	0.07	9.82	Vendor guarantee (90 ppmv @ 3% O2)
Lead		9.00E-06	1.26E-03	AP-42 Table 1.3-1 (05/2010)

1.2.6 GHG Emission Factors

Pollutant	GWP	Emission Factor (lb/MMBtu)	Emission Factor (lb/Mgal)	Emission Factor Basis
CO2	1	159.286	22,300	AP-42 Table 1.3-12
CH4	28	0.002	0.216	AP-42 Table 1.3-3 for institutional boilers
N2O	265	0.002	0.260	AP-42 Table 1.3-9
CO2e		159.82	22,375	GWP from Subpart 98, Table A-1 (1/2025). Sum of individual pollutants x GWP.

1.2.7 Hazardous Air Pollutant Emission Factors

> Natural gas emission factors for HAPs are obtained from AP-42, Chapter 1.4, Table 1.4-3 (organics) and 1.4-4 (metals). Emissions are only included for pollutants with emission factors greater than or equal to 1.0E-04 lb/MMscf.

> No. 2 Fuel Oil emission factors for HAPs are obtained from AP-42, Chapter 1.3, Table 1.3-9 (organics) and 1.3-10 (metals)

Pollutant	Emission Factor (lb/MMBtu)	Basis	Emission Factor (lb/Mgal)	Basis
Speciated Organic Compounds				
Benzene	0.0021	AP-42, Table 1.4-3	2.14E-04	AP-42, Table 1.3-9
Dichlorobenzene	0.0012	AP-42, Table 1.4-3	0.0000	AP-42, Table 1.3-9
Formaldehyde	0.0750	AP-42, Table 1.4-3	0.0610	AP-42, Table 1.3-9
Hexane	1.8000	AP-42, Table 1.4-3	0.0000	AP-42, Table 1.3-9
Naphthalene	0.0006	AP-42, Table 1.4-3	0.0011	AP-42, Table 1.3-9
Toluene	0.0034	AP-42, Table 1.4-3	0.0062	AP-42, Table 1.3-9
Metals				
Arsenic	0.0002	AP-42, Table 1.4-4	5.60E-04	AP-42, Table 1.3-10
Cadmium	0.0011	AP-42, Table 1.4-4	4.20E-04	AP-42, Table 1.3-10
Chromium	0.0014	AP-42, Table 1.4-4	4.20E-04	AP-42, Table 1.3-10
Manganese	0.0004	AP-42, Table 1.4-4	8.40E-04	AP-42, Table 1.3-10
Mercury	0.0003	AP-42, Table 1.4-4	4.20E-04	AP-42, Table 1.3-10
Nickel	0.0021	AP-42, Table 1.4-4	4.20E-04	AP-42, Table 1.3-10
Total HAP	1.888		0.079	

1.3 P3 Boiler #1 and #2 Potential Emissions Summary

1.3.1 Regulated NSR and Pollutant and GHG Potential Emissions

	NG Emission Factors		FO Emission Factors		Hourly Emissions		Annual Emissions	
					Natural Gas	FO	Unlimited	Max 500 hr FO
Pollutant	**(lb/MMscf)**	**Basis**	**(lb/Mgal)**	**Basis**	**(lb/hr)**	**(lb/hr)**	**(tpy)**	**(tpy)**
NO_X	11.14	Vendor guarantee	9.82	Vendor guarantee	1.329	8.15	35.71	7.53
CO	37.68	Vendor guarantee	13.10	Vendor guarantee	4.495	10.87	47.62	21.28
VOC	5.5	AP-42 Section 1.4 Table 1.4-2 (7/98)	0.34	AP-42 Table 1.3-3	0.656	0.28	2.87	2.87
PM	7.60	AP-42 Section 1.4 Table 1.4-2 (7/98)	3.30	AP-42 Table 1.3-1 and 1.3-2	0.907	2.74	12.00	4.43
PM10	7.60	AP-42 Section 1.4 Table 1.4-2 (7/98)	3.30	PM=PM10	0.907	2.74	12.00	4.43
PM2.5	7.60	AP-42 Section 1.4 Table 1.4-2 (7/98)	3.30	PM = PM2.5	0.907	2.74	12.00	4.43
SO2	0.29	Maximum based on 12/20/2024 analysis	0.21	AP-42 Table 1.3-1	0.034	0.18	0.77	0.18
H2SO4	2.19E-03	1.53% conversion of SO2 to H2S	1.63E-03	AP-42 Table 1.3-1	0.000	0.00	0.01	0.00
Lead	5.00E-04	AP-42, Section 1.4	1.26E-03	AP-42 Table 1.3-1	5.96E-05	1.05E-03	4.58E-03	5.08E-04
CO2	120.000	AP-42, Section 1.4	22.300	AP-42 Table 1.3-12	14.314	18.511	81.076	63.745
CH4	2.30	AP-42, Section 1.4	0.22	AP-42 Table 1.3-3	0.274	0.18	1.202	1.20
N2O	0.64	AP-42, Section 1.4	0.26	AP-42 Table 1.3-9	0.076	0.22	0.945	0.37
CO2e	120.234	GWP from Subpart 98	22.375	GWP from Subpart 98	14.342	18.573	81.349	63.876

1.3.2 Hazardous Air Pollutant Potential Emissions

	NG Emission Factors		FO Emission Factors		Hourly Emissions		Annual Emissions	
					Natural Gas	FO	Unlimited	Max 500 hr FO
Pollutant	**(lb/MMscf)**	**Basis**	**(lb/Mgal)**	**Basis**	**(lb/hr)**	**(lb/hr)**	**(tpy)**	**(tpy)**
Benzene	2.1E-03	AP-42, Table 1.4-3	2.1E-04	AP-42, Table 1.3-9	2.50E-04	1.78E-04	1.10E-03	1.10E-03
Dichlorobenze	1.2E-03	AP-42, Table 1.4-3	0.0E+00	AP-42, Table 1.3-9	1.43E-04	0.00E+00	6.27E-04	6.27E-04
Formaldehyde	7.5E-02	AP-42, Table 1.4-3	6.1E-02	AP-42, Table 1.3-9	8.95E-03	5.06E-02	2.22E-01	4.96E-02
Hexane	1.8E+00	AP-42, Table 1.4-3	0.0E+00	AP-42, Table 1.3-9	2.15E-01	0.00E+00	9.40E-01	9.40E-01
Naphthalene	6.1E-04	AP-42, Table 1.4-3	1.1E-03	AP-42, Table 1.3-9	7.28E-05	9.38E-04	4.11E-03	5.35E-04
Toluene	3.4E-03	AP-42, Table 1.4-3	6.2E-03	AP-42, Table 1.3-9	4.06E-04	5.15E-03	2.25E-02	2.96E-03
Arsenic	2.0E-04	AP-42, Table 1.4-4	5.6E-04	AP-42, Table 1.3-10	2.39E-05	4.65E-04	2.04E-03	2.15E-04
Cadmium	1.1E-03	AP-42, Table 1.4-4	4.2E-04	AP-42, Table 1.3-10	1.31E-04	3.49E-04	1.53E-03	6.29E-04
Chromium	1.4E-03	AP-42, Table 1.4-4	4.2E-04	AP-42, Table 1.3-10	1.67E-04	3.49E-04	1.53E-03	7.77E-04
Manganese	3.8E-04	AP-42, Table 1.4-4	8.4E-04	AP-42, Table 1.3-10	4.53E-05	6.97E-04	3.05E-03	3.62E-04
Mercury	2.6E-04	AP-42, Table 1.4-4	4.2E-04	AP-42, Table 1.3-10	3.10E-05	3.49E-04	1.53E-03	2.15E-04
Nickel	2.1E-03	AP-42, Table 1.4-4	4.2E-04	AP-42, Table 1.3-10	2.50E-04	3.49E-04	1.53E-03	1.12E-03
Sum	1.888		0.079		0.225	0.95	0.225	0.986

2. Emissions Associated with EU106-EU111 Med Center Generators (Diesel)

2.1 Generator Power and Fuel Consumption Data

Total Engine Rating (hp):	4,023	hp	
Total Engine Rating (kW):	3,000	kW	
Brake Specific Fuel Consumption rate in Btu/Bhp-hr:	7,000	Btu/hp-hr	
Diesel Heating Value in Btu/gal:	137,000	Btu/gal	
Calculated Fuel Input in MMBtu/hr:	28.161	MMBtu/hr	27.9891
Maximum Annual Operating Hours:	124	hrs	
Fuel Consumption in Mgal/hr:	0.204	Mgal/hr	

2.2 Source Classification Code

> Emissions are tied to the SCC code for diesel generators listed below.

SCC:	20300101
SCC Description:	Internal Combustion Engines, Commercial/Institutional (2-03), Distillate Oil (Diesel) (2-03-001), Reciprocating (2-03-0
SCC Units:	1000 Gallons Distillate Oil (Diesel)

2.3 Emission Calculation Methodology and Emission Factors

> Emission factors for NOX, CO, VOC, PM, PM10, and PM2.5 are based on CAT HPD 3516E Diesel Generator Set Emissions (potential site variation) - Full Load. SO2 emissions are based on emission factors in AP-42 Table 3.4-1 for Large Stationary Diesel And All Stationary Dual-fuel Engines (10/96 edition) and manufacturer specifications.

2.3.1 NOx

Emission factor for NOx:	6.76	g/hp-hr	Manufacturer Specifications
Emission factor for NOx:	59.96	lb/hr	= (6.76 g/hp-hr / 453.6 g/lb *4023.06 hp)
NO_X emission factor in terms of SCC units:	293.47	lb/Mgal	= (59.957 lb/hr / 0.204 Mgal/hr)

2.3.2 CO

Emission factor for CO:	1.20	g/hp-hr	Manufacturer Specifications
Emission factor for CO:	10.64	lb/hr	= (1.2 g/hp-hr / 453.6 g/lb *4023.06 hp)
CO emission factor in terms of SCC units:	52.10	lb/Mgal	= (10.643 lb/hr / 0.204 Mgal/hr)

2.3.3 VOC

Emission factor for VOC:	0.06	g/hp-hr	Manufacturer Specifications
	0.53	lb/hr	= (0.06 g/hp-hr / 453.6 g/lb *4023.06 hp)
VOC emission factor in terms of SCC units:	2.60	lb/Mgal	= (0.532 lb/hr / 0.204 Mgal/hr)

2.0.1 PM

Emission factor for PM:	0.06	g/hp-hr	Manufacturer Specifications
Emission factor for PM:	0.53	lb/hr	= (0.06 g/hp-hr / 453.6 g/lb *4023.06 hp)
PM emission factor in terms of SCC units:	2.60	lb/Mgal	= (0.532 lb/hr / 0.204 Mgal/hr)

2.0.2 PM10

Emission factor for PM10:	0.06	g/hp-hr	Manufacturer Specifications
Emission factor for PM:	0.53	lb/hr	= (0.06 g/hp-hr / 453.6 g/lb *4023.06 hp)
PM10 emission factor in terms of SCC units:	2.60	lb/Mgal	= (0.532 lb/hr / 0.204 Mgal/hr)

2.0.3 PM2.5

Emission factor for PM2.5:	0.06	g/hp-hr	Manufacturer Specifications
Emission factor for PM:	0.53	lb/hr	= (0.06 g/hp-hr / 453.6 g/lb *4023.06 hp)
PM2.5 emission factor in terms of SCC units:	2.60	lb/Mgal	= (0.532 lb/hr / 0.204 Mgal/hr)

2.0.4 SO2

Emission factor for SO2:	1.52E-03	lb/MMBtu	AP-42 Table 3.4-1, 10/96 (0.0015% sulfur content)
SO2 emission factor in terms of SCC units:	0.21	lb/Mgal	= (0.00152 lb/MMBtu * 28 MMBtu/hr / 0.204 Mgal/hr)

2. Emissions Associated with EU106-EU111 Med Center Generators (Diesel)

2.0.5 HAP Emission Estimates

> Emission factors for organic HAP compounds expected to be emitted are based on emission factors in AP-42 Table 3.4-3 (10/96 Edition).

	CAS #	HAP?	Emission Factor (lb/MMBtu)	Emission Factor (lb/Mgal)	Emission Factor Basis
Acetaldehyde	75-07-0	Y	2.52E-05	0.003	AP-42 Table 3.4-3, 10/96
Acrolein	107-02-8	Y	7.88E-06	0.001	AP-42 Table 3.4-3, 10/96
Benzene	71-43-2	Y	7.76E-04	0.107	AP-42 Table 3.4-3, 10/96
Formaldehyde	50-00-0	Y	7.89E-05	0.011	AP-42 Table 3.4-3, 10/96
Toluene	108-88-3	Y	2.81E-04	0.039	AP-42 Table 3.4-3, 10/96
Xylene	1330-20-7	Y	1.93E-04	0.027	AP-42 Table 3.4-3, 10/96
Total HAPs				1.88E-01	

2.0.6 GHG Emission Factors

> CO2, CH4 and N2O emissions for diesel combustion are estimated using the diesel emission factors published in 40 CFR 98, Subpart C, Table C-2, and AP-42 Table 3.4-1 and the global warming potentials from 40 CFR 98, Subpart A, Table A-1.

Global Warming Potentials of GHGs per 40 CFR 98 Subpart A, Table A-1.

CO2	1
CH4	28
N2O	265

CH4 Emission Factor	3.0E-03	kg CH4/MMBtu	40 CFR 98, Subpart C, Table C-2; Petroleum (All fuel types in Table C-1)
N2O Emission Factor	6.0E-04	kg N2O/MMBtu	40 CFR 98, Subpart C, Table C-2; Petroleum (All fuel types in Table C-1)

Pollutant	Emission Factor (kg/MMBtu)	Factor (lb/MMBtu)	Equivalent Factor (lb/Mgal)	Emission Factor Basis
CO2		165.00	22,744	AP-42 Table 3.4-1, 10/96
CH4	3.00E-03		0.91	40 CFR 98, Subpart C, Table C-2
N2O	6.00E-04		0.18	40 CFR 98, Subpart C, Table C-2
CO2e			22,818	40 CFR 98, Subpart A

2.1 Summary of Generator Potential Emissions

Pollutant	Emission Factor (lb/Mgal)	Basis	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
NOx	**293.5**	Manufacturer Specifications	59.96	3.72
CO	**52.1**	Manufacturer Specifications	10.64	0.66
VOC	**2.60**	Manufacturer Specifications	0.53	0.03
PM	**2.60**	Manufacturer Specifications	0.53	0.03
PM10	**2.60**	Manufacturer Specifications	0.53	0.03
PM2.5	**2.60**	Manufacturer Specifications	0.53	0.03
SO2	**0.21**	AP-42 Table 3.4-1, 10/96	0.043	0.003
Total HAPs	**0.19**	AP-42 Table 3.4-3, 10/96	0.038	0.002
Formaldehyde	**0.01**	AP-42 Table 3.4-3, 10/96	0.0022	0.0001
CO2	**22,744**	AP-42 Table 3.4-1, 10/96	4,647	288
CH4	**0.91**	40 CFR 98, Subpart C, Table C-2	0.186	0.012
N2O	**0.18**	40 CFR 98, Subpart C, Table C-2	0.037	0.002
CO2e	**22,818**	40 CFR 98, Subpart A	4,662	289

3. EU112 Heating Plant Diesel-Fired Emergency Generator

3.1 Generator Power and Fuel Consumption Data

KyEIS Equipment, Source ID:	**EQPTTBD, EU112**	
Total Engine Rating (hp):	1,676	hp
Total Engine Rating (kW):	1,250	kW
Brake Specific Fuel Consumption rate in Btu/Bhp-hr:	7,000	Btu/hp-hr
Diesel Heating Value in Btu/gal:	137,000	Btu/gal
Calculated Fuel Input in MMBtu/hr:	11.73	MMBtu/hr
Maximum Annual Operating Hours:	124	hrs
Fuel Consumption in Mgal/hr:	0.08740	Mgal/hr

3.2 Source Classification Code

> Emissions are tied to the SCC code for diesel generators listed below.

SCC:	20300101
SCC Description	Internal Combustion Engines, Commercial/Institutional (2-03), Distillate Oil (Diesel) (2-03-001), Reciprocating (2-03-001-01)
SCC Units	1000 Gallons Distillate Oil (Diesel) Burned
SCC Units Ab:	1000 Gallons

3.3 Emission Calculation Methodology and Emission Factors

> Emission factors for NOX, CO, VOC, PM, PM10, and PM2.5 are based on CAT C32 Diesel Generator Set Emissions (potential site variation) - Full Load. SO2 emissions are based on emission factors in AP-42 Table 3.4-1 for Large Stationary Diesel And All Stationary Dual-fuel Engines (10/96 edition) and manufacturer specifications.

3.3.1 NOx

Emission factor for NOx:	6.20	g/hp-hr	Manufacturer Specifications
Emission factor for NOx:	22.91	lb/hr	= (6.2 g/hp-hr / 453.6 g/lb *1676.275 hp)
NO_X emission factor in terms of SCC units:	262.16	lb/Mgal	

3.3.2 CO

Emission factor for CO:	0.21	g/hp-hr	Manufacturer Specifications
Emission factor for CO:	0.78	lb/hr	= (0.21 g/hp-hr / 453.6 g/lb *1676.275 hp)
CO emission factor in terms of SCC units:	8.88	lb/Mgal	

3.3.3 VOC

Emission factor for VOC:	0.10	g/hp-hr	Manufacturers Specifications (TOC)
Emission factor for VOC:	0.37	lb/hr	= (0.1 g/hp-hr / 453.6 g/lb *1676.275 hp)
VOC emission factor in terms of SCC units:	4.23	lb/Mgal	

3.3.4 PM

Emission factor for PM:	0.02	g/hp-hr	Manufacturer Specifications
Emission factor for PM:	0.07	lb/hr	= (0.02 g/hp-hr / 453.6 g/lb *1676.275 hp)
PM emission factor in terms of SCC units:	0.85	lb/Mgal	

3.3.5 PM10

Emission factor for PM10:	0.02	g/hp-hr	Manufacturer Specifications
Emission factor for PM:	0.07	lb/hr	= (0.02 g/hp-hr / 453.6 g/lb *1676.275 hp)
PM10 emission factor in terms of SCC units:	0.85	lb/Mgal	

3.3.6 PM2.5

Emission factor for PM2.5:	0.02	g/hp-hr	Manufacturer Specifications
Emission factor for PM:	0.07	lb/hr	= (0.02 g/hp-hr / 453.6 g/lb *1676.275 hp)
PM2.5 emission factor in terms of SCC units:	0.85	lb/Mgal	

3.3.7 SO2

Emission factor for SO2:	1.52E-03	lb/MMBtu	AP-42 Table 3.4-1, 10/96 (0.0015% sulfur content)
SO2 emission factor in terms of SCC units:	0.20	lb/Mgal	= (0.00152 lb/MMBtu * 12 MMBtu/hr / 0.087 Mgal/hr)

3. EU112 Heating Plant Diesel-Fired Emergency Generator

3.3.8 HAP Emission Estimates

> Emission factors for organic HAP compounds expected to be emitted are based on emission factors in AP-42 Table 3.4-3 (10/96 Edition).

	CAS #	HAP?	Emission Factor (lb/MMBtu)	Emission Factor (lb/Mgal)	Emission Factor Basis
Acetaldehyde	75-07-0	Y	2.52E-05	0.0034	AP-42 Table 3.4-3
Acrolein	107-02-8	Y	7.88E-06	0.001	AP-42 Table 3.4-3
Benzene	71-43-2	Y	7.76E-04	0.104	AP-42 Table 3.4-3
Formaldehyde	50-00-0	Y	7.89E-05	0.011	AP-42 Table 3.4-3
Toluene	108-88-3	Y	2.81E-04	0.038	AP-42 Table 3.4-3
Xylene	1330-20-7	Y	1.93E-04	0.026	AP-42 Table 3.4-3
Total HAPs				1.83E-01	

3.3.9 GHG Emission Factors

> CO2, CH4 and N2O emissions for diesel combustion are estimated using the diesel emission factors published in 40 CFR 98, Subpart C, Table C-2, and AP-42 Table 3.4-1 and the global warming potentials from 40 CFR 98, Subpart A, Table A-1.

Global Warming Potentials of GHGs per 40 CFR 98 Subpart A, Table A-1.

CO2	1
CH4	28
N2O	265

CH4 Emission Factor	3.0E-03	kg CH4/MMBtu	40 CFR 98, Subpart C, Table C-2; Petroleum (All fuel types in Table C-1)
N2O Emission Factor	6.0E-04	kg N2O/MMBtu	40 CFR 98, Subpart C, Table C-2; Petroleum (All fuel types in Table C-1)

Pollutant	Emission Factor (kg/MMBtu)	Factor (lb/MMBtu)	Equivalent Factor (lb/Mgal)	Emission Factor Basis
CO2		165.00	22,152	AP-42 Table 3.4-1, 10/96
CH4	3.00E-03		0.89	40 CFR 98, Subpart C, Table C-2
N2O	6.00E-04		0.18	40 CFR 98, Subpart C, Table C-2
CO2e			22,224	40 CFR 98, Subpart A

3.4 Summary of Generator Potential Emissions

Pollutant	Emission Factor (lb/Mgal)	Basis	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
NOx	**262.2**	Manufacturer Specifications	22.91	1.42
CO	**8.9**	Manufacturer Specifications	0.78	0.05
VOC	**4.23**	Manufacturers Specifications (TOC)	0.37	0.02
PM	**0.85**	Manufacturer Specifications	0.07	0.0046
PM10	**0.85**	Manufacturer Specifications	0.07	0.00
PM2.5	**0.85**	Manufacturer Specifications	0.07	0.00
SO2	**0.20**	AP-42 Table 3.4-1, 10/96	0.018	0.001
Total HAPs	**0.18**	AP-42 Table 3.4-3	0.016	0.001
Formaldehyde	**0.01**	AP-42 Table 3.4-3	0.0009	5.74E-05
CO2	**22,152**	AP-42 Table 3.4-1, 10/96	1,936	120
CH4	**0.89**	40 CFR 98, Subpart C, Table C-2	0.078	0.005
N2O	**0.18**	40 CFR 98, Subpart C, Table C-2	0.016	0.001
CO2e	**22,224**	40 CFR 98, Subpart A	1,942	120

4. IA 01 Fuel Oil Storage Tanks

4.1 Storage Tank Capacities and Throughput Rates

> The maximum hourly and annual throughput rates for the new P3 diesel storage tanks are provided below. The P3 diesel storage tanks are supplemental to the existing diesel storage tanks currently permitted under IA 01.

> Each tank is 10'7" diameter and 51'7" in height, vertical fixed roof tank.

Emission Unit	Permit EU ID	Permit Emission Unit Description	Tank Contents	Storage Capacity	Maximum Hourly Throughput	Maximum Annual Throughput
--	--	--	--	Mgal-Cap	Mgal/hr	Mgal/yr
P3 Fuel Oil Tanks #1 - #5 (30,000 gallons)	IA #1	Fuel Oil Storage Tanks (each tank)	ULSD	30.00	1.250	10,950.0

* Throughput for all tanks is based on a highly conservative estimate of 1 turnover per day. In reality the fuel oil tanks will serve the P3 emergency generators and provide backup fuel only to the P3 Boilers, both of which are permitted for a limited number hours equating to .

4.2 VOC and HAP Potential Emissions Calculations for Condensate Storage Tanks

> The following tables document the potential VOC emissions resulting from the five 30,000-gal tanks to be installed for P3 at UK. The VOC emission factors for the storage tank documented in the following tables are based on EPA Tanks 5.1 runs using the worst case annual throughput based on unlimited tank turnovers of 1 per day. The liquid composition within the tank is assumed to be No. 2 Fuel Oil (diesel fuel) and as such, AP-42 Petroleum Liquid properties in AP-42 Table 7.1-2 were used.

4.2.1 Working Loss VOC and HAP Emissions Calculations

> Working loss emissions for the gasoline storage tanks are calculated below.

Emission Unit	Permit Emission Unit Description	Hourly Operating Rate	Pollutant	Emission Factor	Hourly Potential	Annual Potential
--	--	Mgal/hr	--	lb/Mgal	lb/hr	tpy
P3 Fuel Oil Tanks #1 - #5 (30,000 gallons)	Fuel Oil Storage Tanks (each tank)	1.25	VOC	4.74E-03	5.92E-03	2.59E-02

4.2.2 Breathing Loss VOC Emissions Calculations

> Breathing loss emissions for the gasoline storage tanks are calculated below.

Emission Unit	Permit Emission Unit Description	Hourly Operating Rate	Pollutant	Emission Factor	Hourly Potential Emissions	Annual Potential Emissions
--	--	Mgal-cap/hr	--	lb/Mgal-cap	lb/hr	tpy
P3 Fuel Oil Tanks #1 - #5 (30,000 gallons)	Fuel Oil Storage Tanks (each tank)	3.42E-03	VOC	0.14	4.75E-04	2.08E-03

4.2.3 Total VOC Emissions for ULSD Storage Tanks P3 Tanks #1-5

> Total emissions for the ULSD storage tanks are calculated below. The total emissions are caculated by mutiplying the potential emissions for each identical tank by the number of tanks to be

Emission Unit	Permit Emission Unit Description	Pollutant	Hourly Potential Emissions	Annual Potential Emissions (each tank)	Annual Potential Emissions (total)
--	--	--	lb/hr	tpy	tpy
P3 Fuel Oil Tanks #1 - #5 (30,000 gallons)	Fuel Oil Storage Tanks (each tank)	VOC	6.39E-03	2.80E-02	0.14

SUPERIOR BOILER

BUILT TO OUTPERFORM

February 20th, 2026

Mark Fitzenberger
The YMI Group, Inc.
2483 Greenleaf Avenue
Elk Grove Village, IL 60007

Re: University of Kentucky P3 Utility

The Superior Boiler equipment quoted in proposal 4101118 R7 for the University of Kentucky P3 Utility project is designed for an operating pressure of 150psig. With the conditions stated in proposal 4101118 R7 the Zeeco FREE JET burner can be guaranteed with CO emissions of 120 ppm, 3% O2, dry, while firing #2 Oil.

Patrick Mazur
Technical Sales Account Representative-Watertube Boiler Division
pmazur@superiorboiler.com
714 N. Corey Rd. - Hutchinson, KS 67501
Phone: 800.444.6693 Ext. 1308 | Mobile 620.960.3427

SUPERIOR BOILER

Title V Boiler & Generator Information

Project: ***University of Kentucky CUP 5***
172 Hospital Drive
Lexington, Kentucky 40508

The project is a P3 for the University of Kentucky with Walsh Investors and Plenary Americas as the financiers, Walsh-Turner Joint Venture as the Design-Builder, KFI Engineers as the Engineer/Architect of Record, and NORESCO as the plant manager for a 30-year lease. The central utility plant scope includes a 96,000 SF, 2-story building with chillers, boilers, generators, electrical gear, pumps, and all necessary MEFPP scope to service the new University of Kentucky Healthcare Cancer and Advanced Ambulatory Center and the Chandler Expansion.

To expedite the Title V Permit submission, please see below information for the boilers and chillers.

Boilers: Superior D-Type 100,000 lb/hr 300 Psig Saturated Steam Boiler

Two total.

Rated input capacity (MMBtu/hr) – 121 MMbtu/hr

Rated output capacity (lbs steam/hr) – 100,000 lb/hr

Manufacturer's emission guarantees – see below

Fuel Designation	NAT GAS
NOx, ppm, 3% O2, dry	9
CO, ppm, 3% O2, dry	50
VOC, lb/MMBtu	0.004
PARTICULATE lb/MMBtu	0.0075

Generators: Cat 3561E High Power Density Diesel 3 MW Generator

Six Total.

Maximum engine power (60 Hz ekW (kVA):

3000 (3750) Standby, 3000 (3750) Mission Critical, 2725 (3406) Prime

Maximum fuel consumption (Mgal/hp):

100% load w/ fan – L/hr (gal/hr)	773.2 (204.3) Standby, 773.2 (204.3) Mission Critical, 711.2 (187.9) Prime
75% load w/ fan – L/hr (gal/hr)	624.2 (164.9) Standby, 624.2 (164.9) Mission Critical, 581.6 (153.7) Prime
50% load w/ fan – L/hr (gal/hr)	467.5 (123.5) Standby, 467.5 (123.5) Mission Critical, 438.1 (115.7) Prime
25% load w/ fan – L/hr (gal/hr)	246.2 (65.1) Standby, 246.4 (65.1) Mission Critical, 229.2 (60.6) Prime

Guarantee Engines are Tier II or above EPA certified – Confirmed Tier 2

Manufacturer's specified emissions:

Nominal – Full Load

Nox mg/Nm3 (g/hp-h)	2610.4 (5.63) Standby, 2610.4 (5.63) Mission Critical, 2311.6 (5.02) Prime
CO mg/Nm3 (g/hp-h)	305.9 (0.66) Standby, 305.9 (0.66) Mission Critical, 404.8 (0.89) Prime
HC mg/Nm3 (g/hp-h)	17.4 (0.04) Standby, 17.4 (0.04) Mission Critical, 15.0 (0.04) Prime
PM mg/Nm3 (g/hp-h)	17.6 (0.05) Standby, 17.6 (0.05) Mission Critical, 22.6 (0.06) Prime

Title V Boiler & Generator Information

Potential Site Variation – Full Load

Nox mg/Nm3 (g/hp-h)	3132.5 (6.76) Standby, 3132.5 (6.76) Mission Critical, 2773.9 (6.02) Prime
CO mg/Nm3 (g/hp-h)	550.6 (1.20) Standby, 550.6 (1.20) Mission Critical, 728.7 (1.60) Prime
HC mg/Nm3 (g/hp-h)	23.1 (0.06) Standby, 23.1 (0.06) Mission Critical, 19.9 (0.05) Prime
PM mg/Nm3 (g/hp-h)	24.6 (0.06) Standby, 24.6 (0.06) Mission Critical, 31.6 (0.08) Prime

Total displacement L (in3): 78.1 (4766)

Number of cylinders: 16

Generators: Cat C32 Diesel 1250 kW Generator

One Total.

Maximum engine power (60 Hz ekW (kVA):

1250 (1562.5) Standby, 1250 (1562.5) Mission Critical, 1136 (1420.0) Prime

Maximum fuel consumption (Mgal/hp):

100% load w/ fan – L/hr (gal/hr)	330.9 (87.4) Standby, 330.9 (87.4) Mission Critical, 306.6 (81.0) Prime
75% load w/ fan – L/hr (gal/hr)	268.9 (71.0) Standby, 269.1 (71.1) Mission Critical, 241.1 (63.8) Prime
50% load w/ fan – L/hr (gal/hr)	181.1 (47.8) Standby, 181.3 (47.9) Mission Critical, 167.5 (44.3) Prime
25% load w/ fan – L/hr (gal/hr)	102.1 (27.0) Standby, 102.3 (27.0) Mission Critical, 94.7 (25.0) Prime

Guarantee Engines are Tier II or above EPA certified – Confirmed Tier 2

Manufacturer's specified emissions:

Nominal – Full Load

Nox mg/Nm3 (g/hp-h)	2416.9 (5.13) Standby, 2416.9 (5.13) Mission Critical, 2127.0 (4.58) Prime
CO mg/Nm3 (g/hp-h)	53.0 (0.11) Standby, 53.0 (0.11) Mission Critical, 40.4 (0.09) Prime
HC mg/Nm3 (g/hp-h)	21.6 (0.05) Standby, 21.6 (0.05) Mission Critical, 22.2 (0.06) Prime
PM mg/Nm3 (g/hp-h)	5.1 (0.01) Standby, 5.1 (0.01) Mission Critical, 6.8 (0.02) Prime

Potential Site Variation – Full Load

Nox mg/Nm3 (g/hp-h)	2924.5 (6.20) Standby, 2924.5 (6.20) Mission Critical, 2573.7 (5.54) Prime
CO mg/Nm3 (g/hp-h)	99.1 (0.21) Standby, 99.1 (0.21) Mission Critical, 75.5 (0.16) Prime
HC mg/Nm3 (g/hp-h)	40.8 (0.10) Standby, 40.8 (0.10) Mission Critical, 42.0 (0.10) Prime
PM mg/Nm3 (g/hp-h)	10.0 (0.02) Standby, 10.0 (0.02) Mission Critical, 13.2 (0.03) Prime

Total displacement L (in3): 32.1 (1959)

Number of cylinders: 12

SUPERIOR BOILER

BUILT TO OUTPERFORM



DS TYPE

Lathrop Trotter

Project Proposal: University of Kentucky
Proposal Number: 4101118 R3
Date: September 29, 2025

3524 E. 4th Ave., Hutchinson, KS 67501 620-662-6693 sales@superiorboiler.com SuperiorBoiler.com

1. Executive Summary

September 25, 2025

University of Kentucky
P3 Project Utility Plant

Attn: Ben Rolfes

Proposal #: 4101118 R3-Adjust to (2) boilers as base pricing

Ref: (2) 100,000 lb/hr 300Psig Saturated Steam Boiler
University of Kentucky

Thank you for providing Superior Boiler the opportunity to submit our proposal for the above referenced Watertube package boiler.

Superior Boiler custom engineers all package boilers, HRSG's and HTHW Generators on a project-by-project basis to a set of standardized design specifications; with modifications required by the customer specifications and/or requirements for the respective site. This provides a boiler ideally suited for the unique requirements of each project. All Superior Boilers are manufactured in accordance with the ASME Code; are ISO 9000 and CSA compliant; and comply with all state, jurisdiction, and/or province requirements for Industrial Power Boilers.
Superior Boiler proposes to furnish Two (2) new "Ds" type Watertube package boiler; including all auxiliary equipment as described in this proposal.
Should you have any questions, please do not hesitate to contact Superior Boiler, LLC.

Regards,

Patrick Mazur
Technical Sales Account Representative-Watertube Boiler Division
pmazur@superiorboiler.com
714 N. Corey Rd. - Hutchinson, KS 67501
Phone: 800.444.6693 Ext. 1308 | Mobile 620.960.3427

2. Boiler Specifications & Design

A. Preliminary Design		
Boiler gross capacity at MCR	100,000	lb/hr
Blowdown Rate at MCR	3,000	lb/hr
Boiler Net Capacity at MCR	100,000	lb/hr
Fuel	NG/#2	
Maximum heat input	121	MM btu/hr
Maximum allowable working pressure	300	psig
Boiler operating pressure at steam drum	150	psig
Feed water temperature (DA to economizer)	228	^{o}F
Ambient air temperature	70	^{o}F
Relative humidity	65	%
Elevation (FASL)	<1000	ft
Blowdown rate	3	%
Installation type	TBD	
Electrical supply power available	460V/3Ph/60Hz	
Control supply power available	120V	

B. Preliminary Boiler Specifications		
Boiler type	Ds	
Combustion chamber configuration	Square	
Flue gas discharge location	Top	
Boiler overall height	14’- 9”	ft-in
Boiler overall width	12’- 4”	ft-in
Boiler length over casing (less burner)	26’- 7”	ft-in
Boiler length including burner (assumed)	33’- 7”	ft-in
Estimated shipping weight	113,000	lbs
Estimated weight Flooded	159,000	lbs
Steam outlet line size at saturated steam drum	10”	in
Boiler feed water inlet line size	3”	in
Steam drum diameter (I.D.) and thickness	48” x 1”	in
Steam drum material of construction	SA-516-Gr.70	
Lower drum diameter (I.D.) and thickness	30” x 0.75”	in
Lower drum material of construction	SA-516-Gr.70	
Convection bank tube diameter and thickness	2.0 x 0.135	in
Membrane tube diameter and thickness	2.0 x 0.135	in
Boiler tube material	SA-178-Gr.A	
Furnace width	8’- 4”	ft-in
Furnace height	6’- 11”	ft-in
Furnace length	23’- 10”	ft-in

C. Preliminary Economizer Specifications		
Design type	Counter Flow	
Water flow direction	Vertical Down	
Flue gas flow direction	Vertical Up	
Maximum design pressure	490	psig
Design temperature	700	^{o}F
Tube material specification	SA-178 Gr. A	

D. 9 PPM Predicted Performance with Natural Gas					
	100%	75%	50%	25%	
FLOW RATES					
Steam	100000	75000	50000	25000	lb/hr
Continuous blow down	2000	1500	1000	500	lb/hr
Feed water	102000	76500	51000	25500	lb/hr
Fuel	5566	4136	2743	1367	lb/hr
Combustion air	104615	77730	52650	26773	lb/hr
Flue gas	110182	81866	55393	28140	lb/hr
Flue gas recirculation	22036	16373	11079	5628	lb/hr
Flue gas leaving furnace	132218	98239	66472	33768	lb/hr
PRESSURE					
Steam @ NRV	150	150	150	150	psig
Drum Operating pressure	155	155	155	155	psig
Boiler Design pressure	300	300	300	300	psig
TEMPERATURE					
Steam Temp. @ NRV	368	368	368	368	°F
Feed water entering economizer	70	70	70	70	°F
Feed water leaving economizer	228	228	228	228	°F
Flue Gas temp leaving boiler	312	299	287	277	°F
Flue Gas temp leaving economizer	553	486	430	383	°F
DRAFT LOSSES					
Silencer	-	-	-	-	in. wc
Combustion air duct	-	-	-	-	in. wc
Burner	-	-	-	-	in. wc
Furnace & Boiler	7.01	3.80	1.69	0.42	in. wc
Economizer	0.95	0.54	0.27	0.08	in. wc
Flue gas duct & stack	-	-	-	-	in. wc
Total draft loss	7.96	4.34	1.96	0.50	in. wc
BOILER EFFICIENCY					
Dry gas loss	5.20	4.55	4.20	3.92	%
Fuel moisture loss	10.69	10.57	10.48	10.42	%
Air moisture loss	0.11	0.09	0.09	0.08	%
Radiation loss	0.60	0.67	0.80	1.07	%
Unburned loss	0.00	0.00	0.00	0.00	%
Manufacturer's margin	0.50	0.50	0.50	0.50	%
Total heat loss	17.10	16.38	16.06	15.99	%
Boiler efficiency	82.90	83.62	83.94	84.01	%
HEAT INPUT & RELEASE RATES					
Boiler Heat input	121.67	90.40	59.96	29.87	MM Btu/hr
Volumetric Heat release rate	82100	61001	40461	20157	Btu/ ft^3 hr
Furnace Heat release rate	144675	107495	71300	35520	Btu/ ft^2 hr

D. 90 PPM Predicted Performance with #2 Oil					
	100%	75%	50%	25%	
FLOW RATES					
Steam	100000	75000	50000	25000	lb/hr
Continuous blow down	2000	1500	1000	500	lb/hr
Feed water	102000	76500	51000	25500	lb/hr
Fuel	5998	4459	2955	1472	lb/hr
Combustion air	104019	77325	52337	26602	lb/hr
Flue gas	110017	81783	55292	28073	lb/hr
Flue gas recirculation	22003	16357	11058	5615	lb/hr
Flue gas leaving furnace	132021	98140	66350	33688	lb/hr
PRESSURE					
Steam @ NRV	150	150	150	150	psig
Drum Operating pressure	155	155	155	155	psig
Boiler Design pressure	300	300	300	300	psig
TEMPERATURE					
Steam Temp. @ NRV	368	368	368	368	°F
Feed water entering economizer	228	228	228	228	°F
Feed water leaving economizer	316	300	287	277	°F
Flue Gas temp leaving boiler	571	498	434	384	°F
Flue Gas temp leaving economizer	308	279	256	238	°F
DRAFT LOSSES					
Silencer	-	-	-	-	in. wc
Combustion air duct	-	-	-	-	in. wc
Burner	-	-	-	-	in. wc
Furnace & Boiler	7.51	4.03	1.78	0.43	in. wc
Economizer	0.90	0.51	0.25	0.08	in. wc
Flue gas duct & stack	-	-	-	-	in. wc
Total draft loss	8.41	4.54	2.03	0.51	in. wc
BOILER EFFICIENCY					
Dry gas loss	5.54	4.85	4.39	4.05	%
Fuel moisture loss	6.46	6.38	6.32	6.28	%
Air moisture loss	0.11	0.09	0.08	0.08	%
Radiation loss	0.60	0.67	0.80	1.07	%
Unburned loss	0.00	0.00	0.00	0.00	%
Manufacturer's margin	0.50	0.50	0.50	0.50	%
Total heat loss	13.20	12.50	12.10	11.98	%
Boiler efficiency	86.80	87.50	87.90	88.02	%
HEAT INPUT & RELEASE RATES					
Boiler Heat input	116.21	86.39	57.26	28.51	MM Btu/hr
Volumetric Heat release rate	78416	58292	38636	19239	Btu/ ft^3 hr
Furnace Heat release rate	138183	102721	68084	33902	Btu/ ft^2 hr

3. Scope of Supply

AUXILIARY EQUIPMENT				
Included		Burner and Controls	Ship Loose	
YES	NO		YES	NO
X		Dual Fuel Burner		
	X	Single Fuel Burner		X
X		Windbox		X
X		FD Fan and Inlet Air Assembly		X
	X	Burner Management System (Microprocessor)		
X		Burner Management System (PLC)	X	
X		Combustion Control System (PLC)	X	
	X	Integrated BMS/CCS		
	X	Boiler Feedwater Level Controller		
	X	Deaerator Controller		
X		Boil Out Gauge Glass-Chemicals by others	X	
Balance of Plant Equipment				
	X	Feedwater Deaerator		
	X	Condensate Return Tank		
	X	Makeup water (To Deaerator) Pumps		
	X	Condensate Pumps (Condensate tank to DA)		
	X	Boiler Feed Water (DA to Boiler) Pumps		
	X	Blowdown Separator		
	X	Blowdown Tank		
	X	Blowdown Heat Recovery Economizer		
	X	Water Softener System		
	X	Chemical Feed System		
	X	Water Sampling Station		
	X	Steam Sampling Station		

STANDARD BOILER TRIM					
Included		QTY.	DESCRIPTION	Ship Loose	
YES	NO			YES	NO
X		2	Safety Relief Valve	X	
X		1	Steam Drum Vent Valve	X	
X		1	Continuous Blowdown Metering Valve		X
X		1	Continuous Blowdown Stop Valve		X
X		1	Chemical Feed Check Valve		X
X		1	Chemical Feed Stop Valve		X
X		2	Intermittent Blowdown Valves (1 Slow, 1 Quick)	X	
X		1	Water Column (Probe Type)		X
X		1	Water Column Drain Valve		X

Included		QTY.	DESCRIPTION	Ship Loose	
YES	NO			YES	NO
X		1	ASME Rated Gauge Glass with Gauge Glass Valves	X	
X		1	Gauge Glass Drain Valve		X
X		1	Auxiliary Low Water Cut Off (Probe Type)		X
	X	0	Remote Drum Level Indicator		
X		1	Auxiliary Low Water Cut Off Drain Valve		X
X		1	Drum Pressure Gauge	X	
X		1	Drum Pressure Gauge Isolation Valve		X
X		1	Drum Pressure Gauge Test Valve		X
X		1	Drum Pressure Gauge Drain Valve		X
X		1	Drum Pressure Transmitter Isolation Valve		X
X		2	Drum Level Transmitter Isolation Valve		X
X		2	Drum Level Transmitter Drain Valve		X
X		1	Feed Water Drum Inlet Isolation Valve	X	
X		1	Feed Water Drum Inlet Check Valve	X	
OPTIONAL STEAM TRIM					
X		1	Main Steam Stop Valve	X	
X		1	Main Steam Non-Return Valve	X	
X		1	Main Steam Spool Piece with Drain Valve	X	
X		1	Mud Drum Steam Coil	X	
X		1	Mud Drum Steam Coil Isolation Valves	X	
X		1	Mud Drum Steam Coil Trap	X	
X		1	Mud Drum Steam Coil Control Valve	X	
	X	0	Desuperheater		
OPTIONAL FEEDWATER TRIM					
	X	0	Piping From Boiler Feedwater Pump to Control Station		
X		1	Feedwater Control Station (2 stop valves and 1 bypass valve)	X	
X		1	Feedwater Control Valve	X	
	X	0	Feedwater Piping From Control Station to Drum		
OPTIONAL ECONOMIZER					
X		1	Carbon Steel Economizer	X	
X		1	Economizer Safety Relief Valve	X	
X		1	Economizer 3-valve Bypass Station	X	
X		1	Economizer Outlet to Drum Inlet	X	
X		1	Economizer Vent Valve	X	
X		1	Economizer Drain Valve	X	
X		1	Economizer Support Structure	X	

OPTIONAL BOILER BREACHING/DUCTING					
Included		QTY.	DESCRIPTION	Ship Loose	
YES	NO			YES	NO
X		1	Boiler Outlet to Economizer Inlet Transition Top Exit	X	
X		1	Economizer Outlet to Stack Transition	X	
X		1	Stack (to 50' from grade top exit Ds, roof tie off by others)	X	
X		1	Stack Damper	X	
X		1	Stack Damper Actuator	X	
X		1	FGR Duct	X	
X		1	FGR Damper	X	
	X	0	FD Fan to Windbox		
Opt		1	CEMS System	X	
	X	1	Training Video	X	
OPTIONAL INSTRUMENTATION					
X		1	High Steam Pressure Switch (Auto Reset)		X
X		1	High High Steam Pressure Switch (Manual Reset)		X
X		1	Drum Pressure Transmitter with 2-valve Manifold	X	
X		1	Drum Level Transmitter with 3-Valve Manifold	X	
X		1	Steam Flow Transmitter with 3-Valve Manifold and Orifice	X	
X		1	Feedwater Flow Transmitter w/ 3-Valve Manifold and Orifice	X	
X		1	Boiler Outlet Draft Pressure Transmitter w/ 3-Valve Manifold	X	
X		1	Flue Gas Oxygen Analyzer	X	
	X	0	Flue Gas Analyzer Calibration Kit		
X		1	Combustion Air Flow Transmitter with 3-Valve Manifold	X	
	X	0	Combustion Air Temperature Transmitter with Thermowell		
X		1	NG Flow Transmitter w/ 3-Valve Manifold and Orifice	X	
X		1	Fuel Oil Flow Transmitter with 3-Valve Manifold and Orifice	X	
	X	0	Feedwater Temperature Transmitter with Thermowell		
	X	0	Feedwater Temperature Gauge with Thermowell		
	X	0	Flue Gas Temperature Transmitter with Thermowell		
	X	0	Flue Gas Temperature Gauge with Thermowell		
	X	0	Steam Pressure Transmitter with 2-Valve Manifold		
	X	0	Steam Temperature Transmitter with Thermowell		
	X	0	Aux. Steam Flow Transmitter w/ 3-Valve Manifold and Orifice		
X		1	Furnace Pressure Switch	X	
	X	0	Furnace Pressure Transmitter with 3-Valve Manifold		
	X	0	Natural Gas Pressure Transmitter with 2-Valve Manifold		
	X	0	Fuel Oil Pressure Transmitter with 2-Valve Manifold		
X		1	FD Fan VFD	X	
	X	0	Conductivity Blowdown Controller		

Included		QTY.	DESCRIPTION	Ship Loose	
YES	NO			YES	NO
OPTIONAL PLATFORMS					
X		1	Boiler Rear Platform with Ladder (Steam Drum Access)	X	
X		1	Boiler Roof Platform with Ladder (SRV and NRV Access)	X	
X		1	Stack Emissions Platform with Ladder	X	
	X	0	Boiler Front Platform		
OPTIONAL INSULATION					
	X	0	Drum Heads		
	X	0	Piping		
	X	0	Ducting		
OPTIONAL SUPPORTS					
	X	0	Piping (Superior Boiler Piping Only)		
	X	0	Ducting (Superior Boiler Ducting Only)		
	X	0	Stack		
	X	0	FD Fan and Duct		

4. Commercial Terms

A. Pricing Summary

DESCRIPTION	LOT PRICE
Base Proposal: Two (2) Saturated steam boiler rated at 100,000 lb/hr including burner, controls and trim as described in *Section 2 & 3* of this proposal.	
Economizer: Superior Boiler shall provide a Feedwater preheater, complete with support steel and interconnecting breeching. As detailed in *Section 2 & 3* of this proposal.	
Burner and Controls: Zeeco NG/#2 Burner. Includes Burner Management and PLC based Combustion Control. 9ppm NOx NG/ 90ppm NOx Oil utilizing 20% FGR.	
Tube Thickness: (3) Units; (2) Units Adder for 0.135" wall tubes in lieu of standard 0.105" and 0.120" wall tubes	
Stack: Stack 50 ft from Grade top exit Ds, roof tie off by others.	
CEMs: (3) Unit System; (2) Units System HVAC Attachment to CEMs Cabinet Carbon Monoxide Measurement Additional Analyzer Rack Bay RATA Testing: Assumed (3) Unit Testing in Concurrent Days for NOx and O2 Rockwell ControlLogix PLC Modbus TCP Module Additional options: Ammonia Slip Measurement for (2) Units Weatherized CEMs Shelter with HVAC	
Adder for Yokogawa Auto Calibration Kit: Single Kit Pricing	
Startup	
Freight Estimate	
Bid Validity: This proposal shall be valid for a total of 120 days from the date of this revised proposal After the referenced date, all quoted costs are subject to potential escalation	

B. Notes and Clarifications:

(i) All instrumentation as shown in this proposal is included and mounted where possible on the boiler prior to shipment. Any field installed instrumentation shall be shipped loose for

Cat® 3516E

High Power Density (HPD) Diesel Generator Sets

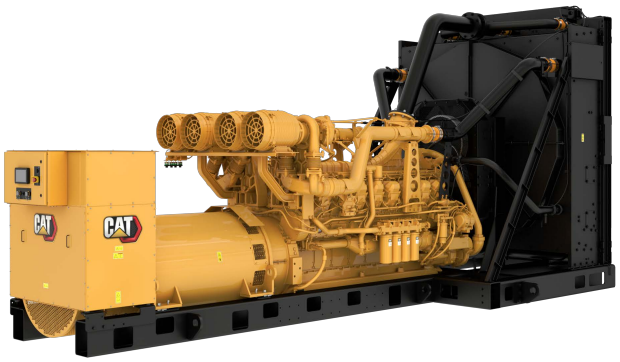


Image shown may not reflect actual configuration

Bore – mm (in)	170 (6.69)
Stroke – mm (in)	215 (8.46)
Displacement – L (in^3)	78.1 (4766)
Compression Ratio	13.9:1
Aspiration	TA
Fuel System	MEUI
Governor Type	ADEM™ A5

Standby 60 Hz ekW (kVA)	Mission Critical 60 Hz ekW (kVA)	Prime 60 Hz ekW (kVA)	Emissions Performance
3000 (3750)	3000 (3750)	2725 (3406)	U.S. EPA Certified for Emergency Stationary Applications (Tier 2)

Features

Cat® Diesel Engine

- Meets U.S. EPA Stationary Emergency Use Only (Tier 2) emissions standards
- Reliable performance proven in thousands of applications worldwide
- Certified alternative fuels including Hydrotreated Vegetable Oil (HVO), Renewable Diesel (RD) and Hydrotreated Renewable Diesel (HRD) which meet EN 15940 or ASTM D975 can be used or blended with EN 590 diesel

Generator Set Package

- Accepts 100% block load in one step
- Meets NFPA 110 loading requirements
- Conforms to ISO 8528-5 G3 load acceptance requirements
- Reliability verified through torsional vibration, fuel consumption, oil consumption, transient performance, and endurance testing

Alternators

- Superior motor starting capability minimizes need for oversizing generator
- Designed to match performance and output characteristics of Cat diesel engines

Cooling System

- Cooling systems available to operate in ambient temperatures up to 50°C (122°F)
- Tested to ensure proper generator set cooling

Cat Energy Control System (ECS)

- User-friendly interface and navigation
- Scalable system to meet a wide range of installation requirements
- Expansion modules and site specific programming for specific customer requirements
- Graphical touchscreen display
- Easily upgradeable

Warranty

- 24 months/1000-hour warranty for standby and mission critical ratings
- Extended service protection is available to provide extended coverage options

Worldwide Product Support

- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- Your local Cat dealer provides extensive post-sale support, including maintenance and repair agreements

Financing

- Caterpillar offers an array of financial products to help you succeed through financial service excellence
- Options include loans, finance lease, operating lease, working capital, and revolving line of credit
- Contact your local Cat dealer for availability in your region

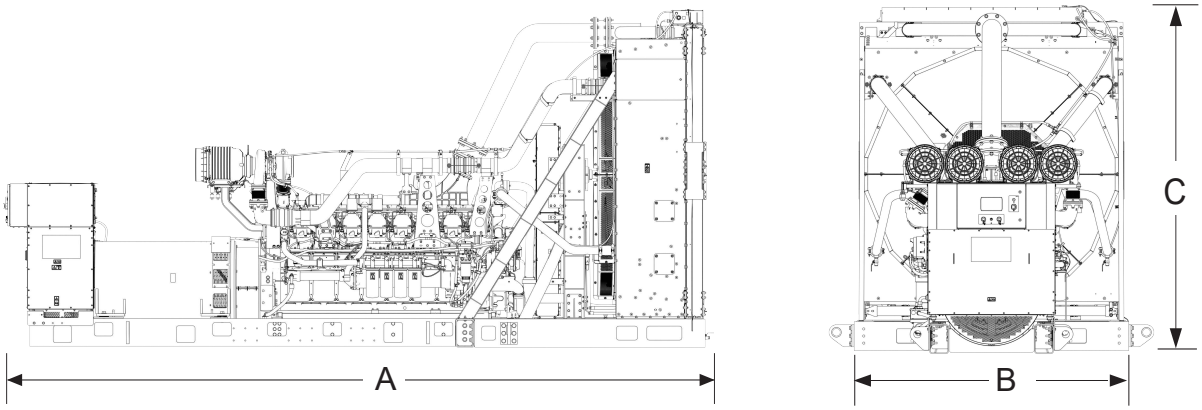
Package Performance

Performance	Standby		Mission Critical		Prime	
Engine Speed	1800 rpm		1800 rpm		1800 rpm	
Frequency	60 Hz		60 Hz		60 Hz	
Gen set power rating with fan	3000 ekW		3000 ekW		2725 ekW	
Gen set power rating with fan @ 0.8 power factor	3750 kVA		3750 kVA		3406 kVA	
Emissions	Tier 2 (EPA ESE)		Tier 2 (EPA ESE)		Tier 2 (EPA ESE)	
Performance number	EM4716-02		EM4718-02		EM4720-02	
Fuel Consumption						
100% load with fan – L/hr (gal/hr)	773.2	(204.3)	773.2	(204.3)	711.2	(187.9)
75% load with fan – L/hr (gal/hr)	624.2	(164.9)	624.2	(164.9)	581.6	(153.7)
50% load with fan – L/hr (gal/hr)	467.5	(123.5)	467.5	(123.5)	438.1	(115.7)
25% load with fan – L/hr (gal/hr)	246.4	(65.1)	246.4	(65.1)	229.2	(60.6)
Cooling System						
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)	0.12	(0.48)	0.12	(0.48)
Radiator air flow – m^3/min (cfm)	3476	(122753)	3476	(122753)	3476	(122753)
Engine coolant capacity – L (gal)	179.0	(47.3)	179.0	(47.3)	179.0	(47.3)
Radiator coolant capacity – L (gal)	255.0	(67.4)	255.0	(67.4)	255.0	(67.4)
Total coolant capacity – L (gal)	434.0	(114.7)	434.0	(114.7)	434.0	(114.7)
Inlet Air						
Combustion air inlet flow rate – m^3/min (cfm)	246.1	(8690.9)	246.1	(8690.9)	230.3	(8133.7)
Exhaust System						
Exhaust stack gas temperature – °C (°F)	483.3	(902.0)	483.3	(902.0)	484.5	(904.1)
Exhaust gas flow rate – m^3/min (cfm)	645.8	(22806.2)	645.8	(22806.2)	600.2	(21192.9)
Exhaust system backpressure (maximum allowable) – kPa (in. water)	7.0	(28.1)	7.0	(28.1)	7.0	(28.1)
Heat Rejection						
Heat rejection to jacket water – kW (Btu/min)	917	(52144)	917	(52144)	854	(48592)
Heat rejection to exhaust (total) – kW (Btu/min)	3091	(175769)	3091	(175769)	2875	(163492)
Heat rejection to aftercooler – kW (Btu/min)	944	(53683)	944	(53683)	827	(47047)
Heat rejection to atmosphere from engine – kW (Btu/min)	158	(8993)	158	(8993)	154	(8766)
Heat rejection from alternator – kW (Btu/min)	119	(6739)	119	(6739)	108	(6119)
Emissions* (Nominal) - Full Load						
NOx mg/Nm^3 (g/hp-h)	2610.4	(5.63)	2610.4	(5.63)	2311.6	(5.02)
CO mg/Nm^3 (g/hp-h)	305.9	(0.66)	305.9	(0.66)	404.8	(0.89)
HC mg/Nm^3 (g/hp-h)	17.4	(0.04)	17.4	(0.04)	15.0	(0.04)
PM mg/Nm^3 (g/hp-h)	17.6	(0.05)	17.6	(0.05)	22.6	(0.06)
Emissions* (Potential Site Variation) - Full Load						
NOx mg/Nm^3 (g/hp-h)	3132.5	(6.76)	3132.5	(6.76)	2773.9	(6.02)
CO mg/Nm^3 (g/hp-h)	550.6	(1.20)	550.6	(1.20)	728.7	(1.60)
HC mg/Nm^3 (g/hp-h)	23.1	(0.06)	23.1	(0.06)	19.9	(0.05)
PM mg/Nm^3 (g/hp-h)	24.6	(0.06)	24.6	(0.06)	31.6	(0.08)

**mg/Nm^3 levels are corrected to 5% O_2. Contact your local Cat dealer for further information*

3516E Diesel Generator Sets
High Power Density (HPD)
Electric Power

Weights and Dimensions



Rating ekW (kVA)	Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight kg (lb)
3000 (3750)	7678 (302.3)	2874 (113.2)	3639 (143.3)	20 380 (44,930)

Note: *For reference only. Do not use for installation design. Contact your local Cat dealer for precise weights and dimensions.*

Ratings Definitions

Standby
Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby rated ekW. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Mission Critical
Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the mission critical rated ekW. Typical peak demand up to 100% of rated ekW for up to 5% of the operating time. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Prime
Output available with varying load for an unlimited time. Average power output is 70% of the prime rated ekW. Typical peak demand is 100% of prime rated ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.

Applicable Codes and Standards
AS 1359, ULC 2200 3rd edition, UL 489, UL 869A, IBC, IEC 60034-1, ISO 3046, ISO 8528, NEMA MG1-22, NEMA MG1-33, 2014/35/EU, 2006/42/EC, 2014/30/EU and facilitates compliance to NFPA 37, NFPA 70, NFPA 99, NFPA 110.

Note: Codes may not be available in all model configurations. Please consult your local Cat dealer for availability.

Data Center Applications
- All ratings Tier III/Tier IV compliant per Uptime Institute requirements.
- All ratings ANSI/TIA-942 compliant for Rated-1 through Rated-4 data centers.

Fuel Rates
Fuel consumption reported in accordance with ISO 3046-1, based on fuel oil of 35º API [16°C (60ºF)] gravity having an LHV of 42,780 kJ/kg (18,390 Btu/lb) when used at 15ºC (59ºF) and weighing 850 g/liter (7.0936 lbs/U.S. gal.) All fuel consumption values refer to rated engine power.

www.cat.com/electricpower

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3516 PGJL
LEHE2570-05 (05/23)

Cat® C32

Diesel Generator Sets



Image shown may not reflect actual configuration

Bore – mm (in)	145 (5.7)
Stroke – mm (in)	162 (6.4)
Displacement – L (in^3)	32.1 (1959)
Compression Ratio	14.0:1
Aspiration	TA
Fuel System	EUI
Governor Type	ADEM™ A4

Standby 60 Hz ekW (kVA)	Mission Critical 60 Hz ekW (kVA)	Prime (req SRR) 60 Hz ekW (kVA)	Emissions Performance
1100 (1375.0)	1100 (1375.0)	1000 (1250.0)	U.S. EPA Emergency Stationary Use Only (Tier 2)
1250 (1562.5)	1250 (1562.5)	1136 (1420.0)	

Standard Features

Cat® Diesel Engine

- Designed and tested to meet the U.S. EPA Emergency Stationary Use Only (Tier 2) emission standards
- Reliable and consistent performance proven in thousands of applications worldwide

Generator Set Package

- Accepts 100% block load in one step and meets NFPA 110 loading requirements
- Conforms to ISO 8528-5 G3 load acceptance requirements
- Reliability is verified through prototype testing, which includes torsional vibration, fuel consumption, oil consumption, transient performance, and endurance testing

Alternators

- Superior motor starting capability minimizes the need for oversizing the generator
- Designed to match the performance and output characteristics of Cat diesel engines

Cooling System

- Cooling systems available to operate in ambient temperatures up to 50°C (122°F)
- Tested to ensure proper generator set cooling

EMCP 4 Control Panels

- User-friendly interface and navigation
- Scalable system to meet a wide range of installation requirements
- Expansion modules and site specific programming for specific customer requirements

Warranty

- 24 months/1000-hour warranty for standby, prime and mission critical ratings
- Extended service protection is available to provide extended coverage options

Worldwide Product Support

- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- Your local Cat dealer provides extensive post-sale support, including maintenance and repair agreements

Financing

- Caterpillar offers an array of financial products to help you succeed through financial service excellence
- Options include loans, finance lease, operating lease, working capital, and revolving line of credit
- Contact your local Cat dealer for availability in your region

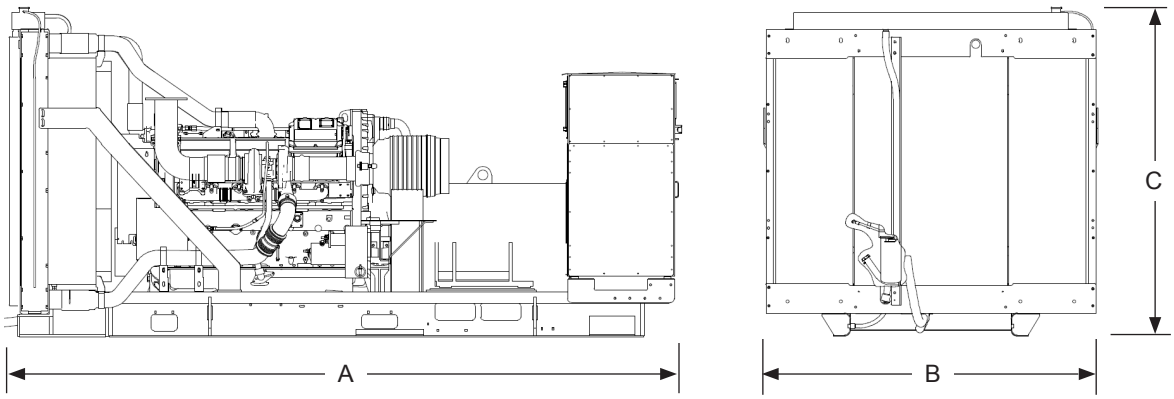
Package Performance

Performance	Standby		Mission Critical		Prime (SRR)	
Frequency	60 Hz		60 Hz		60 Hz	
Gen set power rating with fan	1250 ekW		1250 ekW		1136 ekW	
Gen set power rating with fan @ 0.8 power factor	1562.5 kVA		1562.5 kVA		1420.0 kVA	
Emissions	EPA ESE (Tier 2)		EPA ESE (Tier 2)		EPA ESE (Tier 2)	
Performance number	EM2324-09		EM2532-03		EM2538-01	
Fuel Consumption						
100% load with fan – L/hr (gal/hr)	330.9	(87.4)	330.9	(87.4)	306.6	(81.0)
75% load with fan – L/hr (gal/hr)	268.9	(71.0)	269.1	(71.1)	241.4	(63.8)
50% load with fan – L/hr (gal/hr)	181.1	(47.8)	181.3	(47.9)	167.5	(44.3)
25% load with fan – L/hr (gal/hr)	102.1	(27.0)	102.3	(27.0)	94.7	(25.0)
Cooling System						
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)	0.12	(0.48)	0.12	(0.48)
Radiator air flow – m^3/min (cfm)	1432	(50571)	1432	(50571)	1432	(50571)
Engine coolant capacity – L (gal)	55.0	(14.5)	55.0	(14.5)	55.0	(14.5)
Radiator coolant capacity – L (gal)	55.0	(14.5)	55.0	(14.5)	55.0	(14.5)
Total coolant capacity – L (gal)	110	(29.0)	110	(29.0)	110	(29.0)
Inlet Air						
Combustion air inlet flow rate – m^3/min (cfm)	118.0	(4168.3)	118.0	(4168.3)	114.4	(4039.9)
Exhaust System						
Exhaust stack gas temperature – °C (°F)	430.3	(806.6)	430.3	(806.6)	420.1	(788.2)
Exhaust gas flow rate – m^3/min (cfm)	283.4	(10005.8)	283.4	(10005.8)	270.7	(9558.9)
Exhaust system backpressure (maximum allowable) – kPa (in. water)	6.7	(27.0)	6.7	(27.0)	6.7	(27.0)
Heat Rejection						
Heat rejection to jacket water – kW (Btu/min)	403	(22908)	403	(22908)	390	(22199)
Heat rejection to exhaust (total) – kW (Btu/min)	1097	(62361)	1097	(62361)	1053	(59888)
Heat rejection to aftercooler – kW (Btu/min)	452	(25715)	452	(25715)	433	(24627)
Heat rejection to atmosphere from engine – kW (Btu/min)	222	(12620)	222	(12620)	209	(11880)
Heat rejection from alternator – kW (Btu/min)	58.9	(3350)	58.9	(3350)	52.2	(2969)
Emissions* (Nominal)						
NOx mg/Nm^3 (g/hp-h)	2416.9	(5.13)	2416.9	(5.13)	2127.0	(4.58)
CO mg/Nm^3 (g/hp-h)	53.0	(0.11)	53.0	(0.11)	40.4	(0.09)
HC mg/Nm^3 (g/hp-h)	21.6	(0.05)	21.6	(0.05)	22.2	(0.06)
PM mg/Nm^3 (g/hp-h)	5.1	(0.01)	5.1	(0.01)	6.8	(0.02)
Emissions* (Potential Site Variation)						
NOx mg/Nm^3 (g/hp-h)	2924.5	(6.20)	2924.5	(6.20)	2573.7	(5.54)
CO mg/Nm^3 (g/hp-h)	99.1	(0.21)	99.1	(0.21)	75.5	(0.16)
HC mg/Nm^3 (g/hp-h)	40.8	(0.10)	40.8	(0.10)	42.0	(0.10)
PM mg/Nm^3 (g/hp-h)	10.0	(0.02)	10.0	(0.02)	13.2	(0.03)

**mg/Nm^3 levels are corrected to 5% O_2. Contact your local Cat dealer for further information*

C32 Diesel Generator Sets
Electric Power

Weights and Dimensions



Standby 60 Hz ekW (kVA)	Mission Critical 60 Hz ekW (kVA)	Prime (SRR) 60 Hz ekW (kVA)	Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight kg (lb)
1100 (1375.0)	1100 (1375.0)	1000 (1250.0)	4285 (168.7)	2228 (87.7)	2194 (86.4)	7400 (16,314)
1250 (1562.5)	1250 (1562.5)	1136 (1420.0)	4385 (172.7)	2228 (87.7)	2194 (86.4)	7600 (16,755)

Note: *For reference only. Do not use for installation design. Contact your local Cat dealer for precise weights and dimensions.*

Ratings Definitions

Standby
Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Mission Critical
Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the mission critical power rating. Typical peak demand up to 100% of rated power for up to 5% of the operating time. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Prime (req Special Rating Request)
Output available with varying load. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Applicable Codes and Standards
AS 1359, CSA C22.2 No. 100-04, UL 142, UL 489, UL 869, UL 2200, NFPA 37, NFPA 70, NFPA 99, NFPA 110, IBC, IEC 60034-1, ISO 3046, ISO 8528, NEMA MG1-22, NEMA MG1-33, 2014/35/EU, 2006/42/EC, 2014/30/EU.

Note: Codes may not be available in all model configurations. Please consult your local Cat dealer for availability.

Data Center Applications
- ISO 8528-1 Data Center Power (DCP) compliant per DCP application of Cat diesel generator set prime power rating.
- All ratings Tier III/Tier IV compliant per Uptime Institute requirements.
- All ratings ANSI/TIA-942 compliant for Rated-1 through Rated-4 data centers.

Fuel Rates
Fuel rates are based on fuel oil of 35º API [16°C (60ºF)] gravity having an LHV of 42,780 kJ/kg (18,390 Btu/lb) when used at 29ºC (85ºF) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.)

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C32 PGDG, C32 PGBI
LEHE1349-06 (06/24)

University of Kentucky
Facilities Management
Office of the Vice President

March 5, 2026

Mr. Zack Bittner
Ky Division for Air Quality
300 Sower Blvd, 2nd Floor
Frankfort, KY 40601

Subject: Application to amend emergency generators to permit V-25-005
University of Kentucky, 21-067-00003, AI 1104

Dear Mr. Bittner:

The University of Kentucky is proposing to install three diesel-fired emergency generators for auxiliary power as part of modernization and expansion projects. EU113 and EU114 will replace the existing generators at the Chemistry-Physics building (EU55-06 and EU59-04). Due to the equipment replacement with Tier III engines, there is a net decrease in carbon monoxide, nitrogen oxides, and particulate emissions. The application consists of:

- EU113 – Chemistry-Physics (bldg 55) – 463 hp
- EU114 – Chemistry-Physics (bldg 55) – 617 hp
- EU115 – Environmental Health & Safety (bldg 559) – 282 hp

Regulation 40 CFR 63, subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, sections 63.6585(c) and 63.6590(a)(iii) applies to the generators. Section 63.6590(c)(1) states that compliance with the regulation is met through the requirements of 40 CFR 60, subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* for diesel engines. Construction of the generators do not add any additional regulations to the current V-25-005 permit, and all existing conditions of the permit will be met after the addition. Therefore, we request the Division for Air Quality process the construction as a 502(b)(10) change in accordance with 401 KAR 52:020, Section 17.

We appreciate your timely review and consideration of this request, and we look forward to your approval. Should you have questions or require additional information, please do not hesitate to contact Ms. Andrea Smith, Air Quality Compliance Manager. She can be reached at Andrea.Smith@uky.edu or 859-218-6265.

Sincerely,

Barry K. Swanson
Chief Procurement Officer
Acting Chief Facilities Officer, Facilities Management

Attachments: DEP7007 Forms, Equipment Specification Sheets

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007AI

Administrative Information

___ Section AI.1: Source Information

___ Section AI.2: Applicant Information

___ Section AI.3: Owner Information

___ Section AI.4: Type of Application

___ Section AI.5: Other Required Information

___ Section AI.6: Signature Block

___ Section AI.7: Notes, Comments, and Explanations

Additional Documentation

___ Additional Documentation attached

Source Name: University of Kentucky

KY EIS (AFS) #: 21- 067-00003

Permit #: V-25-005

Agency Interest (AI) ID: 1104

Date: March 5, 2026

Section AI.1: Source Information

Physical Location Address:	**Street:**	225 Frank D Peterson Service Bldg.				
	City:	Lexington	**County:**	Fayette	**Zip Code:**	40506
Mailing Address:	**Street or P.O. Box:**	225 Frank D Peterson Service Bldg.				
	City:	Lexington	**State:**	Kentucky	**Zip Code:**	40506

Standard Coordinates for Source Physical Location

Longitude: 38.03895 (decimal degrees) **Latitude:** -84.50496 (decimal degrees)

Primary (NAICS) Category: Colleges, Universities, and Profession Schools **Primary NAICS #:** 61131

Classification (SIC) Category: Colleges and Universities **Primary SIC #:** 8221

Briefly discuss the type of business conducted at this site: The University of Kentucky is classified under Standard Industrial Code (SIC) 8221 for Colleges, Universities, and Professional Schools, and the Main Campus also includes UK HealthCare, which includes the hospitals and clinics of the University of Kentucky, and Samaritan Hospital. The majority of emission sources at are boilers and emergency generators, combusting natural gas, diesel, and coal.

Description of Area Surrounding Source: ☐ Rural Area ☐ Industrial Park ☐ Residential Area ☑ Urban Area ☐ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employees: ~17,000

Approximate distance to nearest residence or commercial property: 40 ft **Property Area:** 600 **Is this source portable?** ☐ Yes ☑ No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	☑ Currently Hold	☐ Need	☐ N/A
Solid Waste:	☑ Currently Hold	☐ Need	☐ N/A
RCRA:	☑ Currently Hold	☐ Need	☐ N/A
UST:	☑ Currently Hold	☐ Need	☐ N/A

Type of Regulated Waste Activity: ☑ Mixed Waste Generator ☑ Generator ☐ Recycler ☐ Other: _____ ☐ U.S. Importer of Hazardous Waste ☐ Transporter ☑ Treatment/Storage/Disposal Facility ☐ N/A

Section AI.2: Applicant Information

Applicant Name: University of Kentucky

Title: (if individual)

Mailing Address:
Street or P.O. Box: 225 Frank D Peterson Service Bldg
City: Lexington **State:** KY **Zip Code:** 40506

Email: (if individual)

Phone:

Technical Contact

Name: Andrea Smith

Title: Air Quality Compliance Manager

Mailing Address:
Street or P.O. Box: 355 Cooper Dr
City: Lexington **State:** KY **Zip Code:** 40506

Email: andrea.smith@uky.edu

Phone: 859-218-6265

Air Permit Contact for Source

Name: Same as technical contact

Title:

Mailing Address:
Street or P.O. Box:
City: **State:** **Zip Code:**

Email:

Phone:

Section AI.3: Owner Information

☑ **Owner same as applicant**

Name: _____

Title: _____

Mailing Address: **Street or P.O. Box:** _____

City: _____ **State:** _____ **Zip Code:** _____

Email: _____

Phone: _____

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position

Section AI.4: Type of Application

Current Status: ☑ Title V ☐ Conditional Major ☐ State-Origin ☐ General Permit ☐ Registration ☐ None

Requested Action: *(check all that apply)*

☐ Name Change	☐ Initial Registration	☐ Significant Revision	☐ Administrative Permit Amendment
☐ Renewal Permit	☐ Revised Registration	☐ Minor Revision	☐ Initial Source-wide OperatingPermit
☐ 502(b)(10)Change	☐ Extension Request	☐ Addition of New Facility	☐ Portable Plant Relocation Notice
☐ Revision	☑ Off Permit Change	☐ Landfill Alternate Compliance Submittal	☐ Modification of Existing Facilities
☐ Ownership Change	☐ Closure		

Requested Status: ☑ Title V ☐ Conditional Major ☐ State-Origin ☐ PSD ☐ NSR ☐ Other: _____

Is the source requesting a limitation of potential emissions? ☐ Yes ☑ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☐ Particulate Matter		☐ Single HAP	
☐ Volatile Organic Compounds (VOC)		☐ Combined HAPs	
☐ Carbon Monoxide		☐ Air Toxics (40 CFR 68, Subpart F)	
☐ Nitrogen Oxides		☐ Carbon Dioxide	
☐ Sulfur Dioxide		☐ Greenhouse Gases (GHG)	
☐ Lead		☐ Other	

For New Construction:

Proposed Start Date of Construction: *(MM/YYYY)* Ordered June 2025

Proposed Operation Start-Up Date: *(MM/YYYY)* Late Spring 2026

For Modifications:

Proposed Start Date of Modification: *(MM/YYYY)*

Proposed Operation Start-Up Date: *(MM/YYYY)*

Applicant is seeking coverage under a permit shield. ☐ Yes ☑ No

Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

- ☐ DEP7007A Indirect Heat Exchangers and Turbines
- ☐ DEP7007B Manufacturing or Processing Operations
- ☐ DEP7007C Incinerators and Waste Burners
- ☐ DEP7007F Episode Standby Plan
- ☐ DEP7007J Volatile Liquid Storage
- ☐ DEP7007K Surface Coating or Printing Operations
- ☐ DEP7007L Mineral Processes
- ☐ DEP7007M Metal Cleaning Degreasers
- ☑ DEP7007N Source Emissions Profile
- ☐ DEP7007P Perchloroethylene Dry Cleaning Systems
- ☐ DEP7007R Emission Offset Credit
- ☐ DEP7007S Service Stations
- ☐ DEP7007T Metal Plating and Surface Treatment Operations
- ☑ DEP7007V Applicable Requirements and Compliance Activities
- ☐ DEP7007Y Good Engineering Practice and Stack Height Determination
- ☐ DEP7007AA Compliance Schedule for Non-complying Emission Units
- ☐ DEP7007BB Certified Progress Report
- ☐ DEP7007CC Compliance Certification
- ☐ DEP7007DD Insignificant Activities
- ☑ DEP7007EE Internal Combustion Engines
- ☐ DEP7007FF Secondary Aluminum Processing
- ☐ DEP7007GG Control Equipment
- ☐ DEP7007HH Haul Roads
- ☐ Confidentiality Claim
- ☐ Ownership Change Form
- ☐ Secretary of State Certificate
- ☐ Flowcharts or diagrams depicting process
- ☐ Digital Line Graphs (DLG) files of buldings, roads, etc.
- ☐ Site Map
- ☐ Map or drawing depicting location of facility
- ☐ Safety Data Sheet (SDS)
- ☐ Emergency Response Plan
- ☐ Other: _____

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

Authorized Signature	3/5/2026 **Date**
Barry K. Swanson **Type or Printed Name of Signatory**	**Chief Procurement Officer** **Acting Chief Facilities Officer,** **Facilities Management** **Title of Signatory**

*Responsible official as defined by 401 KAR 52:001.

Section AI.7: Notes, Comments, and Explanations
EU113 and EU114 - Chemistry-Physics (bldg 0055) – Install two diesel-fired emergency generators. These replace the EU55-06 (Onan 300ROZ81) and EU59-04 (Onan 300ROZ81) generators.
EU115 - Environmental Health & Safety - Install one diesel-fired emergency generator.

Division for Air Quality

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DEP7007EE

Internal Combustion Engines

___ Section EE.1: General Information
___ Section EE.2: Operating Information
___ Section EE.3: Design Information
___ Section EE.4: Fuel Information
___ Section EE.5: Emission Factor Information
___ Section EE.6: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG

___ Attach EPA certification of the engine

Source Name: University of Kentucky
KY EIS (AFS) #: 21- 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: March 5, 2026

Section EE.1: General Information

Emission Unit #	Emission Unit Name	Control Device ID	Stack ID	Manufacturer	Model Number	Model Year	Date of Manufacture	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	Date Reconstructed/ Modified	List Applicable Regulations
113	463 Hp (345 kW) Diesel-Fired Emergency Engine - Chem-Phys Bldg 55	NA	104	rehlko	300REOZJ	2025	2025	03/2026	NA	40CFR60, Subpart IIII
114	617 Hp (460 kW) Diesel-Fired Emergency Engine - Chem-Phys Bldg 55	NA	105	rehlko	400REOZJD	2025	2025	03/2026	NA	40CFR60, Subpart IIII
115	282 Hp (175 kW) Diesel-Fired Emergency Engine - EHS Bldg 569	NA	106	Generac	SD175 DSE	2025	2025	06/2026	NA	40CFR60, Subpart IIII

Section EE.2: Operating Information

Emission Unit #	Engine Purpose (Identify if Non-Emergency, Emergency,Fire/Water Pump, Black-start engine for combustion turbine, Engine Testing)	Hours Operated	Is this engine a rental? *(Yes/No)*	Rental Time Period *(hrs)*	Alternate Operating Scenarios (Describe any operating scenarios in which the engine may be used in a different configuration)
113	Emergency	New	No	NA	NA
114	Emergency	New	No	NA	NA
115	Emergency	New	No	NA	NA

Section EE.3: Design Information

Emission Unit #	Engine Type (Identify all that apply: Commercial, Institutional, Stationary, Non-Road)	Ignition Type (Identify if either Compression or Spark Ignition)	Engine Family (Identify all that apply: 2-stroke, 4-stroke, Rich Burn, Lean Burn)	Maximum Engine Power *(bhp)*	Maximum Engine Speed *(rpm)*	Total Displacement *(L)*	Number of Cylinders
113	John Deere - Stationary	Compression	4-cycle, turbocharged	463	1800	9	6
114	John Deere - Stationary	Compression	4-cycle, turbocharged	617	1800	13.5	6
115	Iveco/FPT - Stationary	Compression	4-cycle, turbocharged	617	1800	6.7	6

Section EE.4: Fuel Information

Emission Unit #	Identify if Primary, Secondary, or Tertiary Fuel	Fuel Type (Identify if Diesel, Gasoline, Natural Gas, Liquefied Petroleum Gas (LPG), Landfill/Digester Gas, or Other)	Fuel Grade	Percent Time Used *(%)*	Maximum Fuel Consumption	Heat Content	Sulfur Content *(%)*	SCC Code	SCC Units
113	Primary	ULSD	#2	100	0.0222 1000 gal/hr	137000 Btu/gal	0.0015%	20300101	1000 gal
114	Primary	ULSD	#2	100	0.0309 1000 gal/hr	137000 Btu/gal	0.0015%	20300101	1000 gal
115	Primary	ULSD	#2	100	0.0135 1000 gal/hr	137000 Btu/gal	0.0015%	20300101	1000 gal

Section EE.5: Emission Factor Information

Emission factors expressed here are based on the potential to emit.

Emission Unit #	Fuel	Pollutant	Emission Factor	Emission Factor Units	Source of Emission Factor
113	ULSD	CO	29	#/1000gal	Manufacturer
		CO2	22468	#/1000gal	AP-42 Table 3.3.1
		NOx+HC	122.2	#/1000gal	Manufacturer
		PM	3.5	#/1000gal	Manufacturer
		SO2	39.7	#/1000gal	AP-42 Table 3.3.1
		Total HAP	0.502	#/1000gal	AP-42 Table 3.3.2
		VOC	48	#/1000gal	AP-42 Table 3.3-1
114	ULSD	CO	19.3	#/1000gal	Manufacturer
		CO2	22605	#/1000gal	AP-42 Table 3.4.1
		NOx+HC	110	#/1000gal	Manufacturer
		PM	3.2	#/1000gal	Manufacturer
		SO2	39.7	#/1000gal	AP-42 Table 3.4.1
		Total HAP	0.187	#/1000gal	AP-42 Table 3.4.2
		VOC	48	#/1000gal	AP-42 Table 3.4-1
115	ULSD	CO	35.4	#/1000gal	Manufacturer
		CO2	22468	#/1000gal	AP-42 Table 3.3.1
		NOx+HC	119.4	#/1000gal	Manufacturer
		PM	2.6	#/1000gal	Manufacturer
		SO2	39.7	#/1000gal	AP-42 Table 3.3.1
		Total HAP	0.502	#/1000gal	AP-42 Table 3.3.2
		VOC	48	#/1000gal	AP-42 Table 3.3-1

Section EE.6: Notes, Comments, and Explanations

EU113 and EU114 diesel-fired emergency generators replace the EU55-06 (Onan 300ROZ81) and EU59-04 (Onan 300ROZ81) generators.

Division for Air Quality

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DEP7007N

Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
__ Section N.3: Fugitive Information
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: University of Kentucky
KY EIS (AFS) #: 21- 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: March 5, 2026

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
EU113	463 Hp (345 kW) Engine Chem Phys	1	ULSD Usage	NA	NA	1	0.0222	CO	29.0	Manufacturer	0.00%	0.00%	0.6438	0.6438	0.1610	0.1610
	Bldg 55						lb/Mgal	CO2	22468.0	AP-42 Table 3.3.1	0.00%	0.00%	498.7896	498.7896	124.6974	124.6974
								NOx+HC	122.20	Manufacturer	0.00%	0.00%	2.7128	2.7128	0.6782	0.6782
								PM	3.50	Manufacturer	0.00%	0.00%	0.0777	0.0777	0.0194	0.0194
								SO2	39.7	AP-42 Table 3.3.1	0.00%	0.00%	0.8813	0.8813	0.2203	0.2203
								Total HAP	0.502	AP-42 Table 3.3.2	0.00%	0.00%	1.11E-02	1.11E-02	0.0028	2.79E-03
								VOC	48	AP-42 Table 3.3-1	0.00%	0.00%	1.07E+00	1.07E+00	0.2664	2.66E-01

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Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
__ Section N.3: Fugitive Information
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: University of Kentucky
KY EIS (AFS) #: 21- 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: March 5, 2026

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
EU114	617 Hp (460 kW) Engine Chem Phys	1	ULSD Usage	NA	NA	1	0.0309	CO	19.3	Manufacturer	0.00%	0.00%	0.5964	0.5964	0.1491	0.1491
	Bldg 55						lb/Mgal	CO2	22605.0	AP-42 Table 3.4.1	0.00%	0.00%	698.4945	698.4945	174.6236	174.6236
								NOx+HC	110.00	Manufacturer	0.00%	0.00%	3.3990	3.3990	0.8498	0.8498
								PM	3.20	Manufacturer	0.00%	0.00%	0.0989	0.0989	0.0247	0.0247
								SO2	39.7	AP-42 Table 3.4.1	0.00%	0.00%	1.2267	1.2267	0.3067	0.3067
								Total HAP	0.187	AP-42 Table 3.4.2	0.00%	0.00%	5.78E-03	5.78E-03	1.44E-03	1.44E-03
								VOC	48	AP-42 Table 3.4-1	0.00%	0.00%	1.48E+00	1.48E+00	3.71E-01	3.71E-01

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Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
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__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: University of Kentucky
KY EIS (AFS) #: 21- 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: March 5, 2026

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
EU115	282 Hp (175 kW) Engine Chem Phys	1	ULSD Usage	NA	NA	1	0.0135	CO	35.4	Manufacturer	0.00%	0.00%	0.4779	0.4779	0.1195	0.1195
	Bldg 569						lb/Mgal	CO2	22468.0	AP-42 Table 3.3.1	0.00%	0.00%	303.3180	303.3180	75.8295	75.8295
								NOx+HC	119.40	Manufacturer	0.00%	0.00%	1.6119	1.6119	0.4030	0.4030
								PM	2.60	Manufacturer	0.00%	0.00%	0.0351	0.0351	0.0088	0.0088
								SO2	39.7	AP-42 Table 3.3.1	0.00%	0.00%	0.5360	0.5360	0.1340	0.1340
								Total HAP	0.502	AP-42 Table 3.3.2	0.00%	0.00%	6.78E-03	6.78E-03	1.69E-03	1.69E-03
								VOC	48	AP-42 Table 3.3-1	0.00%	0.00%	6.48E-01	6.48E-01	1.62E-01	1.62E-01

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Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
__ Section N.3: Fugitive Information
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: University of Kentucky
KY EIS (AFS) #: 21- 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: March 5, 2026

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
EU59-04	472 Hp (352 kW) Engine Chem Phys	1	ULSD Usage	NA	NA	1	0.0226	CO	130.0	AP-42 Table 3.3.1	0.00%	0.00%	-2.9380	-2.9380	-0.7345	-0.7345
	Bldg 55						lb/Mgal	CO2	22468.0	AP-42 Table 3.3.1	0.00%	0.00%	-507.7768	-507.7768	-126.9442	-126.9442
Equipment Replaced with EU113								NOx+HC	604.00	AP-42 Table 3.3.1	0.00%	0.00%	-13.6504	-13.6504	-3.4126	-3.4126
								PM	42.50	AP-42 Table 3.3.1	0.00%	0.00%	-0.9605	-0.9605	-0.2401	-0.2401
								SO2	39.7	AP-42 Table 3.3.1	0.00%	0.00%	-0.8972	-0.8972	-0.2243	-0.2243
								Total HAP	0.502	AP-42 Table 3.3.2	0.00%	0.00%	-1.13E-02	-1.13E-02	-0.0028	-2.84E-03
								VOC	48	AP-42 Table 3.3-1	0.00%	0.00%	-1.08E+00	-1.08E+00	-0.2712	-2.71E-01

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Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
__ Section N.3: Fugitive Information
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: University of Kentucky
KY EIS (AFS) #: 21- 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: March 5, 2026

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
EU55-06	800 Hp (597 kW) Engine Chem Phys	1	ULSD Usage	NA	NA	1	0.0405	CO	116.5	AP-42 Table 3.4.1	0.00%	0.00%	-4.7183	-4.7183	-1.1796	-1.1796
	Bldg 55						lb/Mgal	CO2	22605.0	AP-42 Table 3.4.1	0.00%	0.00%	-915.5025	-915.5025	-228.8756	-228.8756
Equipment Replaced with EU114								NOx+HC	438.40	AP-42 Table 3.4.1	0.00%	0.00%	-17.7552	-17.7552	-4.4388	-4.4388
								PM	13.70	AP-42 Table 3.4.1	0.00%	0.00%	-0.5549	-0.5549	-0.1387	-0.1387
								SO2	39.7	AP-42 Table 3.4.1	0.00%	0.00%	-1.6079	-1.6079	-0.4020	-0.4020
								Total HAP	0.187	AP-42 Table 3.4.2	0.00%	0.00%	-7.57E-03	-7.57E-03	-1.89E-03	-1.89E-03
								VOC	48	AP-42 Table 3.4-1	0.00%	0.00%	-1.94E+00	-1.94E+00	-4.86E-01	-4.86E-01

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DEP7007N

Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
__ Section N.3: Fugitive Information
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: University of Kentucky
KY EIS (AFS) #: 21- 067-0003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: 3/5/2026

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
Total project emissions.								CO					-5.938	-5.938	-1.485	-1.485
								CO2					77.323	77.323	19.331	19.331
								NOx+HC					-23.682	-23.682	-5.920	-5.920
								PM					-1.304	-1.304	-0.326	-3.26E-01
								SO2					0.139	0.139	0.035	0.035
								Total HAP					0.005	4.78E-03	0.001	1.20E-03
								VOC					0.168	1.68E-01	0.042	4.20E-02

Section N.2: Stack Information

UTM Zone:

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter *(ft)*	Height *(ft)*	Base Elevation *(ft)*	Northing *(m)*	Easting *(m)*	Flowrate *(acfm)*	Temperature *(°F)*	Exit Velocity *(ft/sec)*
1	EU113	0.6, est	30, est				2246	927	
1	EU114	0.6, est	30, est				2606	981	
1	EU115	0.6, est	30, est				1212	1040	

Section N.3: Fugitive Information

UTM Zone:

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side *(ft)*	Length of the Y Side *(ft)*	Northing *(m)*	Easting *(m)*	Release Temperature *(°F)*	Release Height *(ft)*
NA								

Section N.4: Notes, Comments, and Explanations

EU113 and EU114 diesel-fired emergency generators replace the EU55-06 (Onan 300ROZ81) and EU59-04 (Onan 300ROZ81) generators.

Division for Air Quality

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DEP7007V

Applicable Requirements and Compliance Activities

___ Section V.1: Emission and Operating Limitation

___ Section V.2: Monitoring Requirements

___ Section V.3: Recordkeeping Requirem

___ Section V.4: Reporting Requirements

___ Section V.5: Testing Requirements

___ Section V.6: Notes, Comments, and Explanation

Additional Documentation

___ Complete DEP7007AI

Source Name: University of Kentucky

KY EIS (AFS) #: 21- 067-00003

Permit #: V-25-005

Agency Interest (AI) ID: 1104

Date: March 5, 2026

Section V.1: Emission and Operating Limitation(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU113-EU115	463 Hp (345 kW) Diesel-Fired Emergency Engine - Chem-Phys Bldg 0055 617 Hp (460 kW) Diesel-Fired Emergency Engine - Chem-Phys Bldg 0055 282 Hp (175 kW) Diesel-Fired Emergency Engine - EHS Bldg 569	NSPS IIII: 40 CFR 60.4211(f)	NA	NA	NA	In order for the engines to be considered emergency stationary ICE (Internal Combustion Engine) under 40 CFR 60, Subpart IIII, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 60.4211(f)(1)-(3) is prohibited. If the permittee does not operate the engines according to these requirements, the engines will not be considered emergency engines and shall meet all requirements for non-emergency engines.	
		NSPS IIII: 40 CFR 60.4211(a)	NA	NA	NA	The permittee shall operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions, change only those emission-related settings that are permitted by the manufacturer; and meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply.	
		NSPS IIII: 40 CFR 60.4207(b)	NA	NA	NA	The permittee shall use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted.	

Section V.1: Emission and Operating Limitation(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
		NSPS IIII: 40 CFR 60.4206	NA	NA	NA	The permittee shall operate and maintain the stationary CI ICE such that the emission standards required in 40 CFR 60.4205 are achieved over the entire life of the engine.	
		NSPS IIII: 40 CFR 60.4211(g)	NA	NA	NA	If the engine and control device are not installed, configured, operated, and maintained according to the manufacturer's emission-related written instructions, or emission-related settings are changed in a way that is not permitted by the manufacturer, the permittee shall demonstrate compliance according to 40 CFR 60.4211(g)(3).	
		NSPS IIII: 40 CFR 60.4205(b) 40 CFR 60.4211(c)	NA	NA	NA	The emergency engines shall comply with the emission standards for new nonroad CI engines in 40 CFR 60.4202 for all pollutants, for the same model year and maximum engine power.	Purchase engine certified to the emission standards in 40 CFR 60.4204(b), for the same model year and maximum engine power. The engine shall be installed and configured according to the manufacturer's emission-related specifications.

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EU113-EU115	463 Hp (345 kW) Diesel-Fired Emergency Engine - Chem-Phys Bldg 0055 617 Hp (460 kW) Diesel-Fired Emergency Engine - Chem-Phys Bldg 0055 282 Hp (175 kW) Diesel-Fired Emergency Engine - EHS Bldg 569	NA	NSPS IIII: 40 CFR 60.4209(a)	Hours	The permittee shall install non-resettable hour meters prior to startup of each engine.

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU113-115	463 Hp (345 kW) Diesel-Fired Emergency Engine - Chem-Phys Bldg 0055 617 Hp (460 kW) Diesel-Fired Emergency Engine - Chem-Phys Bldg 0055 282 Hp (175 kW) Diesel-Fired Emergency Engine - EHS Bldg 569	NA	NSPS IIII: 40 CFR 60.4214(b)	Hours	The permittee shall record the time of operation of the engine and the reason the engine was in operation during that time on a monthly basis.
		NA	401 KAR 52:020, Section 10	Hours	The permittee shall maintain records of the manufacturer's certified emissions certificate, manufacturer's written operating instructions, and any procedures developed by the permittee that are approved by the engine manufacturer, over the entire life of the engine.

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EU113-EU115	463 Hp (345 kW) Diesel-Fired Emergency Engine - Chem-Phys Bldg 0055 617 Hp (460 kW) Diesel-Fired Emergency Engine - Chem-Phys Bldg 0055 282 Hp (175 kW) Diesel-Fired Emergency Engine - EHS Bldg 569	NA	NSPS IIII: 40 CFR 60.4214(d)	NA	If the engine operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in 40 CFR 60.4211(f)(3) the permittee shall submit an annual report by March 31 of the following calendar year.
		NA	401 KAR 52:020, Section 22	Fuel Usage	Submit annual fuel usage to determine annual emissions within 30 day after the date the KyEIS emissions survey is mailed.

Section V.5: Testing Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
EU113-EU115	463 Hp (345 kW) Diesel-Fired Emergency Engine - Chem-Phys Bldg 0055 617 Hp (460 kW) Diesel-Fired Emergency Engine - Chem-Phys Bldg 0055 282 Hp (175 kW) Diesel-Fired Emergency Engine - EHS Bldg 569	NA	401 KAR 50:045, Section 1	NA	Testing shall be conducted at such times as may be required by the Cabinet.

Section V.6: Notes, Comments, and Explanations

None

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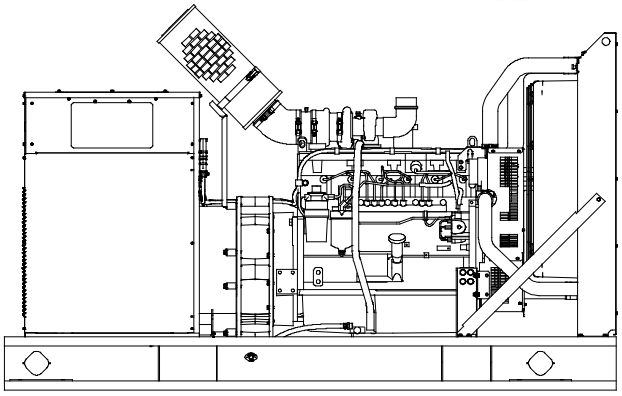
Industrial Generator Set □ 300REOZJ

208-600 V **Diesel**

Tier 3 EPA-Certified for Stationary Emergency Applications

Ratings Range

		60 Hz
Standby:	**kW**	280□300
	kVA	350□375



Standard Features

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Generator Set Ratings

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	120□240	3	60	300□375	902
	139□240	3	60	300□375	902
	220□380	3	60	280□350	532
	240□416	3	60	300□375	520
	277□480	3	60	300□375	451
	347□600	3	60	300□375	361

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Industrial Generator Set □ 300REOZJ

208-600 V **Diesel**

Alternator Specifications

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Application Data

Engine

Engine Specifications

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Engine Electrical

Engine Electrical System

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Fuel

Fuel System

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Lubrication

Lubricating System

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Application Data

Cooling

Radiator System	
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[illegible]	36 (9.5
[illegible]	265 (70
[illegible]	114 (6489
[illegible]	99.1 (5641
[illegible]	[illegible]
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* [illegible] 5 [illegible] (9 [illegible]

Operation Requirements

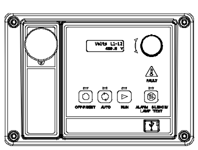
Air Requirements	
[illegible] †	396.4 (14000
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[illegible]	60.8 (3460
[illegible]	23.9 (1360

† [illegible] 1.20 [illegible] (0.075 [illegible]

Fuel Consumption**	
Diesel, Lph (gph) at % load	Standby Rating
100	84.1 (22.2
75	67.7 (17.9
50	49.7 (13.1
25	26.3 (7.0

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Controllers

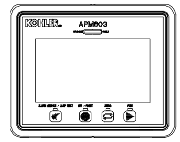


APM402 Controller

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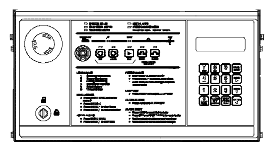


APM603 Controller

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Decision-Maker® 6000 Paralleling Controller

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© 2024 [illegible]

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Industrial Generator Set □ 300REOZJ

208-600 V **Diesel**

Standard Features

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Available Options

Circuit Breakers

Type

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Circuit Breaker Mounting

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Enclosures for Remote Mounted Circuit Breakers

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Cooling System

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Paralleling System

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Miscellaneous

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Literature

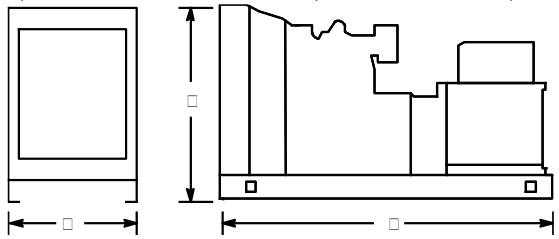
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Dimensions and Weights

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rehlko

300REOZJ

60 HZ. DIESEL INDUSTRIAL GENERATOR SET
EMISSION DATA SHEET

ENGINE INFORMATION

Model:	John Deere, 6090HFG86A	Bore:	118.4mm (4.66 in.)
Nameplate BHP @ 1800 RPM:	463	Stroke:	136mm (5.35 in.)
Type:	4-Cycle, 6 Cylinder, Inline	Displacement:	9.0 L (548 cu. in.)
Aspiration:	Turbocharged, Charge Air-Cooled		
Compression Ratio	16.0:1	EPA Family:	SJDXL09.0114
		EPA Certificate:	SJDXL09.0114-007

Table 1

PERFORMANCE DATA:	1/4 Standby	1/2 Standby	3/4 Standby	Full Standby
Engine bkW @ Stated Load	86	173	259	345
Fuel Consumption (g/kWh)	247	240	215	205
Exhaust Gas Flow (m^3/min)				64
Exhaust Temperature (°C)				497

Table 2

EXHAUST EMISSION DATA:	EPA D2 Cycle 5-mode weighted
HC (Total Unburned Hydrocarbons)	0.05
NOx (Oxides of Nitrogen as NO2)	3.80
CO (Carbon Monoxide)	0.9
PM (Particulate Matter)	0.11

Values are in g/kWh unless otherwise noted

TEST METHODS AND CONDITIONS

The emission data listed is measured from a laboratory test engine according to the test procedures of 40 CFR 89 or 40 CFR 1039, as applicable. The test engine is intended to represent nominal production hardware, and there is no guarantee that every production engine will have identical test results. The family parent data represents multiple ratings and this data may have been collected at a different engine speed and load. Emission results may vary due to engine manufacturing tolerances, engine operating conditions, fuels used, alternate test methods, or other conditions.

Data and specifications subject to change without notice.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2025 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: **Deere & Company**
(U.S. Manufacturer or Importer)

Certificate Number: SJDXL09.0114-007

Effective Date:
06/17/2024

Expiration Date:
12/31/2025

Byron J. Bunker, Division Director
Compliance Division

Issue Date:
06/17/2024

Revision Date:
N/A

Model Year: 2025
Manufacturer Type: Original Engine Manufacturer
Engine Family: SJDXL09.0114

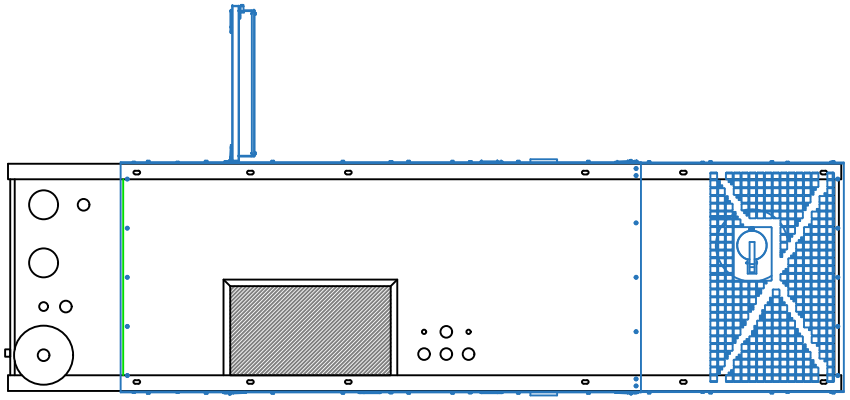
Mobile/Stationary Indicator: Stationary
Emissions Power Category: 225<=kW<450
Fuel Type: Diesel
After Treatment Devices: No After Treatment Devices Installed
Non-after Treatment Devices: Electronic Control, Smoke Puff Limiter, Engine Design Modification, Non-standard Non-After Treatment Device Installed

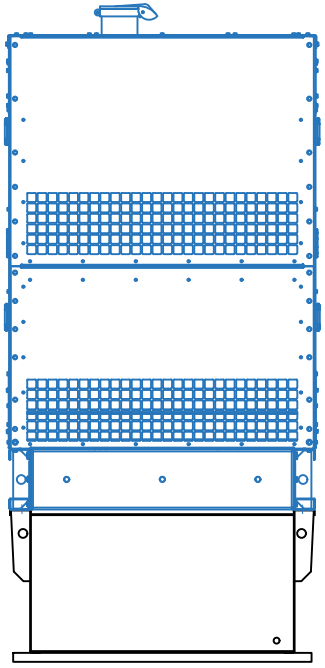
Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

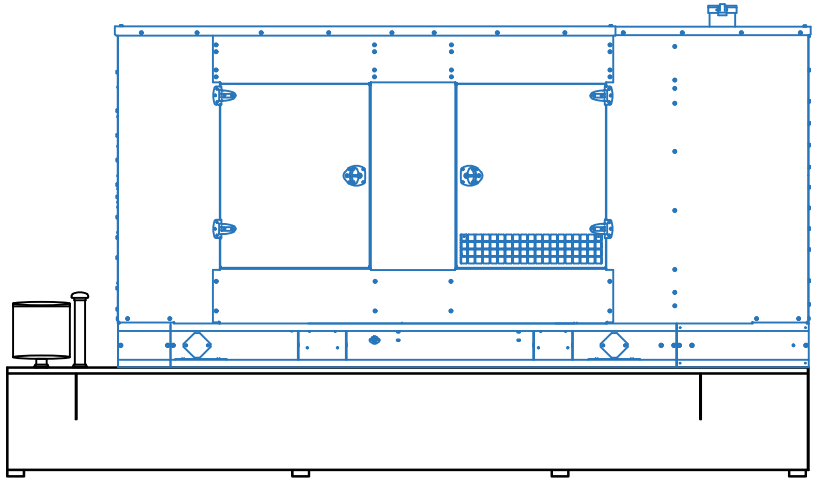
This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.







TANK NOTES:

-TANK DIMS: 187"L x 51"W X 24.5" H
-TANK WEIGHT: 3,550 LBS.

-36" x 20" SIDE STUB
-1.5" INSPECTION CHANNEL
-5 GALLON SPILL FILL BUCKET
-HIGH FUEL ALARM

-TANK CAPACITY (GALLONS):
547 USABLE

GENERATOR NOTES:

-KOHLER 230-300KW JD W/ FCTY ENCL.
-162.3"L x 52.5"W x 84.7"H

DRAWING: ADV-7644 & ADV-7900

REV.	DATE	DESCRIPTION
00	06/24/25	INITIAL
01	07/11/25	INCREASED STUB LENGTH 16" & HEIGHT BY 1"

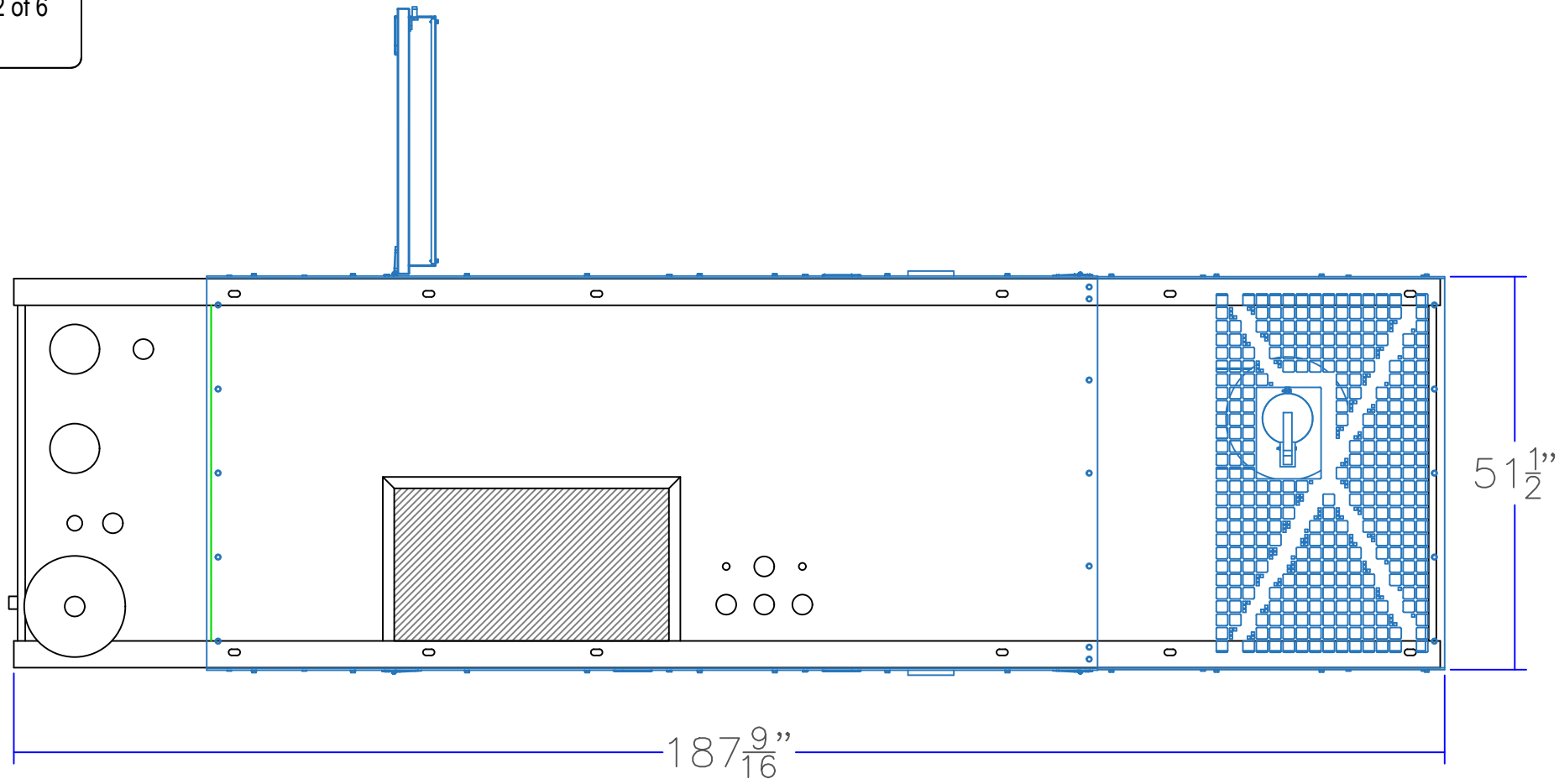
CUSTOMER:
NIXON POWER SERVICES

PROJECT:
UK - 546GAL UL142 FUEL TANK

Drawn by:
A.S.

Approved by:

Custom Site Solutions

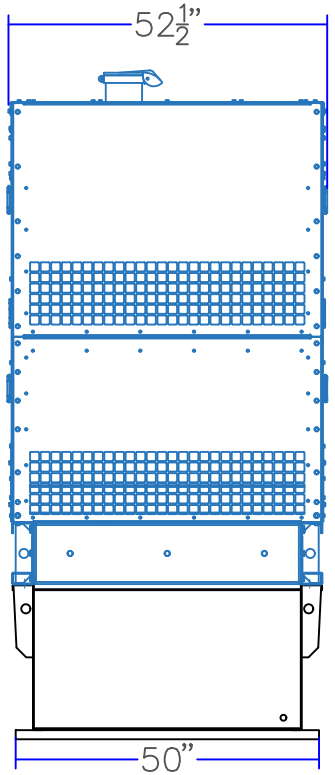


TOP VIEW

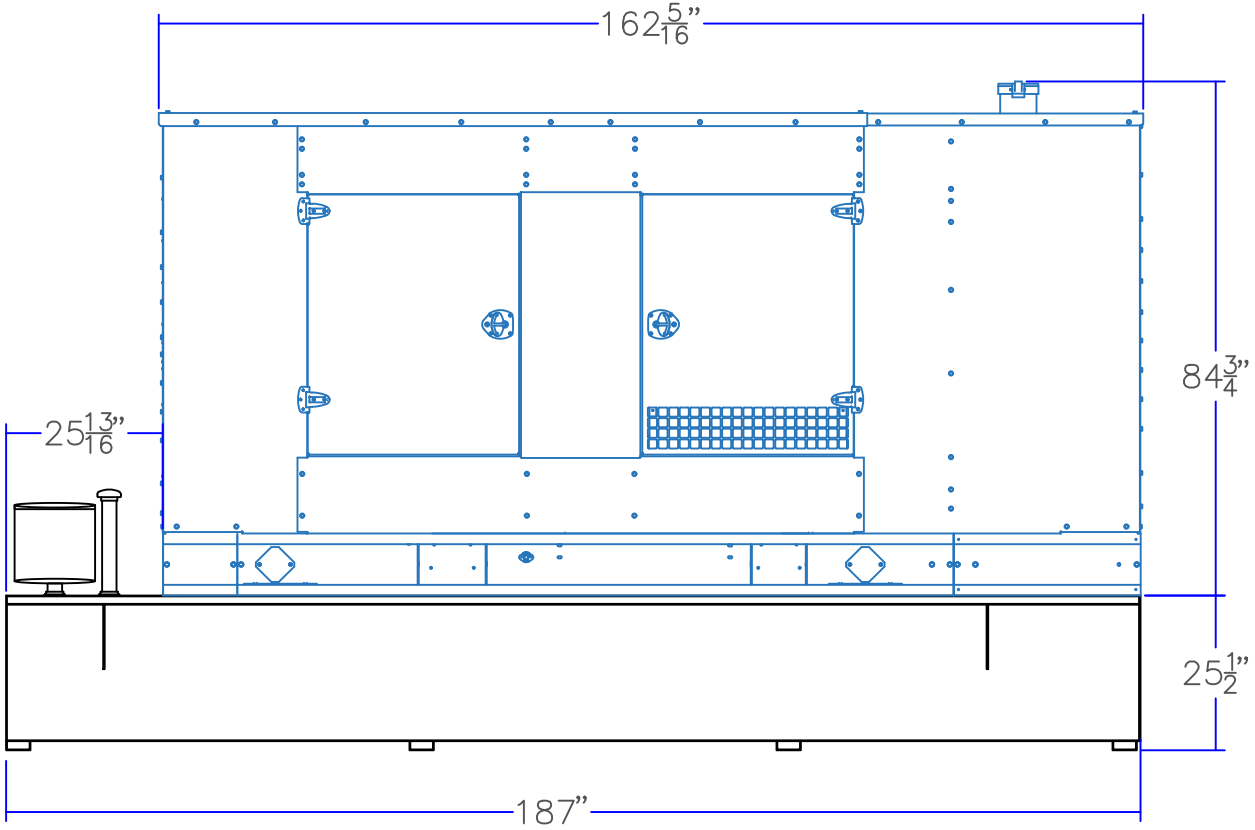
PROJECT NOTES:

Custom Site Solutions	
Project Name:	UK - 546GAL UL142 FUEL TANK
Project Address:	
Customer:	NIXON POWER
Work Order:	WO#001152

Approved By:
Approval Date:
Signature:



ASSEMBLY REAR VIEW



ASSEMBLY SIDE VIEW

PROJECT NOTES:

Custom Site Solutions	
Project Name:	UK - 546GAL UL142 FUEL TANK
Project Address:	
Customer:	NIXON POWER
Work Order:	WO#001152

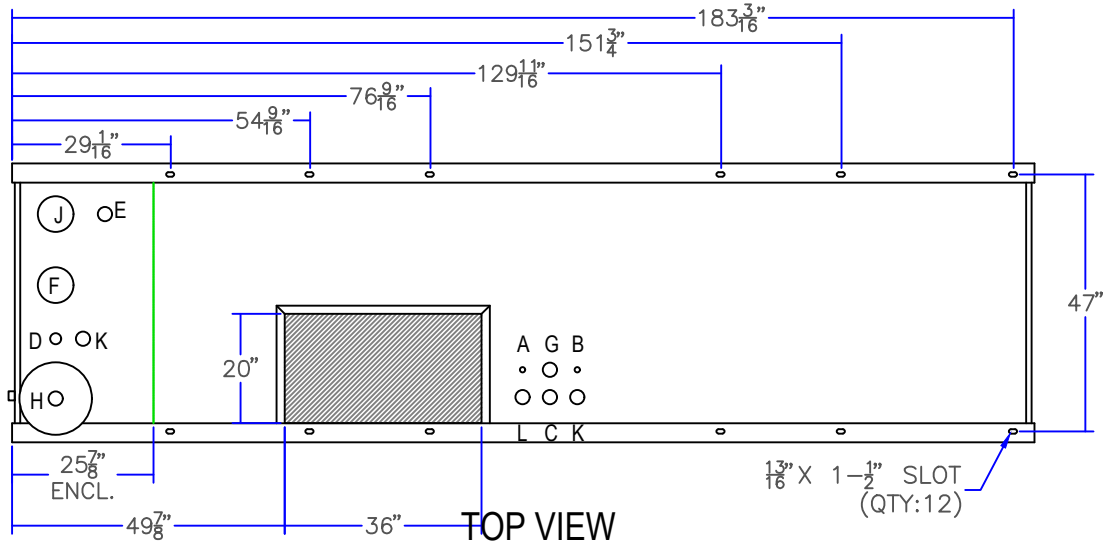
Approved By:
Approval Date:
Signature:

Sheet 4 of 6

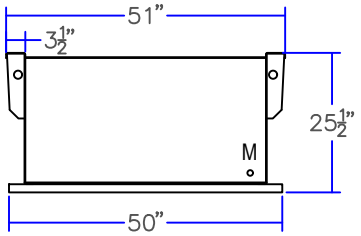
QTY: 1

INNER TANK HEIGHT: 20.8125

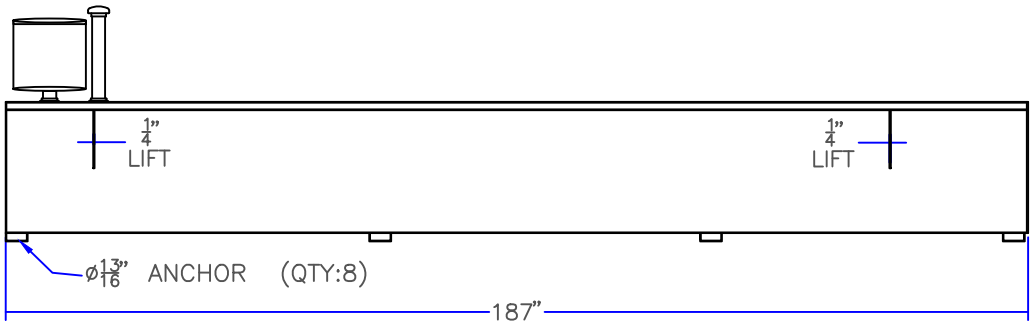
COMPONENT	DESCRIPTION
A	1/2" FUEL SUPPLY DROP TUBE
B	1/2" FUEL RETURN DROP TUBE
C	2" NPT HIGH FUEL ALARM (5 3/16" @ 90%)
D	1 1/2" NPT FUEL GAUGE
E	2" NPT NORMAL VENT
F	6" NPT PRIMARY EMERGENCY VENT PER UL142
G	2" NPT BASIN SWITCH
H	2" NPT FUEL FILL SPILL BUCKET
J	6" NPT SECONDARY EMERGENCY VENT PER UL142
K	(2)2" NPT SPARE PORT
L	2" NPT LOW FUEL ALARM (19 1/16" @ 25%)
M	1/2" NPT BASIN DRAIN



TOP VIEW



REAR VIEW



SIDE VIEW

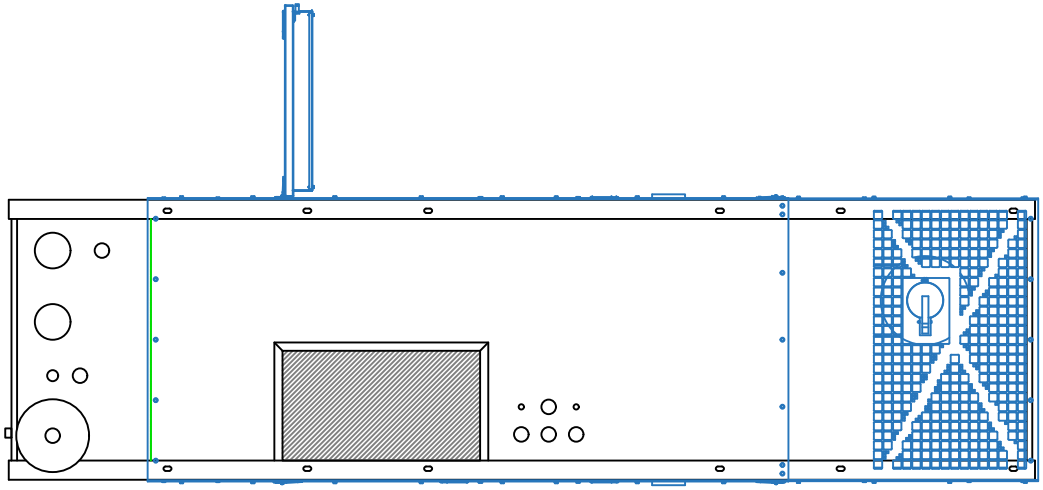
PROJECT NOTES:

-1.5" INSPECTION CHANNEL
-5 GALLON SPILL FILL BUCKET
-HIGH FUEL ALARM

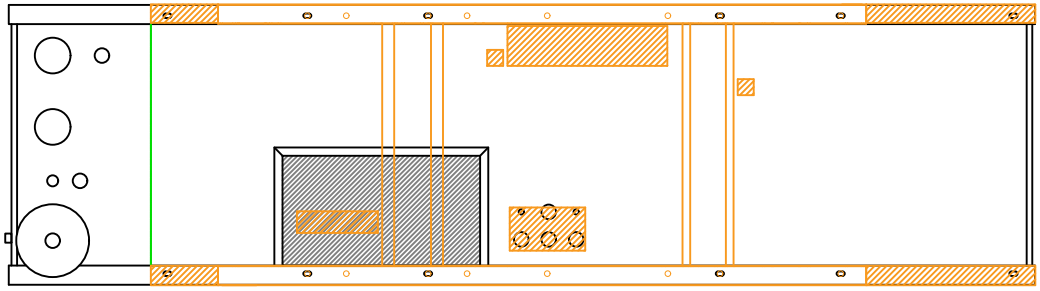
Custom Site Solutions

Project Name:	UK - 546GAL UL142 FUEL TANK
Project Address:	
Customer:	NIXON POWER
Work Order:	WO#001152

Approved By:	
Approval Date:	
Signature:	



TANK TOP VIEW (W/ ENCLOSURE)



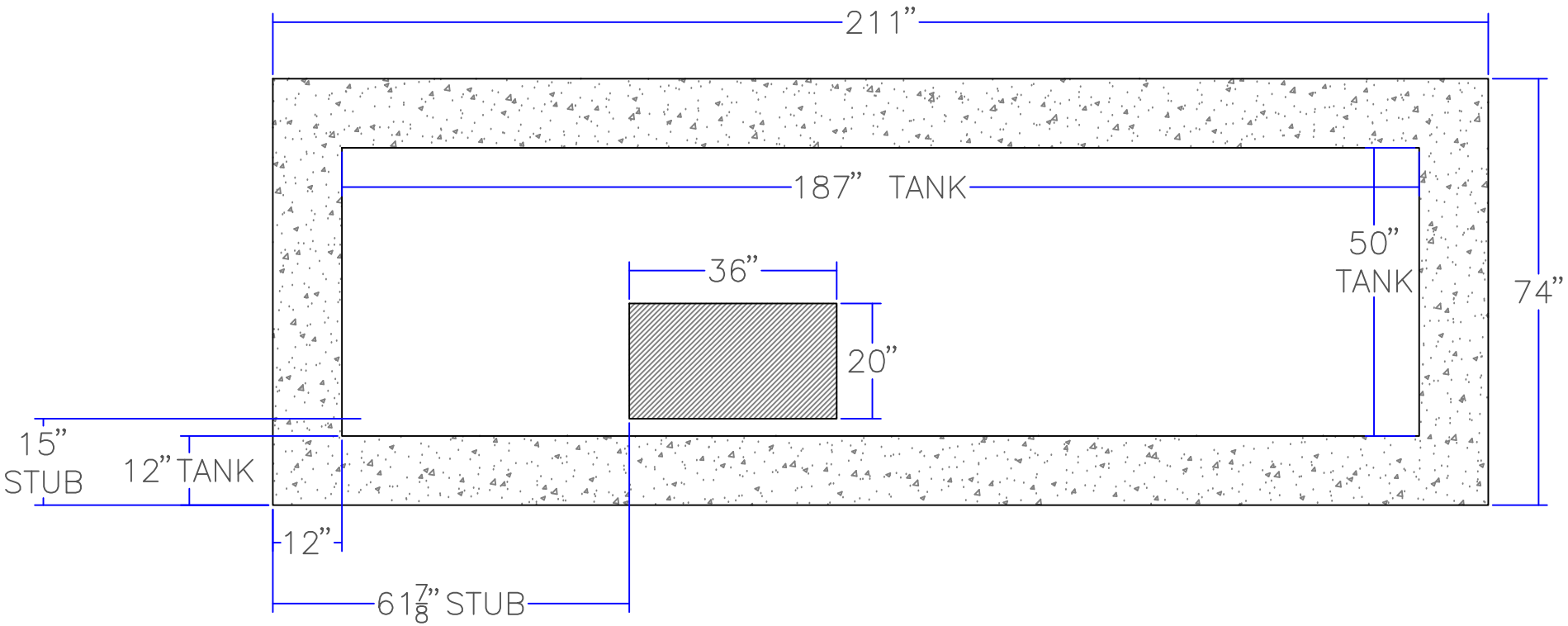
TANK TOP VIEW (W/ GENERATOR)

PROJECT NOTES:

Custom Site Solutions

Project Name:	UK - 546GAL UL142 FUEL TANK
Project Address:	
Customer:	NIXON POWER
Work Order:	WO#001152

Approved By:
Approval Date:
Signature:



PROJECT NOTES:

SUGGESTED PAD LAYOUT

Custom Site Solutions

Project Name:	UK - 546GAL UL142 FUEL TANK
Project Address:	
Customer:	NIXON POWER
Work Order:	WO#001152

Approved By:	
Approval Date:	
Signature:	

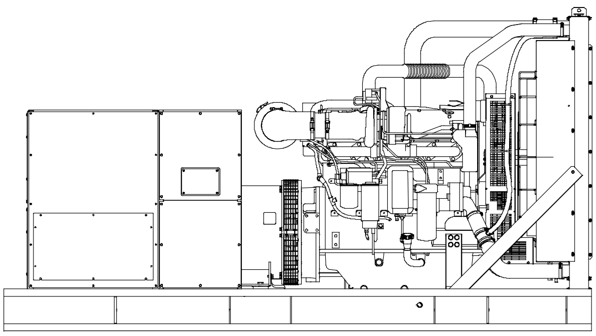
Industrial Generator Set [illegible] 400REOZJD

208-600 V **Diesel**

Tier 3 EPA-Certified for Stationary Emergency Applications

Ratings Range

		60 Hz
Standby:	**kW**	315/410
	kVA	394/513



Standard Features

- R[illegible]
- [illegible] 15940 [illegible] M D975.
- [illegible]
- [illegible] 60 [illegible] 2200 [illegible]
- [illegible]
- [illegible] 60 [illegible] 110 [illegible] 1 [illegible]
- [illegible]
- [illegible]
  - [illegible] M [illegible]
  - [illegible]
- [illegible]
  - R[illegible] 3.
  - [illegible]
  - [illegible]
  - [illegible]
- M[illegible]

Generator Set Ratings

Alternator	Voltage	Ph	Hz	150°C Rise Standby Rating kW/kVA	150°C Rise Standby Rating Amps	130°C Rise Standby Rating kW/kVA	130°C Rise Standby Rating Amps
4M4021	120/208	3	60	400/500	1388	380/475	1318
	127/220	3	60	410/513	1345	390/488	1279
	139/240	3	60	410/513	1233	400/500	1203
	220/380	3	60	315/394	598	315/394	598
	240/416	3	60	400/500	694	380/475	659
	277/480	3	60	410/513	616	405/506	609
5M4027[illegible]	120/208	3	60	410/513	1423	410/513	1423
	127/220	3	60	410/513	1345	410/513	1345
	139/240	3	60	410/513	1233	410/513	1233
	220/380	3	60	405/506	769	405/506	769
	240/416	3	60	410/513	711	410/513	711
	277/480	3	60	410/513	616	410/513	616
5M4028	120/208	3	60	410/513	1423	410/513	1423
	127/220	3	60	410/513	1345	410/513	1345
	139/240	3	60	410/513	1233	410/513	1233
	220/380	3	60	410/513	779	410/513	779
	240/416	3	60	410/513	711	410/513	711
	277/480	3	60	410/513	616	410/513	616
4M4266[illegible]	347/600	3	60	410/513	493	410/513	493
5M4272	347/600	3	60	410/513	493	410/513	493

[illegible] D [illegible]

R[illegible] 0.8 [illegible] R[illegible] 8528 [illegible] 3046 [illegible] 101 [illegible]

[illegible] 2024 D[illegible]

D[illegible]
200 [illegible] R[illegible] 53044 [illegible]
[illegible]
[illegible] 1-800-544-2444 [illegible]

Alternator Specifications

Specifications	Alternator
[illegible]	4 [illegible]
[illegible]	[illegible]
[illegible]	10 [illegible] 12 [illegible] 4 [illegible] 600 [illegible]
[illegible]	[illegible]
[illegible]	[illegible] M [illegible] M [illegible] 1
M[illegible]	[illegible]
[illegible]	130 [illegible] 150 [illegible]
[illegible]	1 [illegible]
[illegible]	[illegible] D [illegible]
[illegible]	[illegible]
R[illegible]	125[illegible]
[illegible]	[illegible] D [illegible]
[illegible]	100[illegible] R[illegible]
[illegible]	100[illegible] R[illegible]
[illegible]	(35[illegible]
480 [illegible] 4M4021 (12 [illegible]	1725
480 [illegible] 5M4027 (12 [illegible]	2200
480 [illegible] 5M4028 (10 [illegible]	2550
600 [illegible] 4M4266 (4 [illegible]	1300
600 [illegible] 5M4272 (4 [illegible]	1750

- [illegible] M [illegible] M [illegible] 1 [illegible]
- [illegible] 300 [illegible] 10 [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Application Data

Engine

Engine Specifications

[illegible]	[illegible] D [illegible]
[illegible]	6135[illegible] 84[illegible]
[illegible]	4[illegible]
[illegible]	6[illegible]
D[illegible]	13.5 (824[illegible]
[illegible]	132 [illegible] 165 (5.2 [illegible] 6.5[illegible]
[illegible]	16.0[illegible]1
[illegible]	594 (1950[illegible]
M[illegible]	7[illegible] R[illegible]
R[illegible]	1800
M[illegible]	460 (617[illegible]
[illegible]	[illegible]
[illegible]	
[illegible]	[illegible]
[illegible]	[illegible] D [illegible] 15
[illegible]	[illegible]
[illegible]	[illegible] 0.25[illegible]
[illegible]	[illegible]
[illegible]	Dr[illegible]

Exhaust

Exhaust System

[illegible]	Dr[illegible]
[illegible]	74 (2606[illegible]
[illegible]	527 (981[illegible]
M[illegible]	M[illegible]. 4 (1.2[illegible] M[illegible]. 7.5 (2.2[illegible]
[illegible]	[illegible] D [illegible]

Engine Electrical

Engine Electrical System

[illegible]	
[illegible]	[illegible]
[illegible] (D[illegible]	24
[illegible]	60
[illegible] (D[illegible]	24
[illegible]	[illegible] 925
[illegible] (D[illegible]	12

Fuel

Fuel System

[illegible]	13 (0.50[illegible]
[illegible]	10 (0.38[illegible]
M[illegible]	[illegible] 2.1 (6.8[illegible]
M[illegible]	191.3 (50.5[illegible]
M[illegible]	35 (10.3[illegible]
[illegible]	[illegible]
[illegible]	
[illegible]	2 M[illegible] 98[illegible]
[illegible]	10 M[illegible]
[illegible]	[illegible]
R[illegible]	[illegible] 2 D[illegible] RD

Lubrication

Lubricating System

[illegible]	[illegible]
[illegible]	40.0 (42.3[illegible]
[illegible]	42.0 (44.4[illegible]
[illegible]	1 [illegible]
[illegible]	[illegible]

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D[illegible]
200 [illegible] R[illegible] 53044 [illegible]
[illegible]
[illegible] 1-800-544-2444 [illegible]

Application Data

Cooling

Radiator System

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Operation Requirements

Air Requirements

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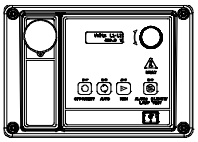
† □r□ d□□□□□□□ □ 1.20 □□□□□ ^{3} (0.075 □□□ □□^{3}□

Fuel Consumption**

Diesel, Lph (gph) at % load	Standby Rating
100□	116.9 (30.9□
75□	90.9 (24.0□
50□	63.8 (16.8□
25□	34.2 (9.0□

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Controllers

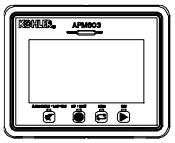


APM402 Controller

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APM603 Controller

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Industrial Generator Set □ 400REOZJD

208-600 V **Diesel**

Standard Features

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Available Options

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Enclosures for Remote Mounted Circuit Breakers
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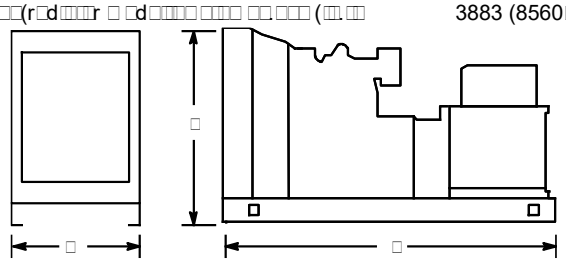
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400REOZJC

60 HZ. DIESEL INDUSTRIAL GENERATOR SET
EMISSION DATA SHEET

ENGINE INFORMATION

Model:	John Deere, 6135HF485S	Bore:	132mm (5.2 in.)
Nameplate BHP @ 1800 RPM:	617	Stroke:	165mm (6.5 in.)
Type:	4-Cycle, 6 Cylinder, Inline	Displacement:	13.5 L (824 cu. in.)
Aspiration:	Turbocharged, Charge Air-Cooled		
Compression Ratio	16.0:1	EPA Family:	SJDXL13.5103
		EPA Certificate:	SJDXL13.5103-010

Table 1

PERFORMANCE DATA:	1/4 Standby	1/2 Standby	3/4 Standby	Full Standby
Engine bkW @ Stated Load	115	230	345	460
Fuel Consumption (g/kWh)	237	212	206	209
Exhaust Gas Flow (m^3/min)				81
Exhaust Temperature (°C)				471

Table 2

EXHAUST EMISSION DATA:	EPA D2 Cycle 5-mode weighted
HC (Total Unburned Hydrocarbons)	0.11
NOx (Oxides of Nitrogen as NO2)	3.31
CO (Carbon Monoxide)	0.6
PM (Particulate Matter)	0.10

Values are in g/kWh unless otherwise noted

TEST METHODS AND CONDITIONS

The emission data listed is measured from a laboratory test engine according to the test procedures of 40 CFR 89 or 40 CFR 1039, as applicable. The test engine is intended to represent nominal production hardware, and there is no guarantee that every production engine will have identical test results. The family parent data represents multiple ratings and this data may have been collected at a different engine speed and load. Emission results may vary due to engine manufacturing tolerances, engine operating conditions, fuels used, alternate test methods, or other conditions.

Data and specifications subject to change without notice.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2025 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: **Deere & Company**
(U.S. Manufacturer or Importer)

Certificate Number: **SJDXL13.5103-010**

Effective Date: 06/17/2024

Expiration Date: 12/31/2025

Byron J. Bunker, Division Director
Compliance Division

Issue Date: 06/17/2024

Revision Date: N/A

Model Year: 2025
Manufacturer Type: Original Engine Manufacturer
Engine Family: SJDXL13.5103

Mobile/Stationary Indicator: Stationary
Emissions Power Category: 225<=kW<450
Fuel Type: Diesel
After Treatment Devices: No After Treatment Devices Installed
Non-after Treatment Devices: Electronic Control, Smoke Puff Limiter, Non-standard Non-After Treatment Device Installed, Electronic/Electric EGR - Cooled, Engine Design Modification

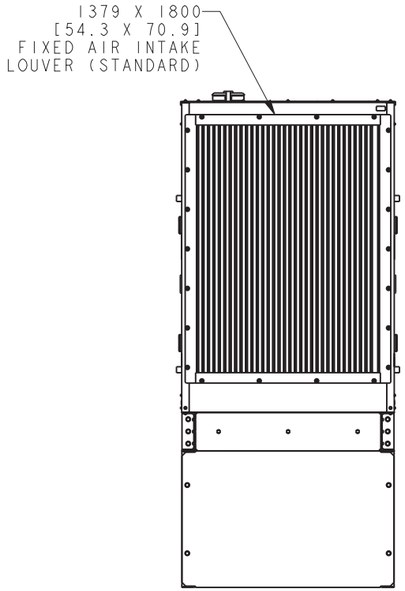
Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

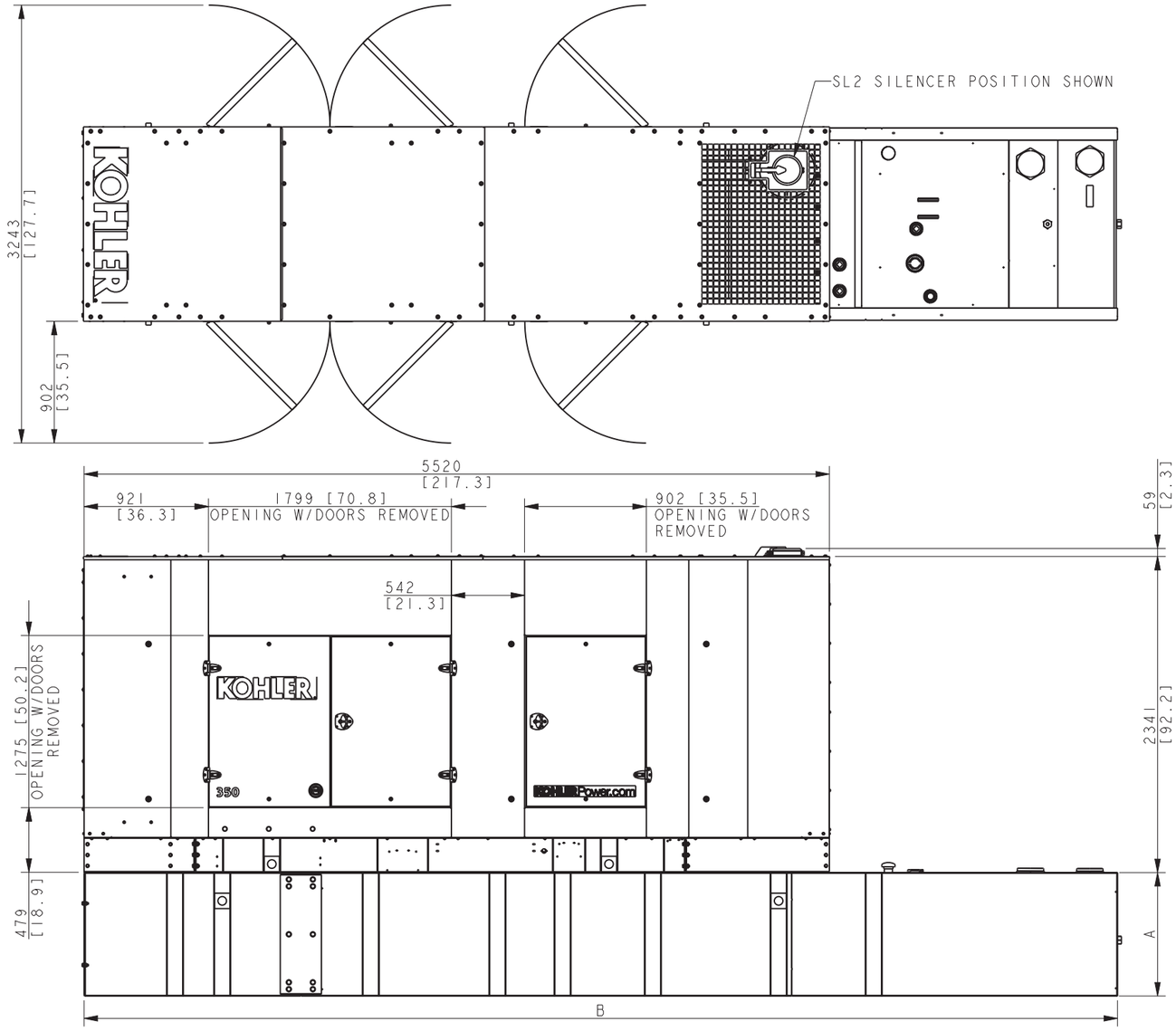
This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

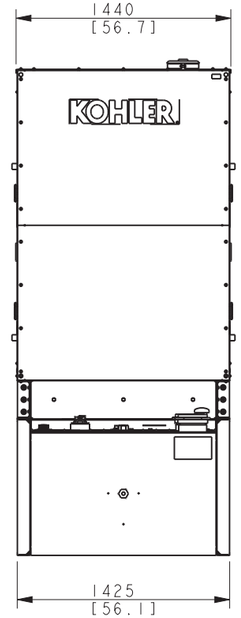
It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

The actual engine power may lie outside the limits of the Emissions Power Category shown above. See the certificate application for details.







TANK INFORMATION

LITERS [GALLONS] MIN HOURS	GENSETS	DIM A MM [INCH]	DIM B MM [INCH]	TANK WEIGHT KG [LBS] (NO FUEL)
1530 [404] 12 HOURS	350-400KW	406.4 [16.0]	5760.8[226.8]	1110 [2446]
1771 [468] 12 HOURS	500KW	457.2 [18.0]	5760.8[226.8]	1158 [2554]
2930 [774] 24 HOURS	350-400KW	762.0 [30.0]	5760.8[226.8]	1401 [3089]
3384 [894] 24 HOURS	500KW	838.2 [33.0]	5760.8[226.8]	1484 [3271]
4394 [1161] 36 HOURS	350-400KW	914.4 [36.0]	6459.8[254.3]	1789 [3945]
5047 [1333] 36 HOURS	500KW	914.4 [36.0]	7094.8[279.3]	1986 [4379]
1530 [404] 12 HOURS STATE	350-400KW	381.0 [15.0]	6713.8[264.3]	1299 [2864]
1771 [468] 12 HOURS STATE	500KW	431.8 [17.0]	6713.8[264.3]	1333 [2939]
2930 [774] 24 HOURS STATE	350-400KW	660.4 [26.0]	6713.8[264.3]	1547 [3411]
3384 [894] 24 HOURS STATE	500KW	736.6 [29.0]	6713.8[264.3]	1630 [3594]
4394 [1161] 36 HOURS STATE	350-400KW	914.4 [36.0]	6891.6[271.3]	1847 [4072]
5047 [1333] 36 HOURS STATE	500KW	914.4 [36.0]	7653.6[301.3]	2094 [4616]

350-500KW REOZJC/D
STEEL & ALUMINUM ENCL.
12 - 36 HOUR TANKS

350-500 REOZJC/D	KG [LBS]
STEEL SOUND L2 ENCLOSURE WEIGHT	1000 [2205] APPROX
ALUM. SOUND L2 ENCLOSURE WEIGHT	590 [1300] APPROX
STEEL SOUND L1 ENCLOSURE WEIGHT	870 [1920] APPROX
ALUM. SOUND L1 ENCLOSURE WEIGHT	460 [1015] APPROX
STEEL WEATHER ENCLOSURE WEIGHT	850 [1875] APPROX

REV	DATE	ON COMPOSITE DWGS, SEE PART NO. FOR REVISION LEVEL	BY
-	25NOV2019	NEW DRAWING [CT200393]	YBY
A	17AUG2021	SEE SHEET 6 & 7 [CT214138]	RNN
B	1NOV2021	SHEET 8 ADDED; SEE SHEET 7 & 8 [CT215771]	SAK
C	14DEC2021	SHEET 9 & 10 ADDED [CT216616]	MVT

DO NOT SCALE. REFERENCE THE MODEL FOR ALL UNSPECIFIED DIMENSIONS

THIRD ANGLE PROJECTION

APPROVALS		DATE
DRAWN	YBY	25NOV2019
CHECKED	KJB	25NOV2019
APPROVED	DMS	25NOV2019

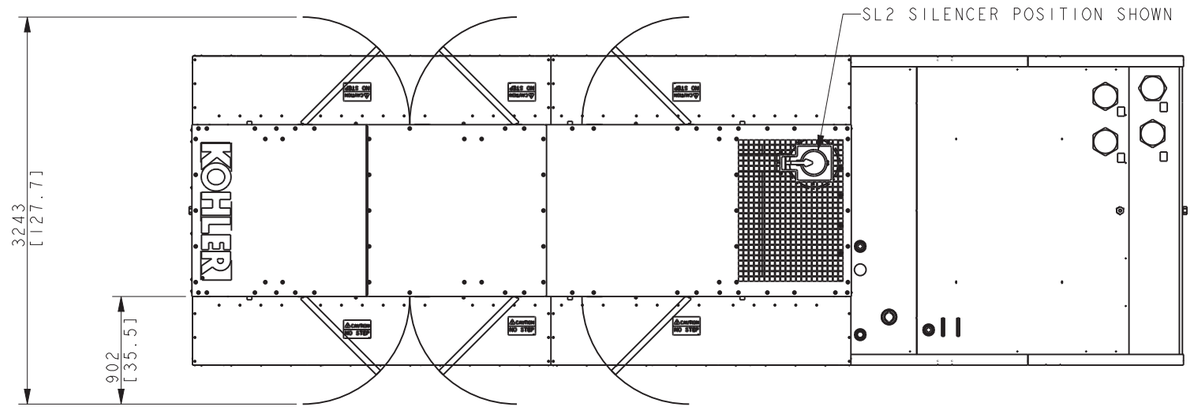
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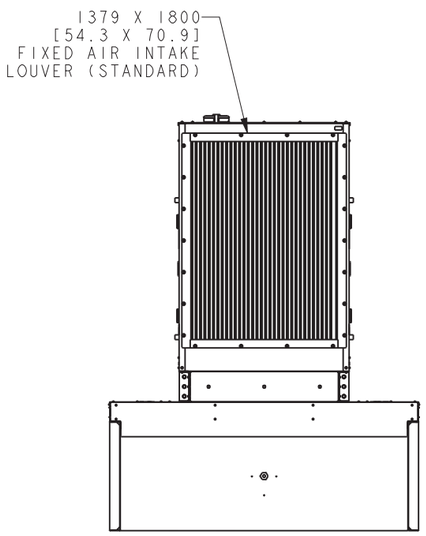
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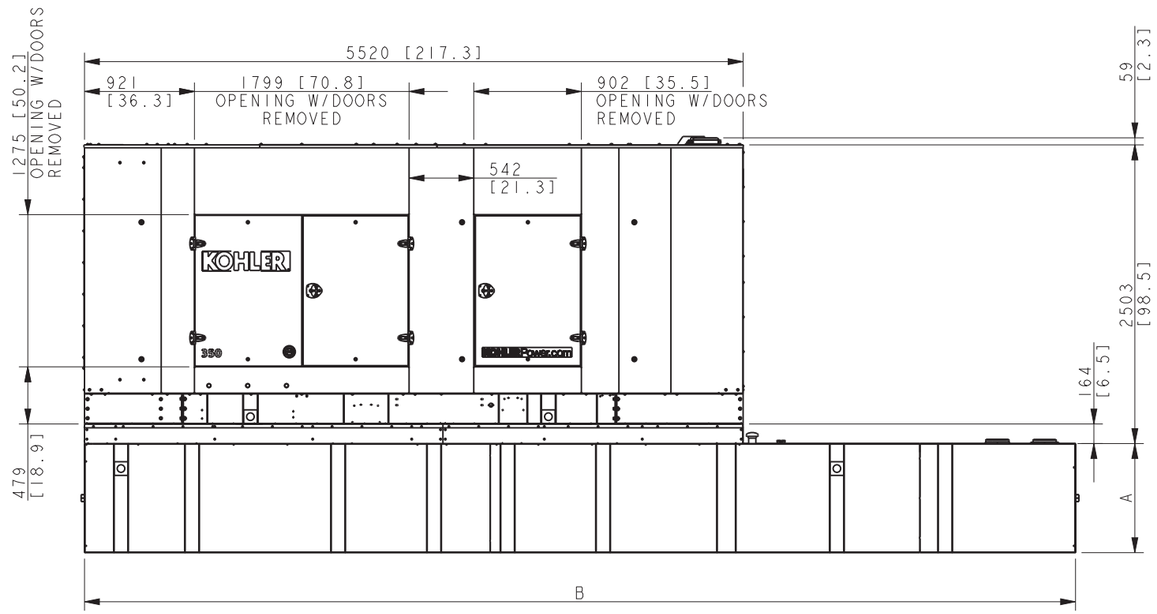
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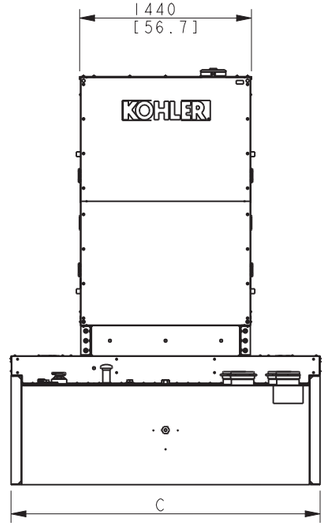
SCALE 0.05 | CAD NO. | SHEET 1 of 10

DWG NO. ADV-9189 | D









TANK INFORMATION

LITERS [GALLONS] MIN HOURS	GENSETS	DIM A MM [INCH]	DIM B MM [INCH]	DIM C MM [INCH]	TANK WEIGHT KG [LBS] (NO FUEL)
5042 [1332] 48 HOURS	350KW	711.2 [28.0]	5850.1 [230.3]	1981.2 [78.0]	2751 [6064]
5818 [1537] 48 HOURS	400KW	812.8 [32.0]	5850.1 [230.3]		2887 [6364]
6651 [1757] 48 HOURS	500KW	914.4 [36.0]	5850.1 [230.3]		3029 [6678]
5061 [1337] 48 HOURS STATE	350KW	635.0 [25.0]	6282 [247.3]		2910 [6416]
5852 [1546] 48 HOURS STATE	400KW	711.2 [28.0]	6282 [247.3]		3040 [6702]
6681 [1765] 48 HOURS STATE	500KW	812.8 [32.0]	6282 [247.3]		3184 [7020]
7510 [1984] 72 HOURS	350KW	762.0 [30.0]	5850.1 [230.3]	2590.8 [102.0]	3486 [7686]
8695 [2297] 72 HOURS	400KW	889.0 [35.0]	5850.1 [230.3]		3656 [8061]
9971 [2634] 72 HOURS	500KW	914.4 [36.0]	6028 [237.3]		4021 [8865]
7537 [1991] 72 HOURS STATE	350KW	660.4 [26.0]	6282 [247.3]		3729 [8222]
8748 [2311] 72 HOURS STATE	400KW	762.0 [30.0]	6282 [247.3]		3894 [8585]
9993 [2640] 72 HOURS STATE	500KW	863.6 [34.0]	6282 [247.3]		4063 [8958]
9993 [2640] 96 HOURS STATE	350KW		6282 [247.3]		4063 [8958]
11602 [3065] 96 HOURS STATE	400KW		7264.4 [286.0]		4426 [9758]
13325 [3520] 96 HOURS STATE	500KW		8305.8 [327.0]		4862 [10719]

350-500KW REOZJC/D
STEEL & ALUMINUM ENCL.
48 - 96 HOUR TANKS

350-500 REOZJC/D	KG [LBS]
STEEL SOUND L2 ENCLOSURE WEIGHT	1000 [2205] APPROX
ALUM. SOUND L2 ENCLOSURE WEIGHT	590 [1300] APPROX
STEEL SOUND L1 ENCLOSURE WEIGHT	870 [1920] APPROX
ALUM. SOUND L1 ENCLOSURE WEIGHT	460 [1015] APPROX
STEEL WEATHER ENCLOSURE WEIGHT	850 [1875] APPROX

REV	DATE	ON COMPOSITE DWGS, SEE PART NO. FOR REVISION LEVEL	BY
-	25NOV2019	NEW DRAWING [CT200393]	YBY
A	17AUG2021	SEE SHEET 6 & 7 [CT214138]	RNN
B	1NOV2021	SEE SHEET 7 & 8 [CT215771]	SAK
C	14DEC2021	SEE SHEET 1, 9 & 10 [CT216616]	MVT

DO NOT SCALE. REFERENCE THE MODEL FOR ALL UNSPECIFIED DIMENSIONS

THIRD ANGLE PROJECTION

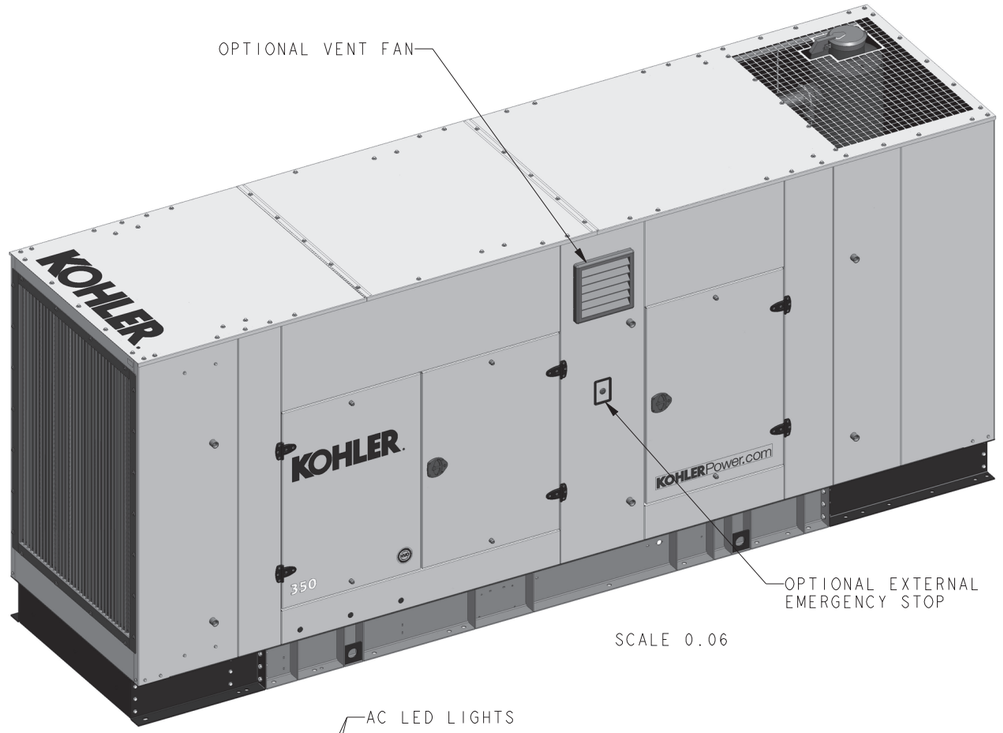
APPROVALS		DATE
DRAWN	YBY	25NOV2019
CHECKED	KJB	25NOV2019
APPROVED	DMS	25NOV2019

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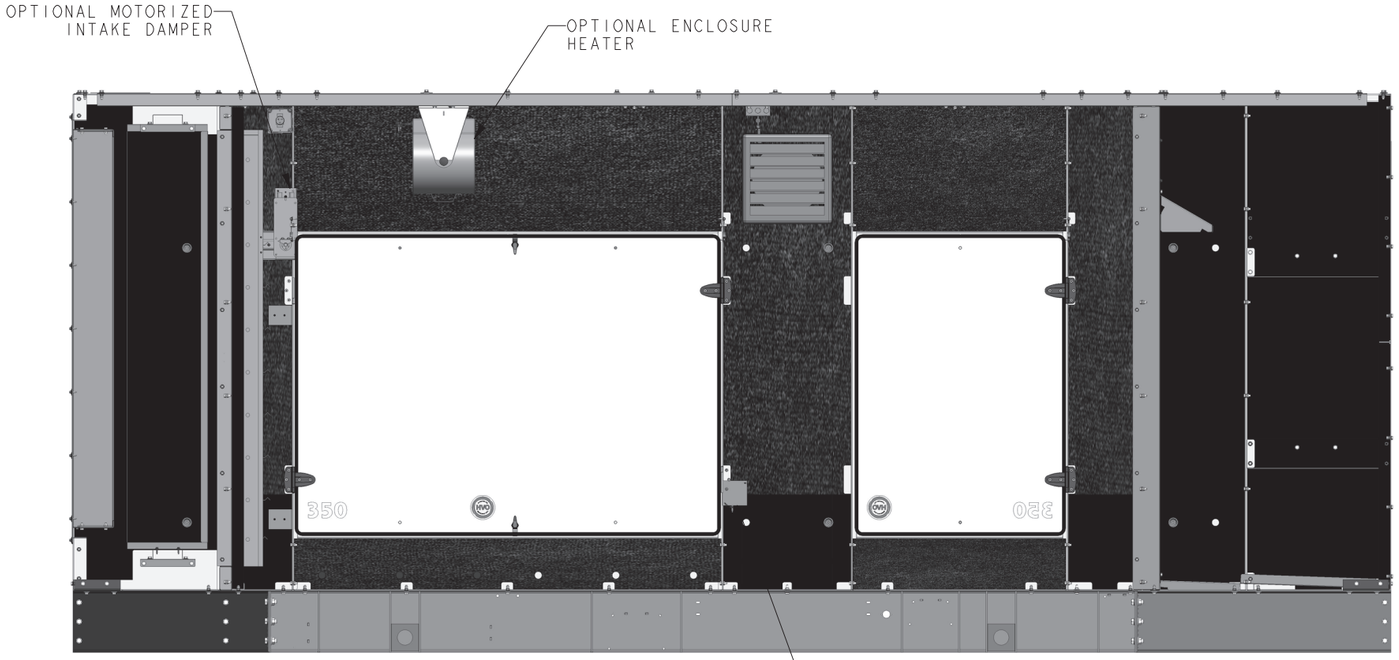
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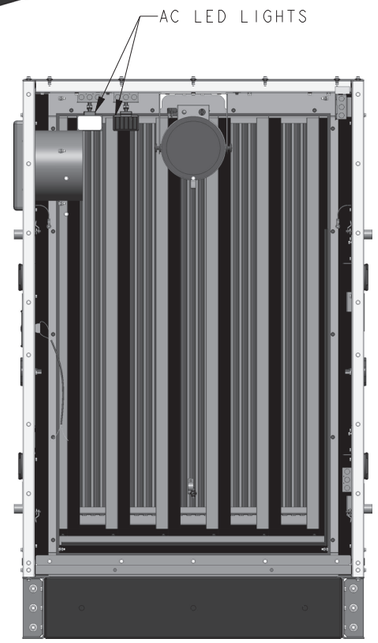
SCALE 0.04 | CAD NO. | SHEET 2 of 10

DWG NO. ADV-9189 | D



SCALE 0.06





350-500KW REOZJC/D
ENCLOSURE OPTIONAL ACCESSORIES

REV	DATE	ON COMPOSITE DWGS, SEE PART NO. FOR REVISION LEVEL	BY
-	25NOV2019	NEW DRAWING [CT200393]	YBY
A	17AUG2021	SEE SHEET 6 & 7 [CT214138]	RNN
B	1NOV2021	SEE SHEET 7 & 8 [CT215771]	SAK
C	14DEC2021	SEE SHEET 1, 9 & 10 [CT216616]	MVT

DO NOT SCALE. REFERENCE THE MODEL FOR ALL UNSPECIFIED DIMENSIONS

THIRD ANGLE PROJECTION

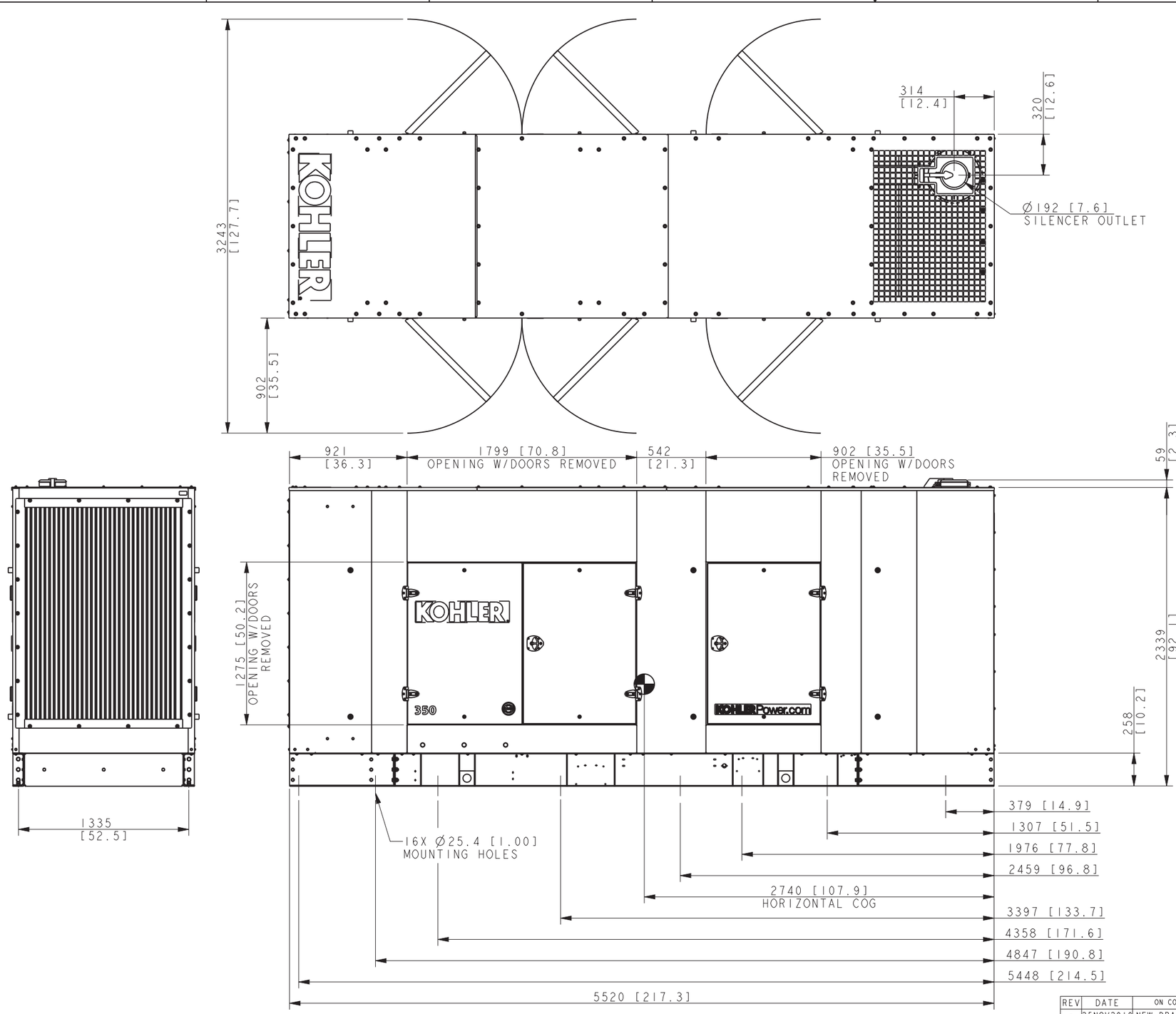
APPROVALS		DATE
DRAWN	YBY	25NOV2019
CHECKED	KJB	25NOV2019
APPROVED	DMS	25NOV2019

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TITLE: DIMENSION PRINT,
350-500REOZJC/D ENCL & TANKS

SCALE 0.08 | CAD NO. | SHEET 3 of 10

DWG NO. ADV-9189 | D



350-500 REOZJC/D	KG [LBS]
STEEL SOUND L2 ENCLOSURE WEIGHT	1000 [2205] APPROX
ALUM. SOUND L2 ENCLOSURE WEIGHT	590 [1300] APPROX

REV	DATE	ON COMPOSITE DWGS, SEE PART NO. FOR REVISION LEVEL	BY
-	25NOV2019	NEW DRAWING [CT200393]	YBY
A	17AUG2021	SEE SHEET 6 & 7 [CT214138]	RNN
B	1NOV2021	SEE SHEET 7 & 8 [CT215771]	SAK
C	14DEC2021	SEE SHEET 1, 9 & 10 [CT216616]	MVT

DO NOT SCALE. REFERENCE THE MODEL FOR ALL UNSPECIFIED DIMENSIONS

THIRD ANGLE PROJECTION

APPROVALS		DATE
DRAWN	YBY	25NOV2019
CHECKED	KJB	25NOV2019
APPROVED	DMS	25NOV2019

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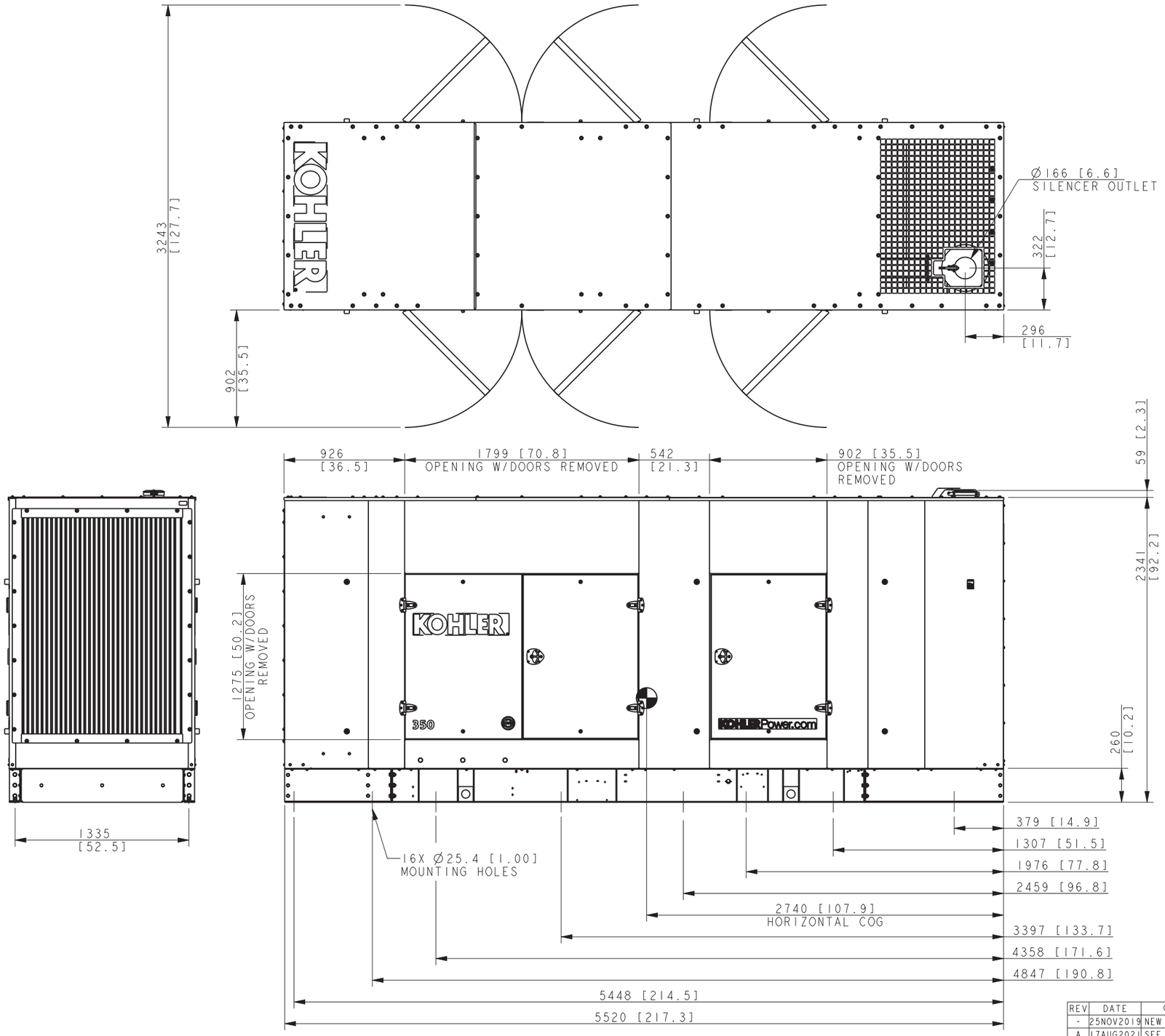
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TITLE: DIMENSION PRINT, 350-500REOZJC/D ENCL & TANKS

SCALE 0.06 | CAD NO. | SHEET 4 of 10

DWG NO. ADV-9189 | D

350-500KW REOZJC/D
STEEL & ALUMINUM SL2 ENCL.



350-500 REOZJC/D	KG [LBS]
STEEL SOUND LI ENCLOSURE WEIGHT	870 [1920] APPROX
ALUM. SOUND LI ENCLOSURE WEIGHT	460 [1015] APPROX
STEEL WEATHER ENCLOSURE WEIGHT	850 [1875] APPROX

REV	DATE	ON COMPOSITE DWGS, SEE PART NO. FOR REVISION LEVEL	BY
-	25NOV2019	NEW DRAWING [CT200393]	YBY
A	17AUG2021	SEE SHEET 6 & 7 [CT214138]	RNN
B	1NOV2021	SEE SHEET 7 & 8 [CT215771]	SAK
C	14DEC2021	SEE SHEET 1, 9 & 10 [CT216616]	MVT

DO NOT SCALE. REFERENCE THE MODEL FOR ALL UNSPECIFIED DIMENSIONS

THIRD ANGLE PROJECTION

APPROVALS		DATE
DRAWN	YBY	25NOV2019
CHECKED	KJB	25NOV2019
APPROVED	DMS	25NOV2019

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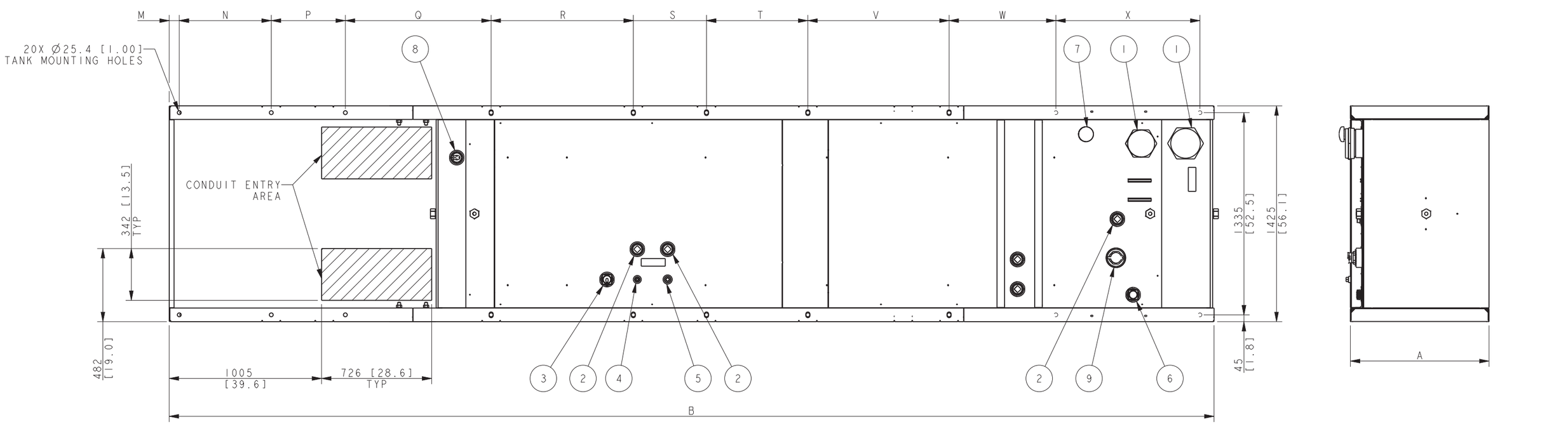
TITLE: **DIMENSION PRINT, 350-500REOZJC/D ENCL. & TANKS**

SCALE 0.06 | CAD NO. | SHEET 5 of 10

DWG NO. **ADV-9189** | **D**

350-500KW REOZJC/D
STEEL & ALUMINUM SL1 ENCL.
STEEL WEATHER ENCL.

TANK INFORMATION													
LITERS [GALLONS] MIN HOURS	GENSETS	DIM A MM [INCH]	DIM B MM [INCH]	M	N	P	Q	R	S	T	V	W	X
1530 [404] 12 HOURS	350-400KW	406.4 [16.0]	5760.8 [226.8]										
1771 [468] 12 HOURS	500KW	457.2 [18.0]	5760.8 [226.8]									931.5 [36.67]	523.9 [20.63]
2930 [774] 24 HOURS	350-400KW	762.0 [30.0]	5760.8 [226.8]										
3384 [894] 24 HOURS	500KW	838.2 [33.0]	5760.8 [226.8]										
4394 [1161] 36 HOURS	350-400KW	914.4 [36.0]	6459.8 [254.3]									574.6 [22.62]	648.3 [25.52]
5047 [1333] 36 HOURS	500KW	914.4 [36.0]	7094.8 [279.3]	66.3 [2.61]	606.8 [23.89]	488.5 [19.23]	961.7 [37.86]	937.9 [36.93]	482.6 [19.00]	668.6 [26.32]	931.5 [36.67]	577.0 [22.72]	576.6 [22.70]
1530 [404] 12 HOURS STATE	350-400KW	381.0 [15.0]	6713.8 [264.3]									664.2 [26.15]	812.7 [32.00]
1771 [468] 12 HOURS STATE	500KW	431.8 [17.0]	6713.8 [264.3]										
2930 [774] 24 HOURS STATE	350-400KW	660.4 [26.0]	6713.8 [264.3]									704.3 [27.73]	772.6 [30.42]
3384 [894] 24 HOURS STATE	500KW	736.6 [29.0]	6713.8 [264.3]										
4394 [1161] 36 HOURS STATE	350-400KW	914.4 [36.0]	6891.6 [271.3]										950.4 [37.42]
5047 [1333] 36 HOURS STATE	500KW	914.4 [36.0]	7653.6 [301.3]									891.3 [35.09]	821.1 [32.33]



4396 [1161 GAL.] 36 HOUR STATE TANK SHOWN.

ITEM	DESCRIPTION
9	FILL CAP, 2" LOCKABLE W/PIPE RISER
8	SWITCH, FUEL IN BASIN TOP MTD, 2"
7	VENT, NORMAL
6	GAUGE, FUEL LEVEL, DIRECT READ
5	RETURN, FUEL (3/4" NPT)
4	SUPPLY, FUEL (1/2" NPT)
3	GAUGE, FUEL LEVEL, W/ SENDER
2	PLUG, PIPE (2" NPT)
1	CAP, EMERGENCY VENT

REV	DATE	ON COMPOSITE DWGS, SEE PART NO. FOR REVISION LEVEL	BY
-	25NOV2019	NEW DRAWING [CT200393]	YBY
A	17AUG2021	(C-8) 20X Ø25.4 [1.00] ADDED, SEE SHEET 7	
		[CT214138]	RNN
B	1NOV2021	SEE SHEET 7 & 8 [CT215771]	SAK
C	14DEC2021	SEE SHEET 1, 9 & 10 [CT216616]	MVT

DO NOT SCALE. REFERENCE THE MODEL FOR ALL UNSPECIFIED DIMENSIONS

THIRD ANGLE PROJECTION

APPROVALS		DATE
DRAWN	YBY	25NOV2019
CHECKED	KJB	25NOV2019
APPROVED	DMS	25NOV2019

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TITLE: DIMENSION PRINT, 350-500REOZJC/D ENCL. & TANKS

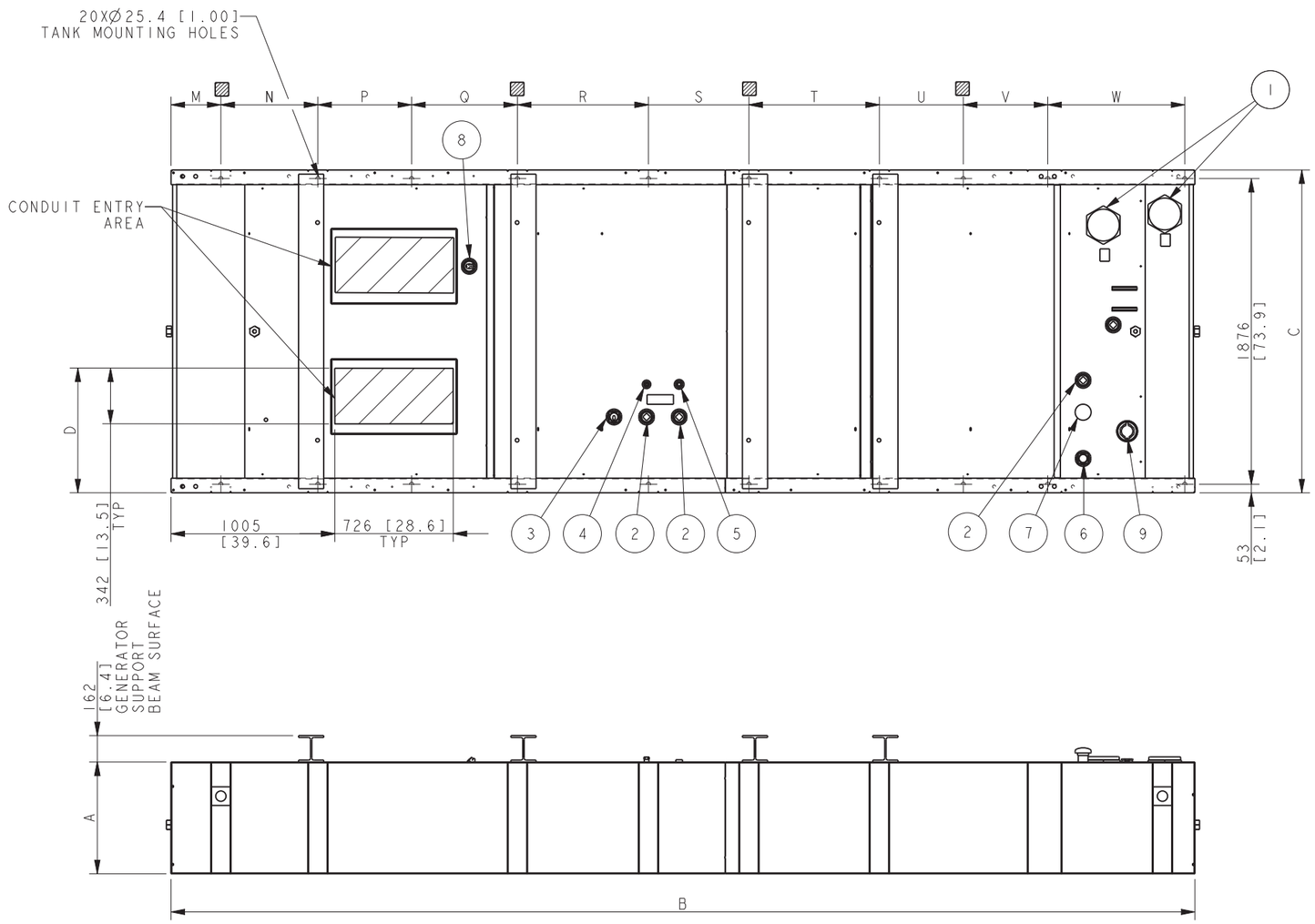
SCALE 0.08 | CAD NO. | SHEET 6 of 10

DWG NO. ADV-9189 | D

350-500KW REOZJC/D ENCLOSED
12 - 36 HOUR TANKS

TANK INFORMATION

LITERS [GALLONS] MIN HOURS	GENSETS	DIM A MM [INCH]	DIM B MM [INCH]	DIM C MM [INCH]	DIM D MM [INCH]	TANK WEIGHT KG [LBS] (NO FUEL)	M	N	P	Q	R	S	T	U	V	W	X	Y
5042 [1332] 48 HOURS	350KW	711.2 [28.0]	5850.1 [230.3]	1981.2 [78.0]	816.1 [32.1]	2751 [6064]	305.8 [12.0]	595.1 [23.4]	575.0 [22.6]	649.5 [25.6]	804.0 [31.7]	616.5 [24.3]	800.1 [31.5]	515.0 [20.3]	518.3 [20.4]	840.6 [33.10]	-	-
5818 [1537] 48 HOURS	400KW	812.8 [32.0]	5850.1 [230.3]			2887 [6364]												
6651 [1757] 48 HOURS	500KW	914.4 [36.0]	5850.1 [230.3]			3029 [6678]												
5061 [1337] 48 HOURS STATE	350KW	635.0 [25.0]	6282.0 [247.3]			2953 [6510]												
5852 [1546] 48 HOURS STATE	400KW	711.2 [28.0]	6282.0 [247.3]			3077 [6784]												
6681 [1765] 48 HOURS STATE	500KW	812.8 [32.0]	6282.0 [247.3]			3214 [7087]												



6681 [1765 GAL.] 48 HOUR STATE TANK SHOWN.

ITEM	DESCRIPTION
9	FILL CAP, 2" LOCKABLE W/PIPE RISER
8	SWITCH, FUEL IN BASIN TOP MTD, 2"
7	VENT, NORMAL
6	GAUGE, FUEL LEVEL, DIRECT READ
5	RETURN, FUEL (3/4" NPT)
4	SUPPLY, FUEL (1/2" NPT)
3	GAUGE, FUEL LEVEL, W/ SENDER
2	PLUG, PIPE (2" NPT)
1	CAP, EMERGENCY VENT

▨ GROUND CLEARANCE I-BEAM MOUNTING HOLE

REV	DATE	ON COMPOSITE DWGS, SEE PART NO. FOR REVISION LEVEL	BY
B	1NOV2021	72 HOURS AND 92 HOURS TANKS MOVED ON SHEET 8; 48 HOURS TANK VIEWS ADDED; (D-4) DIM W ADDED & TABLE UPDATED FOR W; SEE SHEET 8 [CT215771]	SAK
C	14DEC2021	SEE SHEET 1, 9 & 10 [CT216616]	MVT

DO NOT SCALE. REFERENCE THE MODEL FOR ALL UNSPECIFIED DIMENSIONS

THIRD ANGLE PROJECTION

APPROVALS		DATE
DRAWN	YBY	25NOV2019
CHECKED	KJB	25NOV2019
APPROVED	DMS	25NOV2019

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TITLE: DIMENSION PRINT, 350-500REOZJC/D ENCL & TANKS

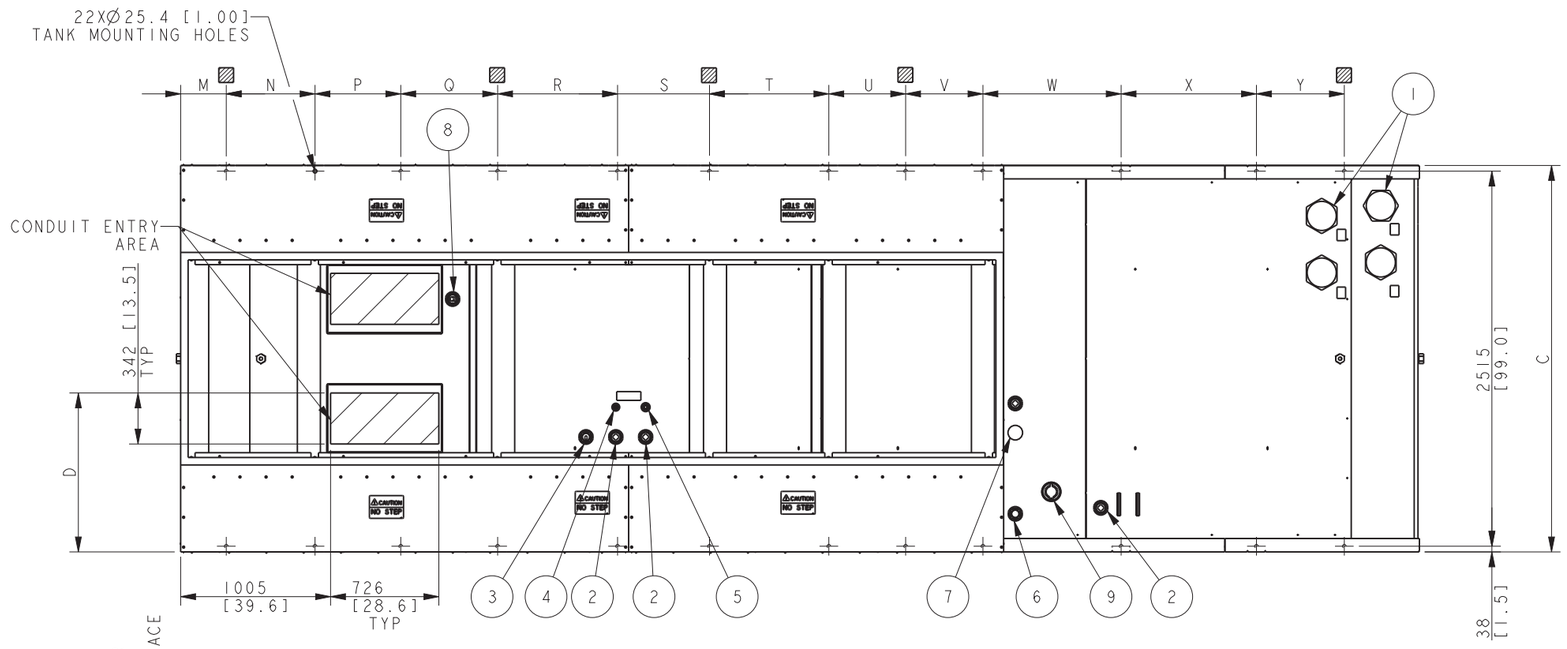
SCALE 0.05 | CAD NO. | SHEET 1 of 10

DWG NO. ADV-9189 | D

350-500KW REOZJC/D ENCLOSED 48 HOUR TANKS

TANK INFORMATION

LITERS [GALLONS] MIN HOURS	GENSETS	DIM A MM [INCH]	DIM B MM [INCH]	DIM C MM [INCH]	DIM D MM [INCH]	TANK WEIGHT KG [LBS] (NO FUEL)	M	N	P	Q	R	S	T	U	V	W	X	Y
7510 [1984] 72 HOURS	350KW	762.0 [30.0]	5850.1 [230.3]	2590.8 [102.0]	1120.9 [44.13]	3486 [7686]	305.8 [12.0]	595.1 [23.4]	575.0 [22.6]	649.5 [25.6]	804.0 [31.7]	616.5 [24.3]	800.1 [31.5]	515.0 [20.3]	518.3 [20.4]	-	-	-
8695 [2297] 72 HOURS	400KW	889.0 [35.0]	5850.1 [230.3]			3656 [8061]												
9971 [2634] 72 HOURS	500KW	914.4 [36.0]	6028.0 [237.3]			3901 [8600]												
7537 [1991] 72 HOURS STATE	350KW	660.4 [26.0]	6282.0 [247.3]			3263 [7193]												
8748 [2311] 72 HOURS STATE	400KW	762.0 [30.0]	6282.0 [247.3]			3415 [7529]												
9993 [2640] 72 HOURS STATE	500KW	863.6 [34.0]	6282.0 [247.3]			4063 [8958]												
9993 [2640] 96 HOURS STATE	350KW		6282.0 [247.3]			4063 [8958]												
11602 [3065] 96 HOURS STATE	400KW		7264.4 [286.0]			4426 [9758]										926.5 [36.5]	465.0 [18.3]	442.2 [17.4]
13325 [3520] 96 HOURS STATE	500KW		8305.8 [327.0]			4863 [10720]											907.2 [35.7]	589.2 [23.2]



13325 [3520 GAL.] 96 HOUR STATE TANK SHOWN.

ITEM	DESCRIPTION
9	FILL CAP, 2" LOCKABLE W/PIPE RISER
8	SWITCH, FUEL IN BASIN TOP MTD, 2"
7	VENT, NORMAL
6	GAUGE, FUEL LEVEL, DIRECT READ
5	RETURN, FUEL (3/4" NPT)
4	SUPPLY, FUEL (1/2" NPT)
3	GAUGE, FUEL LEVEL, W/ SENDER
2	PLUG, PIPE (2" NPT)
1	CAP, EMERGENCY VENT

▨ GROUND CLEARANCE I-BEAM MOUNTING HOLE

REV	DATE	ON COMPOSITE DWGS, SEE PART NO. FOR REVISION LEVEL	BY
-	25NOV2019	NEW DRAWING [CT200393]	YBY
A	17AUG2021	(C-8) Ø25.4 [1.00] ADDED; (D-5) DIM D COLUMN	
		ADDED; (B-8) 1066 REMOVED AND UPDATED IN	
		TABLE, SEE SHEET 6 [CT214138]	RNN
B	1NOV2021	72 HOURS AND 92 HOURS TANKS VIEWS ADDED FROM	
		SHEET 7 [CT215771]	SAK
C	14DEC2021	SEE SHEET 1, 9 & 10 [CT216616]	MVT

DO NOT SCALE. REFERENCE THE MODEL FOR ALL UNSPECIFIED DIMENSIONS

THIRD ANGLE PROJECTION

APPROVALS		DATE
DRAWN	YBY	25NOV2019
CHECKED	KJB	25NOV2019
APPROVED	DMS	25NOV2019

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TITLE
DIMENSION PRINT, 350-500REOZJC/D ENCL & TANKS

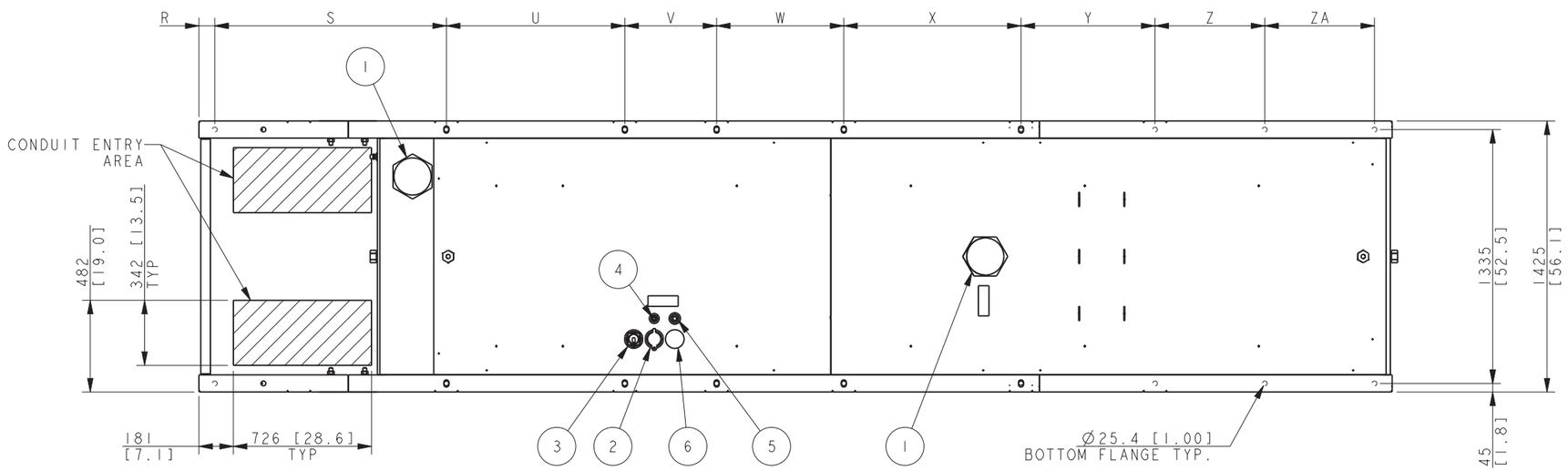
SCALE 0.05 | CAD NO. | SHEET 8 of 10

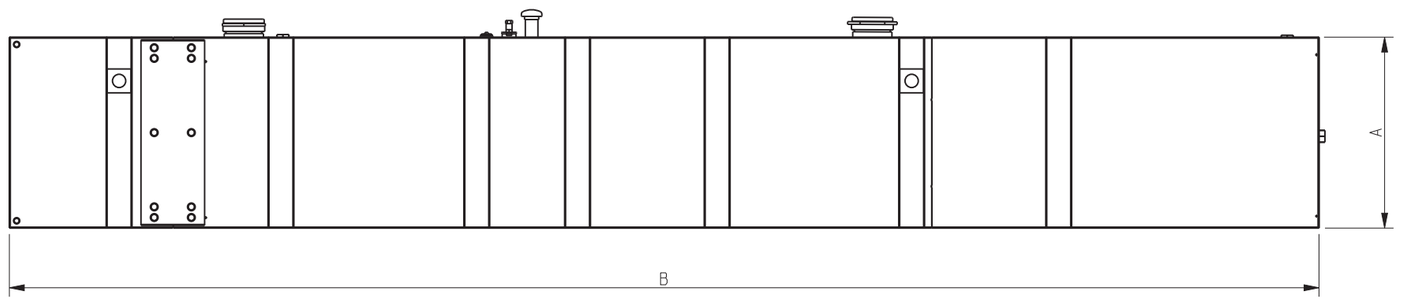
DWG NO. ADV-9189 | D

350-500KW REOZJC/D ENCLOSED 96 HOUR TANKS

TANK W/OPEN UNIT

LITERS [GALLONS] MIN HOURS	GENSETS	WEIGHT KG [LBS]	A	B	R	S	U	V	W	X	Y	Z	ZA	ZB
1530 [404] 12 HOURS	350-400KW	1110 [2446]	406.4 [16.0]	4939.2 [194.4]	83.1 [3.27]	1217.6 [47.94]	937.9 [36.93]	482.6 [19.00]	668.6 [26.32]	931.5 [36.67]	523.9 [20.63]	-	-	-
1771 [468] 12 HOURS	500KW	1158 [2554]	457.2 [18.0]											
2930 [774] 24 HOURS	350-400KW	1401 [3089]	762.0 [30.0]											
3384 [894] 24 HOURS	500KW	1484 [3271]	838.2 [33.0]											
4394 [1161] 36 HOURS	350-400KW	1789 [3945]	914.4 [36.0]	5637.2 [221.9]							574.6 [22.62]	648.3 [25.52]		
5046 [1333] 36 HOURS	500KW	1986 [4379]	914.4 [36.0]	7094.8 [279.3]	83.1 [3.27]	2040.2 [80.32]	937.9 [36.93]	482.6 [19.00]	668.6 [26.32]	931.5 [36.67]	704.3 [27.73]	577.0 [22.72]	576.6 [22.70]	





5046 [1333 GAL.] 36 HOUR STANDARD TANK SHOWN.

ITEM	DESCRIPTION
6	VENT, NORMAL
5	RETURN, FUEL (1/2" NPT)
4	SUPPLY, FUEL (1/2" NPT)
3	GAUGE, FUEL LEVEL, W/ SENDER
2	FILL CAP, 2" LOCKABLE W/PIPE RISER
1	CAP, EMERGENCY VENT

REV	DATE	ON COMPOSITE DWGS, SEE PART NO. FOR REVISION LEVEL	BY
C	14DEC2021	STANDARD TANK ADDED; SEE SHEET 1 & 10 [CT216616]	MVT

DO NOT SCALE. REFERENCE THE MODEL FOR ALL UNSPECIFIED DIMENSIONS

THIRD ANGLE PROJECTION

APPROVALS		DATE
DRAWN	MVT	14DEC2021
CHECKED	PKD	14DEC2021
APPROVED	AJD	14DEC2021

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TITLE: DIMENSION PRINT, 350-500REOZJC/D ENCL & TANKS

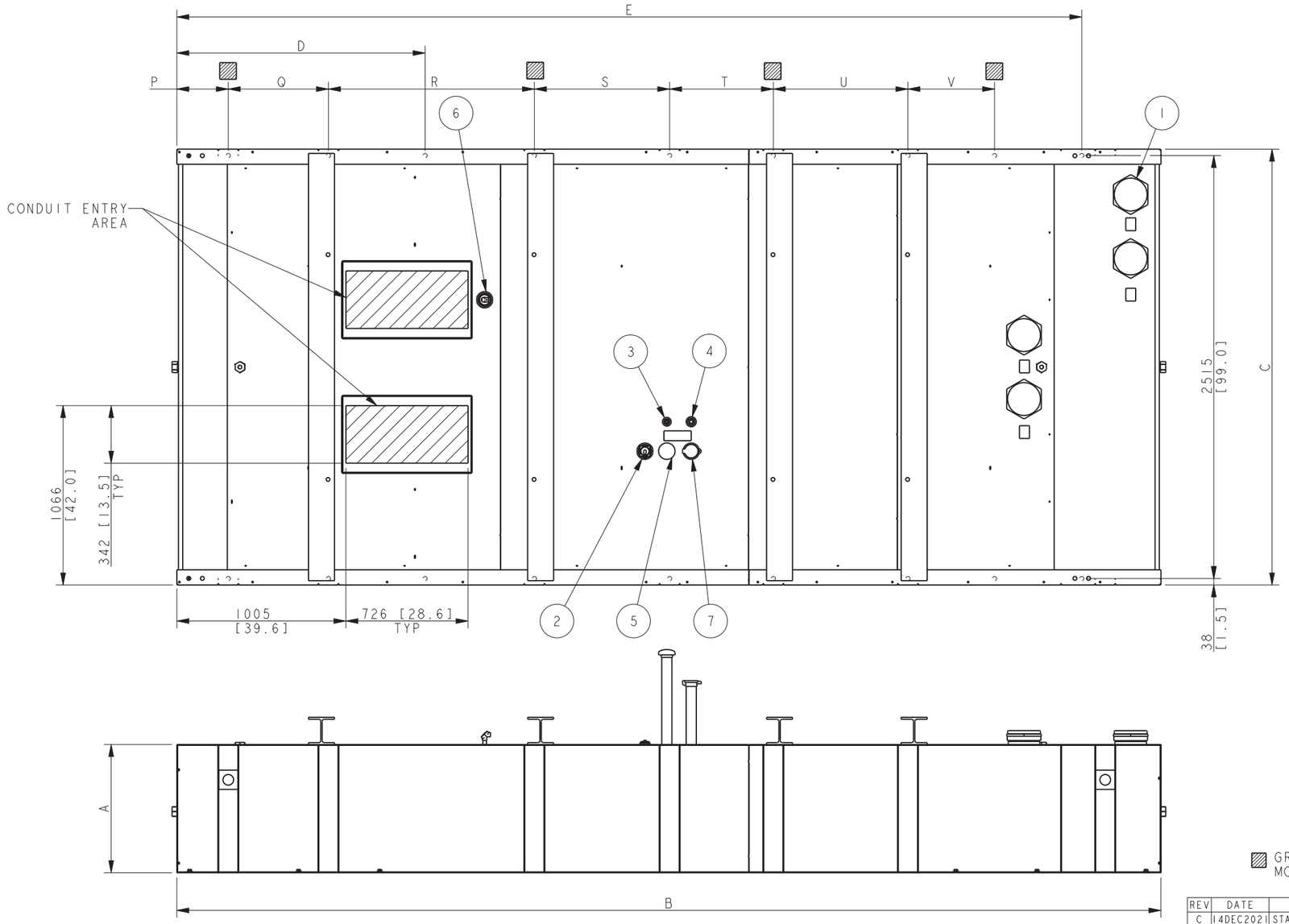
SCALE 0.07 | CAD NO. | SHEET 3 of 10

DWG NO. ADV-9189 | D

12 - 36 HOUR
350-500kW STD TANK
OPEN UNIT

TANK INFORMATION

LITERS [GALLONS] MIN HOURS	GENSETS	DIM A MM [INCH]	DIM B MM [INCH]	DIM C MM [INCH]	TANK WEIGHT KG [LBS] (NO FUEL)	D	E	P	Q	R	S	T	U	V
5042 [1332] 48 HOURS	350KW	711.2 [28.0]	5850.1[230.3]	1981.2[78.0]	2751 [6064]	1475.9 [58.1]	5379.3 [211.8]	305.8 [12.0]	595.1 [23.4]	224.5 [48.2]	804.0 [31.7]	616.5 [24.3]	800.1 [31.5]	515.0 [20.3]
5818 [1537] 48 HOURS	400KW	812.8 [32.0]	5850.1[230.3]		2887 [6364]									
6651 [1757] 48 HOURS	500KW	914.4 [36.0]	5850.1[230.3]		3029 [6678]									
7510 [1984] 72 HOURS	350KW	762.0 [30.0]	5850.1[230.3]	2590.8[102.0]	3486 [7686]									
8695 [2297] 72 HOURS	400KW	889.0 [35.0]	5850.1[230.3]		3656 [8061]									
9971 [2634] 72 HOURS	500KW	914.4 [36.0]	6028[237.3]		3901 [8600]									



7510 [1984 GAL.] 72 HOUR STANDARD TANK SHOWN.

ITEM	DESCRIPTION
7	FILL CAP, 2" LOCKABLE W/PIPE RISER
6	SWITCH, FUEL IN BASIN TOP MTD, 2"
5	VENT, NORMAL
4	RETURN, FUEL (1/2" NPT)
3	SUPPLY, FUEL (1/2" NPT)
2	GAUGE, FUEL LEVEL, W/ SENDER
1	CAP, EMERGENCY VENT

▨ GROUND CLEARANCE I-BEAM MOUNTING HOLE

REV	DATE	ON COMPOSITE DWGS, SEE PART NO. FOR REVISION LEVEL	BY
C	14DEC2021	STANDARD TANK ADDED; SEE SHEET 1 & 9 [CT216616]	MVT

DO NOT SCALE. REFERENCE THE MODEL FOR ALL UNSPECIFIED DIMENSIONS

THIRD ANGLE PROJECTION

APPROVALS		DATE
DRAWN	MVT	14DEC2021
CHECKED	PKD	14DEC2021
APPROVED	AJD	14DEC2021

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TITLE: DIMENSION PRINT, 350-500REOZJC/D ENCL & TANKS

SCALE 0.07 | CAD NO. | SHEET 10 of 10

DWG NO. ADV-9189 | D

48 - 72 HOUR
350-500kW STANDARD TANK
OPEN UNIT

GENERAC® | INDUSTRIAL POWER

EVAPAR

Submittal Package



UK Environmental Quality Management Center

Messer Construction



EVAPAR, Inc.
Contacts:
Brandon Burke
Josh Heines
2920 Blankenbaker Rd.
Louisville, KY 40299
TEL (502) 267-6315
FAX (502) 267-6206

Bill of Materials
For
University of Kentucky
Environmental Quality Management Center

Quantity 1 - Generac Industrial diesel engine-driven generator set with turbocharged/aftercooled 6-cylinder 6.7L engine, consisting of the following features and accessories:

- Stationary Emergency-Standby rated
- 175 kW Rating, wired for 277/480 VAC Three Phase, 60 Hz
- Permanent Magnet Excitation
- UL2200
- EPA Certified
- SCAQMD
- Primary MLCB, 80% rated thermal-magnetic
    - 400 Amp
    - Shunt Trip
    - Auxiliary Contacts, 1 Set
- Level 2 Acoustic Enclosure, Steel
    - Baked-On Powder Coat Finish
- AC/DC Enclosure Interior LED Lighting Kit
- 36" 510 Gallon Double-Wall UL142 Basetank
    - 37 Hours of Full Load Run Time
    - Mechanical Fuel Level Lndicator Gauge
    - Electronic Fuel Level Sender
    - 13" Fuel Fill Extension
- DSE G8601 Digital Genset Controller
    - Meets NFPA 99 and 110 requirements
    - Temp Range -30 to +50 deg C
    - UL6200
    - CE
    - High-Resolution 240 X 128 Pixel Display
        - Integral LCD Display Heater
        - IP65 (front)
        - Auto/Manual/Off key switch, Alarm Indication, Not in Auto Indication, audible alarm, emergency stop switch
    - Advanced PLC Functionality
    - 2 RS485 Ports, 2 USB Ports, 1 Ethernet Port, and 1 CANbus Port

Architect to confirm coat finish color acceptable

    - Engine Sensors: Oil Pressure, Oil Temp, Coolant Temp and Level, Fuel Level/Pressure (where applicable), Engine Speed, DC Battery Voltage and Charge Current, Run-time Hours, Generator Voltages, Amps, Frequency, Power, Power Factor
        - Alarm Status: Low or High AC Voltage, Low or High Battery Voltage, Low or High Frequency, Pre-low or Low Oil Pressure, Pre-high or High Oil Temp, Low Water Level and Temp, Pre-high or High Engine Temp, High, Low, and Critical-low Fuel Level/Pressure (where applicable), Overcrank, Over and Under Speed, Unit Not in Automatic
        - Programmable I/O
        - Built-in PLC for special applications
    - Engine function monitoring and control:
        - Full range standby operation; programmable auto crank, Emergency Stop, Auto-Off-Manual switch
    - Isochronous Governor
        - Digital frequency regulation with: soft-start ramping - adjustable, gain - adjustable, overshoot limit - adjustable
    - 3 Phase RMS Voltage Sensing
        - +/-0.5% digital voltage regulation with: soft-start voltage ramping - adjustable, loss of sensing protection - adjustable, negative power limit - adjustable, Hi/Lo voltage limit - adjustable, V/F slope and gain - adjustable, fault protection (I2T Function)
    - Configurable Timers
    - Integrated SNMP
    - DSENet (Expansion Support)
    - 2 and 3-wire start controls for any industrial grade transfer switch
- 21 Light Remote Annunciator, Surface Mount
- Remote Emergency Stop Switch, Break-Glass, shipped loose
- Alternator Strip Heater
- Battery Charger, 10 Amp, NFPA 110 compliant, installed
- Air Filter Restriction Indicator
- Engine Coolant Heater, 1500W
- 120V GFCI and 240V Outlet
- 8 Position Load Center
- Flush Mount Annunciator Kit
- I/O Expansion Module
- 3 Owner's Manuals
- 5-Year Comprehensive Warranty
- SD0175KG176.7D18CPLY3

Quantity 1 - TX Series Automatic Transfer Switch consisting of the following features and accessories:

- 300 Amp, 3 pole, 277/480 VAC three phase, 60 Hz, with 2 or 3-Wire Start Circuit

    - Utility Voltage Sensing Controls:
        - Adjustable Drop-out and Pick-up
        - Adjustable Utility Interrupt Delay
    - Adjustable Logic Controls:
        - Minimum Standby Voltage
        - Minimum Standby Frequency
        - Engine Warmup
        - Return to Utility
        - Engine Cooldown
        - Transfer on Exercise
- 3 Owner's Manuals
- Surface Mount Remote Annunciator
- Double Set of Form C Aux Cont
- IBC Seismic Certified
- Any Breaker (3 Cycle)
- Withstand and Close-On Rating - 200kA Fuse Rating
- Withstand and Close-On Rating - 35kA Any Breaker
- Withstand and Close-On Rating - 65kA Specific Breaker
- IO Board - 4 Inputs, 4 Outputs
- CSA - C22.2 No.178
- UL Listed 1008 by ETL
- NEMA 1 Enclosure
- Non Service Entrance Rated
- In Phase Only Transfer
- 5-Year Extended Warranty

Quantity 1 - TX Series Automatic Transfer Switch consisting of the following features and accessories:

- 100 Amp, 3 pole, 277/480 VAC three phase, 60 Hz, with 2 or 3-Wire Start Circuit
    - Utility Voltage Sensing Controls:
        - Adjustable Drop-out and Pick-up
        - Adjustable Utility Interrupt Delay
    - Adjustable Logic Controls:
        - Minimum Standby Voltage
        - Minimum Standby Frequency
        - Engine Warmup
        - Return to Utility
        - Engine Cooldown
        - Transfer on Exercise
- 3 Owner's Manuals
- Surface Mount Remote Annunciator
- Double Set of Form C Aux Cont
- IBC Seismic Certified

- Any Breaker (3 Cycle)
- Withstand and Close-On Rating - 200kA Fuse Rating
- Withstand and Close-On Rating - 22kA Any Breaker
- Withstand and Close-On Rating - 35kA Specific Breaker
- IO Board - 4 Inputs, 4 Outputs
- CSA - C22.2 No.178
- UL Listed 1008 by ETL
- NEMA 1 Enclosure
- Non Service Entrance Rated
- In Phase Only Transfer
- 5-Year Extended Warranty

Quantity 1 - Triple Breaker Dual Purpose Docking Station

- 400 AMP
- 277/480V (3H+N+G) Brown, Orange, Yellow, White, Green
- ETL Listed to UL 1008 Standards, UL 50 Listed, 65kAIC
- Temporary Line: 1 x 400A 3P Siemens Main Breaker Mechanically Interlocked to Existing Permanent Breaker
- Temporary Load: 1 x 400A 3P Siemens Main Breaker
- 2 Sets of 16 Series Male Camloks per Phase, Neutral (if applicable), and 1 Ground
- 2 Sets of 16 Series Female Camloks per Phase, Neutral (if applicable), and 1 Ground
- Permanent Line: 1 x 400A 3P Siemens Main Breaker Mechanically Interlocked to Temporary Breaker
- Permanent Line: 2 x 600MCM Mechanical Lug per Phase, Neutral (if applicable), and Ground
- Permanent Load: 2 x 600MCM Mechanical Lug per Phase, Neutral (if applicable), and Ground
- Silver Plated Copper Busbar
- Phase Rotation Monitor
- Cable Theft Prevention System
- 2-Wire Auto-Start
- Battery Charger Receptacle 20A GFCI 125V
- Block Heater Receptacle 30A L5-30 125V
- Shunt Trip on (Line/Load) Breaker
- Wall Mount Aluminum NEMA 3R Enclosure
- Remote Annunciator

Installation Notes

Generator: 175kW Diesel
Dimensions: 143” L x 50.5” W x 129” H
Weight: 8,500 lbs.
Fuel Consumption: 13.5 gal/hr

Automatic Transfer Switch: 100 Amp
Dimensions: 36” H x 21” W x 12” D
Weight: 106 lbs.

Automatic Transfer Switch: 300 Amp
Dimensions: 51.5” H x 24” W x 12” D
Weight: 174 lbs.

Docking Station: 400 Amp
Dimensions: 60” H x 48” W x 21.75” D
Weight: 267 lbs.

SD175 | 6.7 L | 175 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

Standby Power Rating

175 kW, 219 kVA, 60 Hz

USA ENGINEERED & BUILT*

*Assembled in the USA using domestic and foreign parts



Image used for illustration purposes only

Codes and Standards

Not all codes and standards apply to all configurations. Contact factory for details.

UL2200, UL6200, UL1236, UL489

CSA C22.2, B149

BS5514 and DIN 6271

SAE J1349

NFPA 37, 70, 99, 110

NEC700, 701, 702, 708

NEMA ICS10, MG1, 250, ICS6, AB1

ANSI C62.41

IBC 2009, CBC 2010, IBC 2012, ASCE 7-05, ASCE 7-10, ICC-ES AC-156 (2012)

Powering Ahead

For over 60 years, Generac has provided innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial applications under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

SD175 | 6.7 L | 175 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

STANDARD FEATURES

ENGINE SYSTEM
- Oil Drain Extension
- Air Cleaner
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Radiator Duct Adapter (Open Set Only)
- Engine Coolant Heater
- Critical Silencer

FUEL SYSTEM
- Fuel Lockoff Solenoid
- Primary Fuel Filter

COOLING SYSTEM
- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension

ELECTRICAL SYSTEM
- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor

ENCLOSURE (If Selected)
- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuated Enclosures)
- Gasketed Doors
- Stamped Air-Intake Louvers
- Upward Facing Discharge Hood (Radiator and Exhaust)
- Stainless Steel Lift Off Door Hinges
- Stainless Steel Lockable Handles
- RhinoCoat™ - Textured Polyester Powder Coat Paint

ALTERNATOR SYSTEM
- UL2200 GENprotect™
- 12 Leads (3-Phase, Non 600V)
- Class H Insulation Material
- Vented Rotor
- 2/3 Pitch
- Skewed Stator
- Auxiliary Voltage Regulator Power Winding
- Permanent Magnet Excitation
- Sealed Bearing
- Automated Manufacturing (Winding, Insertion, Lacing, Varnishing)
- Rotor Dynamically Spin Balanced
- Amortisseur Winding
- Full Load Capacity Alternator
- Protective Thermal Switch

GENERATOR SET
- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Separation of Circuits - Multiple Breakers
- Wrapped Exhaust Piping
- Standard Factory Testing
- 2 Year Limited Warranty (Standby Rated Units)
- Silencer Mounted in the Discharge Hood (Enclosed Units Only)

TANKS (If Selected)
- UL 142
- Double Wall
- Vents
- Sloped Top
- Sloped Bottom
- Factory Pressure Tested - 2 psi
- Rupture Basin Alarm
- Fuel Level
- Check Valve In Supply and Return Lines
- RhinoCoat™ - Textured Polyester Powder Coat Paint
- Stainless Steel Hardware

CONTROL SYSTEM



DSE G8601 Controller

The G8601 is a genset controller with integral heater designed for multiple application environments.

Key Features
- Advanced PLC Functionality
- Multi-Purpose PIDs
- Virtual Inputs
- On-Screen Mimic (SLDs)
- Multi-Level Pin Protected Front Panel Editor
- Integral LCD Display Heater
- Enhanced High-Resolution 240 x 128 Pixel Display
- Integral Gasket (IP65 protection)

Standard Protections
- Low Coolant Level
- High/Low Coolant Temperature
- Oil Temperature
- Over/Under Speed
- Over/Under Voltage
- Over/Under Frequency
- Over/Under Current
- Over Load
- Battery Voltage
- Battery Charger Current
- Phase to Phase and Phase to Neutral Short Circuits
- (I^2T Algorithm)
- Ground Fault

Control Panel
- Auto/Off/Manual

  – Indication Through Display Screen
- Audible Alarm and Silence
- Not in Auto Indication

Voltage Regulation
- Digital Control
- Three Phase Sensing
- Negative Power Limit
- Loss of Sensing Protection
- Fault Protection (I^2T Function)
- High Voltage Limit
- Low Voltage Limit
- Maximum Power Limit

More Features
- Uses Engine ECU
- Digital AVR Support
- Multiple Language Support
- Three Phase Generator Sensing & Protection
- Three Phase Bus Sensing
- Generator Current, Protection & Power Monitoring
- Configurable Timers
- Integrated SNMP
- Data Logging
- PC Configuration
- DSENet® (Expansion Support)
- Flexible I/O (Inputs/Outputs)
- Automatic and Front Panel Breaker Control
- Power-Save Mode

SD175 | 6.7 L | 175 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

CONFIGURABLE OPTIONS

ENGINE SYSTEM
- Oil Heater
- Fan and Belt Guards
- Air Filter Restriction Indicator
- Radiator Stone Guard

FUEL SYSTEM
- Flexible Fuel Line - NPT Connection

ELECTRICAL SYSTEM
- 10A UL Listed Battery Charger
- Battery Warmer

ALTERNATOR SYSTEM
- Alternator Upsizing
- Anti-Condensation Heater
- Tropical Coating

CIRCUIT BREAKER OPTIONS
- Main Line Circuit Breaker
- 2nd Main Line Circuit Breaker
- Shunt Trip and Auxiliary Contact
- Electronic Trip Breakers

GENERATOR SET
- Extended Factory Testing
- IBC Seismic Certification
- 8 Position Load Center
- Spring or Pad Vibration Isolators

ENCLOSURE
- Weather Protected Enclosure
- Level 1 Sound Attenuated
- Level 2 Sound Attenuated
- Level 2 Sound Attenuated with Motorized Dampers
- Steel Enclosure
- Aluminum Enclosure
- Up to 200 MPH Wind Load Rating (Contact Factory for Availability)
- AC/DC Enclosure Lighting Kit
- Enclosure Ambient Heater
- Damper Alarm

TANKS (Size On Last Page)
- 8 in (203.2 mm) Fill Extension
- 13 in (330.2 mm) Fill Extension
- 19 in (482.6 mm) Fill Extension

CONTROL SYSTEM
- NFPA 110 Compliant 21-Light Remote Annunciator
- Remote Relay Assembly (8 or 16)
- Oil Temperature Sender with Indicator Alarm
- Remote E-Stop (Break Glass-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Flush Mount)
- 100 dB Alarm
- Ground Fault Annunciation
- 120V GFCI and 240V Outlet
- Flush Mount Annunciator Kit
- Remote Communication - Modem
- 10A Engine Run Relay

WARRANTY
- 2 Year Extended Limited Warranty
- 5 Year Extended Limited Warranty
- 7 Year Extended Limited Warranty
- 10 Year Extended Limited Warranty

Specs callout for additional protection for stator and rotor with 100% epoxy impregnation and and overcoat of resilient insulating material. Will tropical coating satisfy this? Please confirm.

OK as submitted

ENGINEERED OPTIONS

ENGINE SYSTEM
- Fluid Containment Pan
- Coolant Heater Ball Valves

CONTROL SYSTEM
- Battery Disconnect Switch
- Spare Inputs (x4) / Outputs (x4)

GENERATOR SET
- Special Testing
- Battery Box

ALTERNATOR SYSTEM
- 3rd Breaker System

TANKS
- UL2085 Tank
- ULC S-601 Tank
- pecial Fuel Tanks

SD175 | 6.7 L | 175 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Iveco/FPT
EPA Emissions Compliance	Stationary Emergency
EPA Emissions Reference	See Emission Data Sheet
Cylinder #	6
Type	In-line
Displacement - in³ (L)	408.86 (6.7)
Bore: in (mm)	4.09 (104)
Stroke: in (mm)	5.2 (128)
Compression Ratio	16.5:1
Intake Air Method	Turbocharged/Aftercooled
Cylinder Head Type	4 - Valve
Piston Type	Aluminum Alloy
Crankshaft Type	Forged Steel

Engine Governing

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	±0.25%

Lubrication System

Oil Pump	Gear
Oil Filter Type	Full-FlowCartridge
Engine Oil Capacity: qt (L)	20.7 (19.6)

Cooling System

Cooling System Type	Closed
Water Pump Type	Belt Driven Centrifugal
Fan Type	Pusher
Fan Speed (RPM)	2,538
Fan Diameter - in (mm)	26.9 (660)

Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Specifications	ASTM
Fuel Filtering (Microns)	5
Fuel Pump Type	Engine Driven Gear
Injector Type	Electronic
Fuel Supply Line - in (mm)	0.5 (12.7) NPT
Fuel Return Line - in (mm)	0.5 (12.7) NPT

Engine Electrical System

System Voltage	12 VDC
Battery Charger Alternator	Standard
Battery Size	See Battery Index 0161970SBY
Battery Voltage	12 VDC
Ground Polarity	Negative (-)

ALTERNATOR SPECIFICATIONS

Standard Model	K0200124Y21
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<5%
Telephone Interference Factor (TIF)	<50
Standard Excitation	Permanent Magnet
Bearings	Single Sealed Cartridge
Coupling	Direct via Flexible Disc
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	±0.25%

SD175 | 6.7 L | 175 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

OPERATING DATA

POWER RATINGS

	Standby	
Single-Phase 120/240 VAC @1.0pf	175 kW	Amps: 729
Three-Phase 120/208 VAC @0.8pf	175 kW	Amps: 607
Three-Phase 120/240 VAC @0.8pf	175 kW	Amps: 526
Three-Phase 277/480 VAC @0.8pf	175 kW	Amps: 263
Three-Phase 346/600 VAC @0.8pf	175 kW	Amps: 210

MOTOR STARTING CAPABILITIES (SKVA)

	skVA vs. Voltage Dip		
277/480 VAC	30%	208/240 VAC	30%
K0200124Y21	478	K0200124Y21	361
K0250124Y21	630	K0250124Y21	506
K0300124Y21	790	K0300124Y21	609

FUEL CONSUMPTION RATES*

Fuel Pump Lift- ft (m)
3 (1)

Total Fuel Pump Flow (Combustion + Return) - gph (Lph)
16.629.0 (110.2) (63)

	Diesel - gph (Lph)
Percent Load	Standby
25%	3.9 (14.8)
50%	7.3 (27.6)
75%	10.5 (39.7)
100%	13.5 (51.1)

*Fuel supply installation must accommodate fuel consumption rates at 100% load.

COOLING

		Standby
Coolant Flow	gpm (Lpm)	44.6 (168.8)
Coolant System Capacity	gal (L)	7.5 (28.4)
Heat Rejection to Coolant	BTU/hr (kW)	497,718 (146)
Inlet Air	scfh (m^3/hr)	7,946 (13,502)
Maximum Operating Ambient Temperature	°F (°C)	122 (50)
Maximum Operating Ambient Temperature (Before Derate)		See Bulletin No.0199280SSD
Maximum Additional Radiator Backpressure	in H_2O (kPa)	0.5 (0.12)

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at rated power scfm - (m^3 /min)	470 (13.3)

ENGINE

		Standby
Rated Engine Speed	RPM	1,800
Horsepower at Rated kW**	hp	279
Piston Speed	ft/min (m/min)	1,559 (475)
BMEP	psi (kPa)	257 (1,772)

** See “Emissions Data Sheet” for maximum bHP for EPA and SCAQMD permitting purposes.

EXHAUST

		Standby
Exhaust Flow (Rated Output)	scfm (m^3/min)	1,212 (34.3)
Max. Allowable Backpressure	inHg (kPa)	1.5 (.5.1)
Exhaust Temperature (Rated Output)	°F (°C)	1,040 (560)

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.
Please contact a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with BS5514 and DIN6271 standards.
Standby - See Bulletin 10000018933 Prime - See Bulletin 10000018926

SD175 | 6.7 L | 175 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

DIMENSIONS AND WEIGHTS*



OPEN SET (Includes Exhaust Flex)

Run Time Hours**	Usable Capacity Gal (L)	L x W x H - in (mm)	Weight - lbs (kg)
No Tank	—	117.7 (2,991) x 49.7 (1,262) x 57.2 (1,453)	3,614 (1,639)
9	134 (507)	117.7 (2,991) x 49.7 (1,262) x 70.2 (1,783)	4,398 (1,969)
23	322 (1,219)	117.7 (2,991) x 49.7 (1,262) x 82.2 (2,088)	4,686 (2,125)
32	440 (1,665)	117.7 (2,991) x 49.7 (1,262) x 94.2 (2,393)	4,979 (2,260)
37	510 (1,930)	136.0 (3,455) x 53.0 (1,346) x 94.2 (2,393)	6,639 (3,011)
51	693 (2,623)	136 (3,455) x 53.0 (1,346) x 98.2 (2,493)	5,179 (2,349)
52	705 (2,668)	156.7 (3,980.2) x 53.0 (1,346) x 96.6 (2,453)	5,720 (2,594
70	946 (3,580)	208.3 (5291.5) x 53.0 (1,346) x 98.2 (2,493)	6,639 (3,011)
98	1,325 (5,015)	277.8 (7,055) x 53.0(1,346) x 98.2 (2,493)	7,654 (3,472)

WEATHER PROTECTED ENCLOSURE

Run Time Hours**	Usable Capacity Gal (L)	L x W x H - in (mm)	Weight - lbs (kg)	
			Steel	Aluminum
No Tank	—	143.0 (3,633) x 50.4 (1,280) x 68.2 (1,529)	4,511 (2,046)	4,052 (1,838)
9	134 (507)	143.0 (3,633) x 50.4 (1,280) x 81.2 (1,859)	5,295 (2,376)	4,836 (2,168)
23	322 (1,219)	143.0 (3,633) x 50.4 (1,280) x 93.2 (2,164)	5,583 (2,532)	5,124 (2,324)
32	440 (1,665)	143.0 (3,633) x 50.4 (1,280) x 105.2 (2,269)	5,876 (2,667)	5,417 (2,459)
37	510 (1,930)	143.0 (3,633) x 53.0 (1,346) x 105.2 (2,469)	7,536 (3,418)	7,077 (3,210)
51	693 (2,623)	143.0 (3,633) x 53.0 (1,346) x 109.2 (2,569)	6,076 (2,756)	5,617 (2,548)
52	705 (2,668)	156.7 (3980.2) x 53.0 (1,346) x 107.6 (2,529)	6,617 (3,001)	6,158 (2,793)
70	946 (3,580)	208.3 (5291.5) x 53.0 (1,346) x 109.2 (2,569)	7,536 (3,418)	7,077 (3,210)
98	1,325 (5,015)	277.8 (7,055) x 53.0 (1,346) x 109.2 (2,569)	8,551 (3,879)	8,092 (3,671)

LEVEL 1 ACOUSTIC ENCLOSURE

Run Time Hours**	Usable Capacity Gal (L)	L x W x H - in (mm)	Weight - lbs (kg)	
			Steel	Aluminum
No Tank	—	168.5 (4,279) x 50.4 (1,280) x 68.2 (1,731)	4,798 (2,176)	4,176 (1,894)
9	134 (507)	168.5 (4,279) x 50.4 (1,280) x 81.2 (2,061)	5,582 (2,506)	4,960 (2,224)
23	322 (1,219)	168.5 (4,279) x 50.4 (1,280) x 93.2 (2,366)	5,870 (2,662)	5,248 (2,380)
32	440 (1,665)	168.5 (4,279) x 50.4 (1,280) x 105.2 (2,671)	6,163 (2,797)	5,541 (2,515)
37	510 (1,930)	168.5 (4,279) x 53.0 (1,346) x 105.2 (2,671)	7,823 (3,548)	7,201 (3,266)
51	693 (2,623)	161.7 (4,108.5) x 53.0 (1,346) x 109.2 (2,771)	6,363 (2,886)	5,741 (2,604)
52	705 (2,668)	182.4 (4,633.7) x 53.0 (1,346) x 107.6 (2731)	6,664 (8,872)	6,042 (2,590)
70	946 (3,580)	234.0 (5,945) x 53.0 (1,346) x 109.2 (2,771)	7,823 (3,548)	7,201 (3,266)
98	1,325 (5,015)	303.5 (7,708.5)x 53.0 (1,346) x 132.7 (3,370)	8,835 (4,009)	8,216 (3,727)

LEVEL 2 ACOUSTIC ENCLOSURE WITH MOTORIZED DAMPERS

Run Time Hours**	Usable Capacity Gal (L)	L x W x H - in (mm)	Weight - lbs (kg)	
			Steel	Aluminum
No Tank	—	143.0 (3,633) x 50.4 (1,280) x 91.7 (2,330)	4,989 (2,263)	4,258 (1,931)
9	134 (507)	143.0 (3,633) x 50.4 (1,280) x 104.7 (2,660)	5,773 (2,593)	5,042 (2,261)
23	322 (1,219)	143.0 (3,633) x 50.4 (1,280) x 116.7 (2,965)	6,061 (2,749)	5,330 (2,417)
32	440 (1,665)	143.0 (3,633) x 50.4 (1,280) x 128.7 (3,270)	6,354 (2,884)	5,623 (2,552)
37	510 (1,930)	143.0 (3,633) x 53.0 (1,346) x 128.7 (3,270)	8,014 (3,635)	7,283 (3,303)
51	693 (2,623)	143.0 (3,633) x 53.0 (1,346) x 132.7 (3,370)	6,554 (2,973)	5,823 (2,641)
52	705 (2,668)	156.7 (3980.2) x 53.0 (1,346) x 131.1 (3,330)	6,855 (2959)	6,124 (2,627)
70	946 (3,580)	208.3 (5,291.5) x 53.0 (1,346) x 132.7 (3,370)	8,014 (3,635)	7,283 (3,303)
98	1,325 (5,015)	277.8 (7,055) x 53.0 (1,346) x 132.7 (3,370)	9,029 (4,096)	8,298 (3,764)

SPEC SHEET

Generac Power Systems, Inc. | S45 W29290 HWY. 59 | Waukesha, WI 53189 | generac.com
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Part No. A0003984150
Rev. B 11/20/2024

Certification of Quality

Generac Power Systems certifies that the products we manufacture have been built and tested in accordance with strict internal and external standards for quality. Our quality management system has been registered with the internationally recognized ISO 9001:2008 standard and our products comply with external standards that include, but are not limited to, CSA, NEMA, EGSA, ISO, and UL.

The Generac Quality Management System (GQMS) ensures the highest standards of quality at every level of production, from raw materials to the finished product. This includes receiving inspection, in-process checks, product and process audits, testing, final inspections, and shipping standards.

Tests of our products are performed in accordance with our internal procedures and controlled through the GQMS to ensure accuracy and effectiveness. The testing process and product designs comply with external standards which may include, but are not limited to: ISO 8528-5, ISO 3046, NFPA 99, NFPA 110, BS 5514, SAE J1349, and DIN 6271.

Generac Power Systems has over one million square feet of manufacturing space and over 2000 employees dedicated to designing and manufacturing power generation equipment in our multiple State of Wisconsin, USA factories. All of our installed and mobile generators are built with pride by our skilled American workforce to ensure our customers receive the quality that they expect from Generac.

We are committed to producing quality products for both our internal and external customers. We will continuously improve our processes and diligently measure all aspects of our business.

Daniel Waschow

Vice President of Quality
Generac Power Systems, Inc.
Waukesha, Wisconsin USA

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Part No. 0184520SSD
Rev. B 03/01/12

Generac Power Systems 5 Year (5C) Extended Limited Warranty for Industrial Standby Generators

For the period of warranty noted below, which begins upon the successful start-up and/or on-line activation of the unit, Generac Power Systems, Inc. “Generac” warrants that its Generator will be free from defects in material and workmanship for the items and period set forth below. Generac will, at its discretion, repair or replace any part(s) which, upon evaluation, inspection and testing by Generac or an Independent Authorized Service Dealer, is found to be defective. Any equipment that the purchaser/owner claims to be defective must be evaluated by the nearest Independent Authorized Service Dealer. Emissions components are excluded from coverage under this extended warranty. Emissions warranty coverage is detailed in a separate emissions warranty.

Warranty Coverage: Warranty coverage period is for Five (5) years or two-thousand (2,000) hours, whichever occurs first.

Warranty Coverage in Year(s) 1-5
Parts, Labor and Limited Travel

Limited Gearbox Coverage:

Year(s): 1-5 Coverage	Year(s): 6-10 Coverage
Limited Parts and Labor	Limited Parts Only

Guidelines:

1. Unit must be registered and proof of purchase available.
2. Any and all warranty repairs and/or concerns must be performed and/or addressed by an Independent Authorized Service Dealer, or branch thereof. Repairs or diagnostics performed by individuals other than Independent Authorized Service Dealers not authorized in writing by Generac will not be covered.
3. This Warranty is transferable between ownership of original install site.
4. Generac supplied engine coolant heaters (block-heaters), heater controls and circulating pumps are only covered during the first year of the warranty provision.
5. Generac may choose to repair, replace or refund a piece of equipment in its sole discretion.
6. Enclosures are warranted against rust for the first year of ownership only. Damage caused after receipt of generator is the responsibility of the owner and is not covered by this warranty. Nicks, scrapes, dents or scratches to the painted enclosure should be repaired promptly by the owner.
7. Warranty only applies to permanently wired and mounted units.
8. Damage to any covered components or consequential damages caused by the use of a non-OEM part will not be covered by the warranty.
9. Proof of performance of all required maintenance must be available.
10. Travel allowance is limited to 300 miles maximum and seven and one half (7.5) hours maximum (per occurrence, whichever is less) round trip from the nearest Independent Authorized Service Dealer. Any additional travel required will not be covered.
11. Engines, driven components and fuel tanks used in Generac’s standby power products system can carry a separate manufacturer’s (OEM) warranty (the “OEM Warranties”), unless otherwise expressly stated. OEM Warranties are in addition to this Warranty. All warranty claims for defects in material and/or workmanship on Generac product OEM components, may be directed through the OEM distributor/dealer network. OEM Warranties may vary and are subject to change. Generac shall have no liability under OEM warranties.

The following will NOT be covered by this warranty:

1. Costs of normal maintenance (i.e. tune-ups, associated part(s), adjustments, loose/leaking clamps, installation and start-up).
2. Damage/failures to the generator caused by accidents, shipping, handling, or improper storage.
3. Damage/failures caused by operation with improper fuels, speeds, loads or installations other than what’s recommended or specified by Generac Power Systems.
4. Damage to the generator due to the use of non-Generac parts and/or equipment, contaminated fuels, oils, coolants/antifreeze or lack of proper fuels, oil or coolants/antifreeze.
5. Failures due to normal wear and tear, accident, misuse, abuse, neglect, improper installation, improper sizing, or rodent, reptile, and/or insect infestation.
6. Rental equipment used while warranty repairs are being performed and/or any extraordinary equipment used for removal and/or reinstallation of generator (i.e. cranes, hoists, lifts, et. al.).
7. Planes, ferries, railroad, buses, helicopters, snowmobiles, snow-cats, off-road vehicles or any other mode of transport deemed not standard by Generac.
8. Products that are modified or altered in a manner not authorized by Generac in writing.
9. Starting batteries, fuses, light bulbs, engine fluids and any related labor.
10. Steel enclosures that rust as a result of improper installation, location in a harsh or salt water environment, or are scratched where the integrity of applied paint is compromised.
11. Units sold, rated or used for "Prime Power", "Trailer Mounted" or "Rental Unit" applications as defined by Generac. Contact an Independent Authorized Service Dealer for definitions.
12. Shipping costs associated with expedited shipping.
13. Additional costs for overtime, holiday or emergency labor costs for repairs outside of normal business hours.
14. Any incidental, consequential or indirect damages caused by defects in materials or workmanship, or any delay in repair or replacement of the defective part(s).
15. Failures caused by any act of God or external cause including without limitation, fire, theft, freezing, war, lightning, earthquake, windstorm, hail, water, tornado, hurricane, or any other matters which are reasonably beyond the manufacturer’s control.

THIS WARRANTY SUPERSEDES ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. SPECIFICALLY, GENERAC MAKES NO OTHER WARRANTIES AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ANY IMPLIED WARRANTIES WHICH ARE ALLOWED BY LAW, SHALL BE LIMITED IN DURATION TO THE TERMS OF THE EXPRESS WARRANTY PROVIDED HEREIN. SOME JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. GENERAC'S ONLY LIABILITY SHALL BE THE REPAIR OR REPLACEMENT OF PART(S) AS STATED ABOVE. IN NO EVENT SHALL GENERAC BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH DAMAGES ARE A DIRECT RESULT OF GENERAC’S NEGLIGENCE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU ALSO HAVE OTHER RIGHTS UNDER APPLICABLE LAW.

FOR AUSTRALIA ONLY: Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
FOR NEW ZEALAND ONLY: Nothing in this warranty statement excludes, restricts or modifies any condition, warranty right or remedy which pursuant to the New Zealand Legislation (Commonwealth or State) including the Fair Trading Practices Act of 1986 or the Consumer Guarantees Act 1993 (“CGA”) applies to this limited warranty and may not be so excluded, restricted or modified. Nothing in this statement is intended to have the effect of contracting out of the provisions of the CGA, except to the extent permitted by that Act, and these terms are to be modified to the extent necessary to give effect to that intention. If you acquire goods from Generac Power Systems or any of its authorized resellers and distributors for the purposes of a business, then pursuant to section 43(2) of the CGA, it is agreed that the provisions of the CGA do not apply.

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visit our website: www.generac.com

Part No. 0J4301 Revision M (2/16)

Generac Power Systems 5 Year (5C) Limited Warranty Extension for Industrial Transfer Switch Systems

Generac and purchaser hereby amend ("Amendment") the term of the original warranty for the transfer switch ("Original Warranty") from the term originally stated in the Original Warranty to a term of five (5) years ("Term Extension"). If purchaser's Original Warranty had already expired, this Amendment revives the Original Warranty and replaces its term with the Term Extension. This Amendment also amends warranty coverage in the Original Warranty to the coverage listed below from years 1-5 ("Coverage Extension"). The Coverage Extension shall not retroactively apply to cover any warranty work performed before the date of the Amendment. For clarity purposes only, the amended warranty is stated below in full.

For the period of warranty noted below, which begins (or began, whichever applicable) upon the successful start-up and/or on-line activation/registration of the unit, Generac Power Systems, Inc. (Generac) warrants that its transfer switch will be free from defects in material and workmanship for the items and period set forth below. Generac will, at its discretion, repair or replace any part(s) which, upon evaluation, inspection and testing by Generac or an Independent Authorized Service Dealer, is found to be defective. Any equipment that the purchaser/owner claims to be defective must be evaluated by the nearest Independent Authorized Service Dealer.

Warranty Coverage in Year(s) 1-5
Parts, Labor and Limited Travel

Guidelines:

1. Unit must be registered and proof of purchase available.
2. Any and all warranty repairs and/or concerns must be performed and/or addressed by an Independent Authorized Service Dealer, or branch thereof. Repairs or diagnostics performed by individuals other than Independent Authorized Service Dealers not authorized in writing by Generac will not be covered.
3. Warranty is transferable between ownership of original installation site.
4. Generac may choose to repair, replace or refund a piece of equipment in its sole discretion.
5. Warranty only applies to permanently wired and mounted units.
6. Enclosures are warranted for the first year of ownership only. Damage caused after receipt of transfer switch is the responsibility of the owner and is not covered by this warranty. Nicks, scrapes, dents or scratches to the painted enclosure should be repaired promptly by the owner.
7. Proof of performance of all required maintenance must be available.
8. Travel allowance is limited to 300 miles maximum or seven and one half (7.5) hours maximum (per occurrence, whichever is less) round trip from the nearest Independent Authorized Service Dealer. Any additional travel required will not be covered.

The following will NOT be covered by this warranty:

1. Costs of normal maintenance (i.e. associated part(s), adjustments, installation or start-up).
2. Damage to the transfer switch system caused by accidents, shipping, handling or improper storage.
3. Damage/failures caused by operation with loads or installations other than what's recommended or specified by Generac. Unauthorized modification/misapplication will not be warranted unless authorized by Generac in writing.
4. Rental equipment used while warranty repairs are being performed and/or any extraordinary equipment used for removal and/or reinstallation of transfer switch (i.e. cranes, hoists, lifts, etc.).
5. Planes, ferries, railroad, buses, helicopters, snowmobiles, snow-cats, off-road vehicles or any other mode of transport deemed not standard by Generac.
6. Failures due to normal wear and tear, accident, misuse, abuse, neglect, improper installation, or improper sizing.
7. Damage to any covered components or consequential damages caused by the use of a non-OEM part will not be covered by this warranty.
8. Damage related to rodent, reptile, and/or insect infestation.
9. Repairs or diagnostics performed by individuals other than Independent Authorized Service Dealers not authorized in writing by Generac.
10. Steel enclosures that rust as a result of improper installation, location in a harsh or salt water environment, or are scratched where the integrity of applied paint is compromised.
11. Fuses, light bulbs and any related labor.
12. Units sold, rated or used for "Prime Power," "Trailer Mounted" or "Rental Unit" applications as defined by Generac. Contact an Independent Authorized Service Dealer for definitions.
13. Failures caused by any act of God or external cause including without limitation, fire, theft, freezing, war, lightning, earthquake, windstorm, hail, water, tornado, hurricane, or any other matters which are reasonably beyond the manufacturer's control.
14. Shipping costs associated with expedited shipping.
15. Any incidental, consequential or indirect damages caused by defects in materials or workmanship, or any delay in repair or replacement of the defective part(s).
16. Any unit built/manufactured prior to 2014 models.
17. Overtime, holiday or emergency labor.
18. Living or travel expenses of person(s) performing service, except as specifically included within the terms of a specific unit warranty period.

THIS WARRANTY SUPERSEDES ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. SPECIFICALLY, GENERAC MAKES NO OTHER WARRANTIES AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ANY IMPLIED WARRANTIES WHICH ARE ALLOWED BY LAW, SHALL BE LIMITED IN DURATION TO THE TERMS OF THE EXPRESS LIMITED WARRANTY PROVIDED HEREIN. SOME JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. PURCHASER'S SOLE AND EXCLUSIVE REMEDY AND GENERAC'S ONLY LIABILITY SHALL BE THE REPAIR OR REPLACEMENT OF PART(S) AS STATED ABOVE. IN NO EVENT SHALL GENERAC BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH DAMAGES ARE A DIRECT RESULT OF GENERAC'S NEGLIGENCE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU COULD ALSO HAVE OTHER RIGHTS FROM STATE TO STATE.

FOR AUSTRALIA ONLY: Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
FOR NEW ZEALAND ONLY: Nothing in this warranty statement excludes, restricts or modifies any condition, warranty right or remedy which pursuant to the New Zealand Legislation (Commonwealth or State) including the Fair Trading Practices Act of 1986 or the Consumer Guarantees Act 1993 ("CGA") applies to this limited warranty and may not be so excluded, restricted or modified. Nothing in this statement is intended to have the effect of contracting out of the provisions of the CGA, except to the extent permitted by that Act, and these terms are to be modified to the extent necessary to give effect to that intention. If you acquire goods from Generac Power Systems or any of its authorized resellers and distributors for the purposes of a business, then pursuant to section 43(2) of the CGA, it is agreed that the provisions of the CGA do not apply.

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Part No. 0J4305 Revision H (4/21)

STATEMENT OF EXHAUST EMISSIONS
2025 FPT Diesel Fueled Generator

The measured emissions values provided here are proprietary to Generac and it's authorized dealers. This information may only be disseminated upon request to regulatory governmental bodies for emissions permitting purposes or to specifying organizations as submittal data when expressly required by project specifications, and shall remain confidential and not open to public viewing. This information is not intended for compilation or sales purposes and may not be used as such, nor may it be reproduced without the expressed written permission of Generac Power Systems, Inc.. The data provided shall not be meant to include information made public by Generac.

Generator Model	kW_e	Engine Disp (L)	Engine Family	Engine Model	Rated Engine Power (BHP)	Fuel Consumption (gal/hr)	Aspiration	Rated RPM	EPA Certificate #	CARB Certificate #	SCAQMD CEP #	Emissions Standard Category	Certification Type
SD035	35	4.5	SFPXL04.5DTD	F4GE9455B*J	79	5.05	Turbocharged/ Aftercooled	1800	SFPXL04.5DTD-004	N/A	N/A	Tier 3	Stationary Emergency CI
SD040	40	4.5	SFPXL04.5DTD	F4GE9455B*J	79	5.05	Turbocharged/ Aftercooled	1800	SFPXL04.5DTD-004	N/A	N/A	Tier 3	Stationary Emergency CI
SD050	50	4.5	SFPXL04.5DTD	F4GE9455B*J	79	5.05	Turbocharged/ Aftercooled	1800	SFPXL04.5DTD-004	N/A	N/A	Tier 3	Stationary Emergency CI
SD060	60	4.5	SFPXL04.5DTD	F4GE9455A*J	93	5.04	Turbocharged/ Aftercooled	1800	SFPXL04.5DTD-004	N/A	N/A	Tier 3	Stationary Emergency CI
SD080	80	4.5	SFPXL06.7DGB	F4GE9485A*J	131	6.84	Turbocharged/ Aftercooled	1800	SFPXL06.7DGB-005	N/A	511714	Tier 3	Stationary Emergency CI
SD100	100	6.7	SFPXL06.7DGB	F4GE9685A*J	198	10.04	Turbocharged/ Aftercooled	1800	SFPXL06.7DGB-005	N/A	511715	Tier 3	Stationary Emergency CI
SD130	130	6.7	SFPXL06.7DGB	F4GE9685A*J	198	10.04	Turbocharged/ Aftercooled	1800	SFPXL06.7DGB-005	N/A	511715	Tier 3	Stationary Emergency CI
SD150 DSE	150	6.7	SFPXL06.7DGS	F4HE9685A*J	279	13.5	Turbocharged/ Aftercooled	1800	SFPXL06.7DGS-006	N/A	511717	Tier 3	Stationary Emergency CI
SD150	150	6.7	SFPXL06.7DGS	F4HE0685F*J	282	13.5	Turbocharged/ Aftercooled	1800	SFPXL06.7DGS-006	N/A	640593	Tier 3	Stationary Emergency CI
SD175 DSE	175	6.7	SFPXL06.7DGS	F4HE0685F*J	282	13.5	Turbocharged/ Aftercooled	1800	SFPXL06.7DGS-006	N/A	640593	Tier 3	Stationary Emergency CI
SD175	175	6.7	SFPXL06.7DGS	F4HE9685A*J	279	13.5	Turbocharged/ Aftercooled	1800	SFPXL06.7DGS-006	N/A	511717	Tier 3	Stationary Emergency CI
SD200	200	8.7	SFPXL08.7TR3	F2CE9685A*E	389	19.1	Turbocharged/ Aftercooled	1800	SFPXL08.7TR3-008	N/A	511712	Tier 3	Stationary Emergency CI
SD230	230	8.7	SFPXL08.7TR3	F2CE9685A*E	389	19.1	Turbocharged/ Aftercooled	1800	SFPXL08.7TR3-008	N/A	511712	Tier 3	Stationary Emergency CI
SD250	250	8.7	SFPXL08.7TR3	F2CE9685A*E	389	19.1	Turbocharged/ Aftercooled	1800	SFPXL08.7TR3-008	N/A	511712	Tier 3	Stationary Emergency CI
SD275	275	10.3	SFPXL10.3TR3	F3AE9685A-E	449	22.1	Turbocharged/ Aftercooled	1800	SFPXL10.3TR3-009	N/A	511713	Tier 3	Stationary Emergency CI
SD/MD300	300	10.3	SFPXL10.3TR3	F3AE9685A-E	449	22.1	Turbocharged/ Aftercooled	1800	SFPXL10.3TR3-009	N/A	511713	Tier 3	Stationary Emergency CI
SD/MD350	350	12.9	SFPXL12.9IGR	F3BE9685A-E	530	27.02	Turbocharged/ Aftercooled	1800	SFPXL12.9IGR-010	N/A	511711	Tier 3	Stationary Emergency CI

Emissions Based on Engine Power of Specific Engine Model
These Values are Actual Composite Weighted Exhaust Emissions Results Over the EPA 5-Mode Test Cycle

Generator Model	CO	NOx + NMHC	PM	Grams/kW-hr Grams/bhp-hr
SD035	1.40	4.3	0.32	Grams/kW-hr
	1.04	3.23	0.24	Grams/bhp-hr
SD040	1.40	4.3	0.32	Grams/kW-hr
	1.0	3.23	0.24	Grams/bhp-hr
SD050	1.40	4.33	0.32	Grams/kW-hr
	1.0	3.2	0.22	Grams/bhp-hr
SD060	1.40	4.3	0.32	Grams/kW-hr
	1.04	3.23	0.24	Grams/bhp-hr
SD080	0.8	3.78	0.16	Grams/kW-hr
	0.6	2.8	0.12	Grams/bhp-hr
SD100	0.8	3.78	0.16	Grams/kW-hr
	0.6	2.8	0.1	Grams/bhp-hr
SD130	0.8	3.78	0.16	Grams/kW-hr
	0.6	2.76	0.12	Grams/bhp-hr
SD150 DSE	1.1	3.71	0.08	Grams/kW-hr
	0.82	2.7	0.1	Grams/bhp-hr
SD150	1.1	3.71	0.08	Grams/kW-hr
	0.89	2.76	0.06	Grams/bhp-hr
SD175 DSE	1.1	3.71	0.08	Grams/kW-hr
	0.8	2.7	0.1	Grams/bhp-hr

Part No. A0006524151
Rev. C 3/24/25

STATEMENT OF EXHAUST EMISSIONS
2025 FPT Diesel Fueled Generator

SD175	1.1	3.71	0.08	Grams/kW-hr
	0.8	2.7	0.1	Grams/bhp-hr
SD200	0.5	3.54	0.13	Grams/kW-hr
	0.37	2.61	0.097	Grams/bhp-hr
SD230	0.50	3.4	0.07	Grams/kW-hr
	0.4	2.5	0.05	Grams/bhp-hr
SD250	0.50	3.54	0.13	Grams/kW-hr
	0.37	2.61	0.097	Grams/bhp-hr
SD275	1.3	3.80	0.11	Grams/kW-hr
	0.67	2.76	0.089	Grams/bhp-hr
SD/MD300	1.3	3.80	0.11	Grams/kW-hr
	1.0	2.80	0.1	Grams/bhp-hr
SD/MD350	0.70	3.78	0.03	Grams/kW-hr
	0.515	2.780	0.022	Grams/bhp-hr

These Values are 100% Load Data Exhaust Emissions Results

Generator Model	CO	NOx + NMHC	PM	Grams/kW-hr Grams/bhp-hr
SD035	0.85	4.25	0.29	Grams/kW-hr
	0.63	3.17	0.22	Grams/bhp-hr
SD040	0.85	4.25	0.29	Grams/kW-hr
	0.63	3.17	0.22	Grams/bhp-hr
SD050	0.85	4.25	0.29	Grams/kW-hr
	0.63	3.13	0.21	Grams/bhp-hr
SD060	0.85	4.25	0.29	Grams/kW-hr
	0.63	3.17	0.22	Grams/bhp-hr
SD080	0.31	4.93	0.06	Grams/kW-hr
	0.23	3.67	0.04	Grams/bhp-hr
SD100	0.31	4.93	0.06	Grams/kW-hr
	0.23	3.63	0.04	Grams/bhp-hr
SD130	0.31	4.93	0.06	Grams/kW-hr
	0.23	3.68	0.04	Grams/bhp-hr
SD150 DSE	0.62	5.24	0.05	Grams/kW-hr
	0.46	3.85	0.04	Grams/bhp-hr
SD150	0.62	5.24	0.05	Grams/kW-hr
	0.46	3.91	0.04	Grams/bhp-hr
SD175 DSE	0.62	5.24	0.05	Grams/kW-hr
	0.46	3.85	0.04	Grams/bhp-hr
SD175	0.62	5.24	0.05	Grams/kW-hr
	0.46	3.85	0.04	Grams/bhp-hr
SD200	0.20	4.56	0.02	Grams/kW-hr
	0.14	3.35	0.0147	Grams/bhp-hr
SD230	0.44	4.42	0.01	Grams/kW-hr
	0.33	3.30	0.01	Grams/bhp-hr
SD250	0.18	6.5	0.01	Grams/kW-hr
	0.132	4.78	0.007	Grams/bhp-hr
SD275	0.98	3.3	0.02	Grams/kW-hr
	0.72	2.46	0.01	Grams/bhp-hr
SD/MD300	0.98	3.3	0.02	Grams/kW-hr
	0.72	2.43	0.01	Grams/bhp-hr
SD/MD350	0.6	3.98	0.01	Grams/kW-hr
	0.441	2.927	0.07	Grams/bhp-hr

- The stated values are actual exhaust emission test measurements obtained from an engine representative of the type described above.
- Values based on 5-Mode testing are official data of record as submitted to regulatory agencies for certification purposes. Testing was conducted in accordance with prevailing EPA protocol, which is typically accepted by SCAQMD and other regional authorities.
- No emissions values provided above are to be construed as guarantees of emission levels for any given Generac generator unit.
- Generac Power Systems, Inc. reserves the right to revise this information without prior notice.
- Consult state and local regulatory agencies for specific permitting requirements.
- The emission performance data supplied by the equipment manufacturer is only one element required toward completion of the permitting and installation process. State and local regulations may vary on a case-by-case basis and local agencies must be consulted by the permit application/equipment owner prior to equipment purchase or installation. The data supplied herein by Generac Power Systems Inc. cannot be construed as a guarantee of installability of the generating set.

 © 2025 Generac Power Systems, Inc. All rights reserved. All specifications are subject to change without notice.

CERTIFICATE

This is to certify that

Generac Power Systems, Inc.

S45 W29290 Hwy. 59
Waukesha, WI 53189
United States of America

with the organizational units/sites as listed in the annex

has implemented and maintains a **Quality Management System**.

Scope:
Design, Manufacture, and Distribution of Power Products and Solutions.

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 9001 : 2015

Certificate registration no.	10012920 QM15
Date of original certification	2021-06-25
Date of certification	2024-06-06
Valid until	2027-07-15

DQS Inc.

David Tellez
Managing Director

DQS IS A MEMBER OF

Accredited Body: DQS Inc., 1500 McConnor Parkway, Suite 400, Schaumburg, IL 60173 USA
The validity of the certification can only be verified by the QR-code.

Annex to certificate
Registration No. 10012920 QM15

Generac Power Systems, Inc.

S45 W29290 Hwy. 59
Waukesha, WI 53189
United States of America

Location	Scope
10012920 **Generac Power Systems, Inc.** **S45 W29290 Hwy. 59** **Waukesha, WI 53189** **United States of America**	Design and Support of Power Products and Solutions.
10012922 **Generac Power Systems, Inc.** **211 Murphy Dr.** **Eagle, WI 53119** **United States of America**	Manufacture and Distribution of Power Products and Solutions.
10012923 **Generac Power Systems, Inc.** **757 N. Newcomb St.** **Whitewater, WI 53190** **United States of America**	Manufacture and Distribution of Power Products and Solutions.
10012924 **Generac Power Systems, Inc.** **900 N. Parkway** **Jefferson, WI 53549** **United States of America**	Manufacture of Power Products and Solutions.
10013528 **Generac Power Systems** **3815 Oregon St.** **Oshkosh, WI 54902** **United States of America**	Manufacture and Distribution of Power Products.
10014175 **Generac Power Systems, Inc.** **351 Collins Road** **Jefferson, WI 53549** **United States of America**	Parts and Components Receiving, Warehousing, Return and Reconditioning of Product, and Distribution to Generac Locations.
10017103 **Generac Mobile** **215 Power Drive** **Berlin, WI 54923** **United States of America**	Manufacture and Distribution of Power Products.

This annex (edition: 2024-06-06) is only valid in connection with the above-mentioned certificate.

Annex to certificate
Registration No. 10012920 QM15

Generac Power Systems, Inc.

S45 W29290 Hwy. 59
Waukesha, WI 53189
United States of America

Remote Location	Scope
10017439 **Generac Mobile** **745 E. Knopf St.** **Berlin, WI 54923** **United States of America**	The remote location at Belin, WI performs the following primary functions: Parts and Components Receiving, Warehousing, and Shipping.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2025 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: **FPT Industrial S.p.A.**
(U.S. Manufacturer or Importer)

Certificate Number: SFPXL06.7DGS-006

Effective Date: 07/29/2024

Expiration Date: 12/31/2025

Byron J. Bunker, Division Director
Compliance Division

Issue Date: 07/29/2024

Revision Date: N/A

Model Year: 2025
Manufacturer Type: Original Engine Manufacturer
Engine Family: SFPXL06.7DGS

Mobile/Stationary Indicator: Stationary
Emissions Power Category: 130<=kW<225
Fuel Type: Diesel
After Treatment Devices: No After Treatment Devices Installed
Non-after Treatment Devices: No Non-After Treatment Devices Installed

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

The actual engine power may lie outside the limits of the Emissions Power Category shown above. See the certificate application for details.

University of Kentucky
Facilities Management
Office of the Vice President

June 26, 2026

Zachary Bittner
Environmental Control Manager
Kentucky Division for Air Quality
Permit Review Branch, Combustion Section
300 Sower Boulevard, 2nd Floor
Frankfort, Kentucky 40601

Submitted via eForms

RE: Minor Permit Revision Application for Samaritan Hospital Boiler Replacement
University of Kentucky – V-25-005
Agency Interest: 1104

Mr. Bittner:

The University of Kentucky (UK) is an educational institution in Lexington, KY, which owns an adjacent source, UK Good Samaritan Hospital (Samaritan Hospital), regulated as a single major source under the Title V permit program (herein referred to collectively as UK) and operates in accordance with Title V permit V-25-005, originally issued on January 23, 2026, by the Kentucky Division for Air Quality (KDAQ). The permit expires on January 23, 2031.

UK is submitting this minor permit revision application to replace an existing dual fuel-fired boiler at the Samaritan Hospital with a new dual fuel-fired boiler. The heat input rating of the new Samaritan 01 boiler is slightly less than unit it is replacing; thus, overall emissions at the facility will not increase as a result of the project.

APPLICATION SUMMARY

The changes associated with the Samaritan Hospital boiler replacement are submitted as a Minor Permit Revision (MPR) in accordance with 401 KAR 52:020, Section 14. A MPR is appropriate since the following are true:

- The new Samaritan 01 boiler will not violate any applicable requirement;
- The project does not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit.
- The project will not require or change any case-by-case determination of any emission limit or other standard.
- The project does not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement. UK is not seeking any emissions or operating restrictions for new Samaritan 01 boiler to avoid any regulatory applicability. Furthermore, there is no applicable condition without an underlying applicable requirement that would be affected by this project.
- The project is not a modification under Title 1 of the Act as this term is defined at 401 KAR 52:001, Section 1(52). This rule defines modification under Title I of the Act as "a change at a facility that would constitute a modification under 42 U.S.C. 7470 to 7491, or 42 U.S.C. 7501 to 7515." This includes PSD and non-attainment NSR modifications. Potential emissions from this project are far below the PSD significant emission rate (SER) for all pollutants, as shown in Attachment B.

The components required for a MPR, pursuant to 401 KAR 52:020, Section 14, are included in this application letter and its attachments. The required permit application forms (DEP7007AI, A, V, and N) are provided in **Attachment A**. A description of the Samaritan Hospital Boiler Replacement Project and regulatory review are provided within this letter, along with an analysis of potential emissions from the new Samaritan 01 boiler and associated equipment. Detailed supporting emission calculations are included in **Attachment B**). Lastly, suggested draft permit showing only the information that is new or different than the existing permit is provided in **Attachment C**.

The responsible official signature on the DEP7007AI form contained in Attachment A to this letter certifies that the information contained herein is true, accurate, and complete, including that the change meets the criteria for use of minor permit revision procedures. Use of these procedures is likewise requested pursuant to 401 KAR 52:020 Section 14(3)(c).

PROJECT DESCRIPTION

UK plans to replace its current 12 MMBtu/hr duel fuel-fired boiler EU 83 (Samaritan 01) with a new 10.5 MMBtu/hr duel fuel-fired boiler (proposed EU 116, Samaritan 01).

APPLICABLE REGULATIONS SUMMARY

The following subsections discuss the applicability of regulatory requirements to the new Samaritan 01 boiler.

New Source Review (NSR) / PSD

Federal construction permitting programs regulate new and modified sources of attainment pollutants under the PSD program and new and modified sources of non-attainment pollutants under Non-Attainment New Source Review (NA-NSR). UK is located in Fayette County, Kentucky, which is designated as in attainment/unclassifiable for all pollutants. Therefore, PSD permitting is potentially applicable to the facility. The PSD preconstruction permitting program in Kentucky has been approved by the US EPA and incorporated into the Kentucky State Implementation Plan (SIP) under 401 KAR 51:017 to implement the federal requirements of 40 CFR 51.166 or 52.21.

For the purposes of the PSD permitting program, a *major stationary source* can be summarized as:

- One of the 28 listed stationary sources that emits, or has the potential to emit, 100 tons per year (tpy) or more of any regulated NSR pollutant, where fugitive emissions from the listed source category must be included in the total; or
- Any source not belonging to one of the listed source categories that emits, or has the potential to emit, 250 tpy or more of any regulated NSR pollutant, where fugitive emissions are not included in the total.

One of the 28 listed stationary source categories (otherwise known as the List of 28) is "fossil fuel boilers (or combinations thereof) totaling more than 250 MMBtu/hr heat input", which applies to UK. The facility has a PTE greater than 100 tpy for particulate matter less than 10 microns and less than 2.5 microns ($PM_{10}/PM_{2.5}$), carbon monoxide (CO), nitrogen oxides (NO_X), and sulfur dioxide (SO_2) and is classified as an existing major stationary source.

As an existing major stationary source, PSD permitting is triggered for a regulated NSR pollutant only if the project is considered a major modification. To qualify as a major modification the project must result in both a significant emissions increase and a significant net emissions increase. As demonstrated by Table 1,

maximum potential emissions from the new Samaritan 01 boiler (i.e., the project emissions increase, PEI) are less than the significant emission rate (SER) for each regulated NSR pollutant, without the need for any restrictions on operation. Therefore, PSD permitting is not required for the Samaritan Hospital Boiler Replacement Project.

Table 1. Project Emissions Increase

KyEIS ID, Permit ID	Description	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)	SO_2 (tpy)
New Emission Units								
COMB46, EU116	Samaritan Hospital Boiler [a]	1.01	1.01	1.01	6.11	3.79	0.25	0.07
Emissions Increase Summary Samaritan Boiler Replacement		*1.01*	*1.01*	*1.01*	*6.11*	*3.79*	*0.25*	*0.07*
PSD/NSR Major Modification Threshold		25	15	10	40	100	40	40
Trigger PSD/NSR?		No	No	No	No	No	No	No

[a] Potential emissions for Samaritan Boiler 01 were determined by using the worst-case emissions on a lb/hr basis when firing natural gas versus fuel oil, at maximum operating capacity.

National Emissions Standards for Hazardous Air Pollutants

A major source of HAP is one with potential emissions in excess of 25 tpy for total combined HAP and/or in excess of 10 tpy for any individual HAP. UK's Title V permit includes emissions limits for combined HAP below 22.5 tpy and below 9.0 tpy for any individual HAP; therefore, UK is classified as an area source of HAP. As such, UK is subject to certain area-source NESHAP standards.

40 CFR 63 Subpart JJJJJJ – Industrial, Commercial and Institutional Boilers at Area Sources of HAP Emissions

NESHAP Subpart JJJJJJ applies to each new, reconstructed, or existing affected source, located at an area source of HAP. The affected source includes the collection of existing and each new or reconstructed industrial, commercial or institutional boilers within a subcategory listed in 40 CFR 63.11200. The new Samaritan 01 boiler will be subject to NESHAP Subpart JJJJJJ.

Pursuant to 40 CFR 63.11201, new Samaritan 01 boiler must meet applicable emission limits in Table 1 to Subpart JJJJJJ, comply with the work practice standards of Table 2, and comply with the operating limits in Table 3 at all times except during periods of startup and shutdown. These requirements are as follows (and detailed in the DEP7007V form in Attachment A):

Emission Limits: None

- Pursuant to 40 CFR 63.11210(f), new or reconstructed boilers that combust only ultra-low-sulfur liquid fuel as defined in §63.11237, are not subject to the PM emission limit in Table 1 of this regulation providing the facility monitors and records on a monthly basis the type of fuel combusted. A performance test is required if any fuel other than ULSD will be fired.

Work Practice Standards:

- Minimize the boiler's startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures.
- Conduct a tune-up of the boiler biennially as specified in §63.11223, or every 5 years when using an oxygen trim system that maintains an optimum air-to-fuel ratio.

Operating Limits: None

Notifications, Recordkeeping, and Reporting:
UK has several boilers with are already in compliance with NESHAP Subpart JJJJJJ and will comply with the periodic reporting requirements already in the permit, as well as additional recordkeeping and notification requirements for the affected liquid-fired boilers under 40 CFR 63.11225.

- The initial notification required by 40 CFR 63.11225(a)(2) is satisfied by this permit application.
- A notification of compliance status report (NOCS) is not required, pursuant to 40 CFR 63.11225(a)(4) because the new Samaritan 01 boiler is subject only to a requirement to conduct a biennial or 5-year tune-up.

New Source Performance Standards (NSPS)

40 CFR 60 Subpart Dc – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

NSPS Subpart Dc applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989, and that has a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr. The boiler will be subject to NSPS subpart Dc. The applicable requirements of NSPS Dc are already fully detailed within permit V-25-005 for in Section B for EUs 51, 51, and 83, and will apply in the same way to EU 116.

The applicable requirements of NSPS Dc are detailed in the DEP7007V forms in Attachment A.

Kentucky Administrative Regulations

401 KAR 59:015 – New Indirect Heat Exchangers

401 KAR 59:015 applies to indirect heat exchangers with a capacity greater than 1 MMBtu/hr and less than 250 MMBtu/hour and which commenced after April 9, 1972, and to indirect heat exchangers with a capacity greater than 250 MMBtu/hr and which commenced after August 17, 1971. The new Samaritan 01 boiler will be subject to the PM, opacity, and SO_2 emissions standards of this regulation.

PM shall not exceed 0.10 lb/MMBtu, pursuant to 401 KAR 59:015, Section 4(1)(c). Compliance is implicit based on the potential to emit emission factors while combusting natural gas or ULSD.

Opacity shall not exceed 20 percent, except for one 6-minute period up to 27 percent in 60 consecutive minutes, pursuant to 401 KAR 59:015, Section 4(2). These limits do not apply while building a new fire, as long as the method used and duration of bringing the boiler up to operating conditions is consistent with manufacturer's recommendations. Compliance is assured with this standard while the new Samaritan 01 boiler combusts natural gas. Consistent with the existing permit language for EU 83, compliance while new Samaritan 01 boiler combusts ULSD is based on qualitative visual observation of the opacity of emissions on a weekly basis while the affected facility is operating. If visible emissions from the stacks are observed (not including condensed water in the plume), UK shall determine the opacity using U.S. EPA Reference

Method 9. In lieu of determining the opacity using U.S. EPA Reference Method 9, UK shall immediately perform a corrective action which results in no visible emissions.

SO_2 emissions shall not exceed 0.8 lb/MMBtu, pursuant to 401 KAR 59:015, Section 5(1). Compliance with this limitation is assured through combustion of pipeline quality natural gas and ULSD, demonstrated by the fuel receipt records required by 40 CFR 60.49b(r)(1).

The startup and shutdown work practice standards of Section 7 of this regulation refer to the work practice standards establish under 40 CFR 63, Subpart JJJJJJ, Table 2.

401 KAR 63:020 – Potentially Hazardous Matter or Toxic Substances

Kentucky regulates the emissions of toxic air pollutant emissions through 401 KAR 63:020. KDAQ can require that dispersion modeling or other analyses be completed by facilities at permit renewal or when constructing equipment when there is an increase in toxic pollutant emissions, as defined under 401 KAR 63:020, Section 2(2), deemed to be "significant." This is done so that there is a documented basis for affirming that a facility does not cause an adverse impact. However, pursuant to 401 KAR 63:020, Section 1, the requirements of this rule are applicable only to the extent that such emissions are not elsewhere subject to the provisions of the KAR.

The new Samaritan 01 boiler emits toxic chemicals as a biproduct of fuel combustion; however, these emissions are elsewhere subject to the provisions of the KAR via their applicability to 40 CFR 63, Subpart JJJJJJ.

If you have any questions or comments about the information presented in this letter, please do not hesitate to call me at (270) 686-6520.

Sincerely,

Barry K. Swanson
Interim Vice President
Chief Facilities Officer

Attachments

ATTACHMENT A – DEP7007 Forms

DEP7007AI – Administrative Information
DEP7007A – Indirect Heat Exchangers
DEP7007N - Emissions
DEP7007V - Applicable Requirements

Division for Air Quality

300 Sower Boulevard

Frankfort, KY 40601

(502) 564-3999

DEP7007AI

Administrative Information

___ Section AI.1: Source Information

___ Section AI.2: Applicant Information

___ Section AI.3: Owner Information

___ Section AI.4: Type of Application

___ Section AI.5: Other Required Information

___ Section AI.6: Signature Block

___ Section AI.7: Notes, Comments, and Explanations

Additional Documentation

None

___ Additional Documentation attached

Source Name: University of Kentucky

KY EIS (AFS) #: 21- 067-00003

Permit #: V-25-005

Agency Interest (AI) ID: 1104

Date: Jun-26

Section AI.1: Source Information

Physical Location Address:	**Street:**	225 Frank D. Peterson Service Bldg.				
	City:	Lexington	**County:**	Fayette	**Zip Code:**	40506
Mailing Address:	**Street or P.O. Box:**	225 Frank D. Peterson Service Bldg.				
	City:	Lexington	**State:**	KY	**Zip Code:**	40506

Standard Coordinates for Source Physical Location

Longitude: -84.50496 (decimal degrees) **Latitude:** 38.03895 (decimal degrees)

Primary (NAICS) Category: University **Primary NAICS #:** 611310

Classification (SIC) Category: University **Primary SIC #:** 8221

Briefly discuss the type of business conducted at this site: The University of Kentucky is classified under Standard Industrial Code (SIC) 8221 for Colleges, Universities, and Professional Schools, and the Main Campus also includes UK HealthCare, which includes the hospitals and clinics of the University of Kentucky, and Samaritan Hospital. The majority of emission sources at are boilers and emergency generators, combusting natural gas, diesel, and coal.

Description of Area Surrounding Source: ☐ Rural Area ☐ Industrial Park ☐ Residential Area ☑ Urban Area ☐ Industrial Area ☐ Commercial Area

Is any part of the source located on federal land? ☐ Yes ☑ No

Number of Employees: ~17,000

Approximate distance to nearest residence or commercial property: 40 ft

Property Area: 600 acres

Is this source portable? ☐ Yes ☐ No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	☑ Currently Hold	☐ Need	☐ N/A
Solid Waste:	☐ Currently Hold	☐ Need	☑ N/A
RCRA:	☐ Currently Hold	☐ Need	☑ N/A
UST:	☐ Currently Hold	☐ Need	☑ N/A

Type of Regulated Waste Activity: ☐ Mixed Waste Generator ☐ Generator ☐ Recycler ☐ Other: _____ ☐ U.S. Importer of Hazardous Waste ☐ Transporter ☐ Treatment/Storage/Disposal Facility ☑ N/A

Section AI.2: Applicant Information

Applicant Name: University of Kentucky

Title: (if individual) N/A

Mailing Address:
Street or P.O. Box: 225 Frank D. Peterson Service Bldg.
City: Lexington **State:** KY **Zip Code:** 40506

Email: (if individual)

Phone: (859) 218-6265

Technical Contact

Name: Andrea Smith

Title: Air Quality Compliance Manager

Mailing Address:
Street or P.O. Box: 355 Cooper Dr.
City: Lexington **State:** KY **Zip Code:** 40506

Email: andrea.smith@uky.edu

Phone: (859) 218-6265

Air Permit Contact for Source

Name: Same as technical contact.

Title:

Mailing Address:
Street or P.O. Box:
City: **State:** **Zip Code:**

Email:

Phone:

Section AI.3: Owner Information

☑ **Owner same as applicant**

Name:

Title:

Mailing Address: **Street or P.O. Box:**

City: **State:** **Zip Code:**

Email:

Phone:

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position
State Owned University	

Section AI.4: Type of Application

Current Status: ☑ Title V ☐ Conditional Major ☐ State-Origin ☐ General Permit ☐ Registration ☐ None

Requested Action: *(check all that apply)*

☐ Name Change	☐ Initial Registration	☐ Significant Revision	☐ Administrative Permit Amendment
☐ Renewal Permit	☐ Revised Registration	☑ Minor Revision	☐ Initial Source-wide Operating Permit
☐ 502(b)(10)Change	☐ Extension Request	☐ Addition of New Facility	☐ Portable Plant Relocation Notice
☐ Revision	☐ Off Permit Change	☐ Landfill Alternate Compliance Submittal	☐ Modification of Existing Facilities
☐ Ownership Change	☐ Closure		

Requested Status: ☑ Title V ☐ Conditional Major ☐ State-Origin ☐ PSD ☐ NSR ☐ Other: _____

Is the source requesting a limitation of potential emissions? ☐ Yes ☑ No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
☐ Particulate Matter		☐ Single HAP	9 tpy (retain current limit)
☐ Volatile Organic Compounds (VOC)		☐ Combined HAPs	22.5 tpy (retain current limit)
☐ Carbon Monoxide		☐ Air Toxics (40 CFR 68, Subpart F)	
☐ Nitrogen Oxides		☐ Carbon Dioxide	
☐ Sulfur Dioxide		☐ Greenhouse Gases (GHG)	
☐ Lead		☐ Other	

For New Construction:

Proposed Start Date of Construction: *(MM/YYYY)* Fall 2026 **Proposed Operation Start-Up Date:** *(MM/YYYY)* Fall 2026

For Modifications:

Proposed Start Date of Modification: *(MM/YYYY)* _____ **Proposed Operation Start-Up Date:** *(MM/YYYY)* _____

Applicant is seeking coverage under a permit shield. ☐ **Yes** ☑ **No** **Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.**

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

- [x] DEP7007A Indirect Heat Exchangers and Turbines
- [ ] DEP7007B Manufacturing or Processing Operations
- [ ] DEP7007C Incinerators and Waste Burners
- [ ] DEP7007F Episode Standby Plan
- [ ] DEP7007J Volatile Liquid Storage
- [ ] DEP7007K Surface Coating or Printing Operations
- [ ] DEP7007L Mineral Processes
- [ ] DEP7007M Metal Cleaning Degreasers
- [x] DEP7007N Source Emissions Profile
- [ ] DEP7007P Perchloroethylene Dry Cleaning Systems
- [ ] DEP7007R Emission Offset Credit
- [ ] DEP7007S Service Stations
- [ ] DEP7007T Metal Plating and Surface Treatment Operations
- [x] DEP7007V Applicable Requirements and Compliance Activities
- [ ] DEP7007Y Good Engineering Practice and Stack Height Determination
- [ ] DEP7007AA Compliance Schedule for Non-complying Emission Units
- [ ] DEP7007BB Certified Progress Report
- [ ] DEP7007CC Compliance Certification
- [ ] DEP7007DD Insignificant Activities
- [ ] DEP7007EE Internal Combustion Engines
- [ ] DEP7007FF Secondary Aluminum Processing
- [ ] DEP7007GG Control Equipment
- [ ] DEP7007HH Haul Roads
- [ ] Confidentiality Claim
- [ ] Ownership Change Form
- [ ] Secretary of State Certificate
- [ ] Flowcharts or diagrams depicting process
- [ ] Digital Line Graphs (DLG) files of buildings, roads, etc.
- [ ] Site Map
- [ ] Map or drawing depicting location of facility
- [ ] Safety Data Sheet (SDS)
- [ ] Emergency Response Plan
- [ ] Other: _____

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

Authorized Signature	6/29/2026 **Date**
Barry K. Swanson **Type or Printed Name of Signatory**	Interim Vice President, Chief Facilities Officer **Title of Signatory**

*Responsible official as defined by 401 KAR 52:001.

Section AI.7: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007A

Indirect Heat Exchangers and Turbines

___ Section A.1: General Information
___ Section A.2: Operating and Fuel Information
___ Section A.3: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI, DEP7007N, DEP7007V, and DEP7007GG.
____ Manufacturer's specifications

Source Name: University of Kentucky
KY EIS (AFS) #: 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: Jun-26

Section A.1: General Information

Emission Unit #	Emission Unit Name	Process ID	Process Name	Identify General Type: Indirect Heat Exchanger, Gas Turbine, or Combustion Turbine	Indirect Heat Exchanger Configuration	Manufacturer	Model No./ Serial No.	Proposed/Actual Date of Construction Commencement *(MM/YYYY)*	SCC Code	SCC Units	Control Device ID	Stack ID
EU116	Samaritan Hospital Boiler 01	1	Natural Gas	Indirect Heat Exchanger	Industrial Watertube Boiler	Victory Energy	JBS(X)	Fall 2026	10300602	Million Cubic Feet Natural Gas Burned	na	S-116
EU116	Samaritan Hospital Boiler 01	2	No. 2 Fuel Oil Back-up	Indirect Heat Exchanger	Industrial Watertube Boiler	Victory Energy	JBS(X)	Fall 2026	10300502	1000 Gallons Distillate Oil Burned	na	S-116

Section A.2: Operating and Fuel Information

Emission Unit #	If multipurpose unit, identify the percentage of use by purpose				Rated Capacity Heat Input *(MMBTU/hr)*	Rated Capacity Power Output		Describe Operating Scenario (only if this unit will be used in different configurations)	Classify Fuel as Primary or Secondary	Identify Fuel Type: Coal, Natural Gas, Wood, Biomass, Landfill/Digester Gas, Fuel Oil # (specify 1-6), or Other	Heat Content (HHV)		Maximum Operating Hours	Ash Content *(%)*	Sulfur Content *(%)*
	Space Heat	Process Heat	Power	Emergency			*(Specify units: hp, MW, or lb steam/hr)*					*(Specify units: Btu/lb, Btu/gal, or Btu/scf)*			
EU116					10.5	250	hp	N/A	Primary	Natural Gas	1,020	Btu/scf	8,760	N/A	N/A
EU116					9.766	250	hp	N/A	Secondary	No. 2 Fuel Oil	140	MMBtu/Mgal	8,760	N/A	0.0015%

Section A.3: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007N

Source Emissions Profile

__ Section N.1: Emission Summary
__ Section N.2: Stack Information
__ Section N.3: Fugitive Information
__ Section N.4: Notes, Comments, and Explanations

Additional Documentation

___ Complete DEP7007AI

Source Name: University of Kentucky
KY EIS (AFS) #: 21- 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: Jun-26

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU116	Samaritan Hospital Boiler 01	1	Natural Gas	N/A	N/A	S-116	0.0103	CO	84.00	AP-42 Table 1.4-1, 04/26	--	--	0.86	0.86	3.79	3.79
								NOx	100.00	AP-42 Table 1.4-1, 04/26	--	--	1.03	1.03	4.51	4.51
								PM	7.60	AP-42 Table 1.4-2, 04/26	--	--	0.08	0.08	0.34	0.34
								PM10	7.60	AP-42 Table 1.4-2, 04/26	--	--	0.08	0.08	0.34	0.34
								PM2.5	7.60	AP-42 Table 1.4-2, 04/26	--	--	0.08	0.08	0.34	0.34
								SO2	0.60	AP-42 Table 1.4-2, 04/26	--	--	6.18E-03	6.18E-03	0.03	0.03
								VOC	5.50	AP-42 Table 1.4-2, 04/26	--	--	0.06	0.06	0.25	0.25
								Total HAPs	1.89	AP-42 Table 1.4-3 & 1.4-4, 07/98	--	--	0.02	0.02	0.09	0.09
								n-Hexane	1.80	AP-42 Table 1.4-3, 07/98	--	--	0.02	0.02	0.08	0.08
								CO2	120,000	AP-42 Table 1.4-2, 04/26	--	--	1,235	1,235	5,411	5,411
								CH4	2.30	AP-42 Table 1.4-2, 04/26	--	--	0.02	0.02	0.10	0.10
								N2O	2.20	AP-42 Table 1.4-2, 04/26	--	--	0.02	0.02	0.10	0.10
								CO2e	120,647	40 CFR 98, Subpart A	--	--	1,242	1,242	5,440	5,440

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity *(SCC Units/hour)*	Pollutant	Uncontrolled Emission Factor *(lb/SCC Units)*	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency *(%)*	Control Efficiency *(%)*	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential *(lb/hr)*	Controlled Potential *(lb/hr)*	Uncontrolled Potential *(tons/yr)*	Controlled Potential *(tons/yr)*
EU116	Samaritan Hospital Boiler 01	2	No. 2 Fuel Oil Back-up	N/A	N/A	S-116	0.0698	CO	5.00	AP-42 Table 1.3-1, 05/10	--	--	0.35	0.35	1.53	1.53
								NOx	20.00	AP-42 Table 1.3-1, 05/10	--	--	1.40	1.40	6.11	6.11
								PM	3.30	AP-42 Table 1.3-1 & 1.3-2, 05/10	--	--	0.23	0.23	1.01	1.01
								PM10	3.30	AP-42 Table 1.3-1 & 1.3-2, 05/10	--	--	0.23	0.23	1.01	1.01
								PM2.5	3.30	AP-42 Table 1.3-1 & 1.3-2, 05/10	--	--	0.23	0.23	1.01	1.01
								SO2	0.21	AP-42 Table 1.3-1, 05/10	--	--	0.01	0.01	0.07	0.07
								VOC	0.56	AP-42 Table 1.3-3, 05/10	--	--	0.04	0.04	0.17	0.17
								Total HAPs	0.05	AP-42 Table 1.3-9 & 1.3-10, 05/10	--	--	3.34E-03	3.34E-03	0.01	0.01
								Formaldehyde	0.03	AP-42 Table 1.3-9, 05/10	--	--	2.30E-03	2.30E-03	0.01	0.01
								CO2	22,300	AP-42 Table 1.3-12, 05/10	--	--	1,556	1,556	6,813	6,813
								CH4	0.22	AP-42 Table 1.3-3, 05/10	--	--	0.02	0.02	0.07	0.07
								N2O	0.26	AP-42 Table 1.3-8, 05/10	--	--	0.02	0.02	0.08	0.08
								CO2e	22,375	40 CFR 98, Subpart A	--	--	1,561	1,561	6,836	6,836

Section N.2: Stack Information

UTM Zone: 16

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter *(ft)*	Height *(ft)*	Base Elevation *(ft)*	Northing *(m)*	Easting *(m)*	Flowrate *(acfm)*	Temperature *(°F)*	Exit Velocity *(ft/sec)*
S-116	Samaritan Hospital Boiler 01	1.4	8.5	985.0	718,960	4,213,080	3,527	400	8.67

Section N.3: Fugitive Information

UTM Zone:

Emission Unit #	Emission Unit Name	Process ID	Area Physical Data		Area UTM Coordinates		Area Release Data	
			Length of the X Side *(ft)*	Length of the Y Side *(ft)*	Northing *(m)*	Easting *(m)*	Release Temperature *(°F)*	Release Height *(ft)*
Not Applicable for this Notification								

Section N.4: Notes, Comments, and Explanations

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007V
Applicable Requirements and Compliance Activities

___ Section V.1: Emission and Operating Limitation
___ Section V.2: Monitoring Requirem
___ Section V.3: Recordkeeping Requi
___ Section V.4: Reporting Requireme
___ Section V.5: Testing Requirements
___ Section V.6: Notes, Comments, and Explanatio

Additional Documentation

___ Complete DEP7007AI

Source Name: University of Kentucky
KY EIS (AFS) # 067-00003
Permit #: V-25-005
Agency Interest (AI) ID: 1104
Date: Jun-26

Section V.1: Emission and Operating Limitation(s)

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU116	Samaritan Hospital Boiler 01	NESHAP JJJJJJ: 401 KAR 59:015, Section 7(2)(c)	N/A	N/A	N/A	Meet the work practice standards established in 40 CFR Part 63, Table 2 to Subpart JJJJJJ, as established in 401 KAR 63:002, Section 2(4)(jjjjj).	Refer to V.3 recordkeeping and V.4 reporting requirements.
EU116	Samaritan Hospital Boiler 01	NESHAP JJJJJJ: 401 KAR 59:015, Section 7(2)(c) and 40 CFR 63.11201(b) referencing Table 2, Item 1.	N/A	N/A	N/A	Minimize the boilers' startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures. If manufacturer's recommended procedures are not available, the permittee shall follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available.	Refer to V.3 recordkeeping and V.4 reporting requirements.

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU116	Samaritan Hospital Boiler 01	NESHAP JJJJJJ: 401 KAR 59:015, Section 7(2)(c); 40 CFR 63.11201(b) referencing Table 2, Item 5; and 40 CFR 63.11223(b)	N/A	N/A	N/A	Conduct a tune-up of the boiler every 2 years, or every 5 years when oxygen trim system is operated (in lieu of biennially), to demonstrate continuous compliance as specified in 40 CFR 63.11223(b)(1) through (7).	Perform a tune-up within 180 days of startup. Refer to V.3 recordkeeping and V.4 reporting requirements.
EU116	Samaritan Hospital Boiler 01	NESHAP JJJJJJ: 40 CFR 63.11205(a)	N/A	N/A	N/A	Operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.	Minimize startup and shutdown events.
EU116	Samaritan Hospital Boiler 01	401 KAR 59:015, Section 4(1)(c)	PM	0.10 lb/MMBtu	N/A	Particulate matter (PM) emissions from each stack shall not exceed 0.10 lbs/MMBtu.	Units are assumed in compliance with the 401 KAR 59:015 PM emission standard while combusting natural gas or fuel oil based on AP-42 emission factors, manufacturer specifications or most recently approved stack test.
EU116	Samaritan Hospital Boiler 01	NESHAP JJJJJJ: 40 CFR 63.11210(f)	N/A	N/A	N/A	The permittee is not subject to the PM emission limitation in 40 CFR 63, Subpart JJJJJJ, Table 1 while combusting only ultra-low-sulfur liquid fuel. If the permittee intends to burn a fuel other than ultra-low-sulfur liquid fuel or gaseous fuels as defined in 40 CFR 63.11237, the permittee shall conduct a performance test within 60 days of burning the new fuel.	Compliance is assumed while combusting ultra-low-sulfur liquid fuel.
EU116	Samaritan Hospital Boiler 01	401 KAR 59:015, Section 4(2)(a)	Visible Emissions (VE)	20% Opacity	N/A	Opacity emissions from each stack shall not exceed 20 percent opacity except: a maximum of 27 percent opacity shall be allowed for one six minute period in any 60 consecutive minutes.	Units are assumed to be in compliance while combusting natural gas. Refer to V.2 monitoring when firing fuel oil.

Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EU116	Samaritan Hospital Boiler 01	401 KAR 59:015, Section 4(2)(c)	Visible Emissions (VE)	20% Opacity	N/A	Opacity emissions from each stack shall not exceed 20 percent opacity except: for emissions caused by building a new fire, emissions during the period required to bring the boiler up to operating conditions shall be allowed, if the method used is recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.	Units are assumed to be in compliance while combusting natural gas. Refer to V.2 monitoring when firing fuel oil.
EU116	Samaritan Hospital Boiler 01	401 KAR 59:015, Section 5(1)	SO2	0.8 lb/MMBtu	N/A	Sulfur dioxide (SO2) emissions from each stack shall not exceed 0.8 lb/MMBtu.	Units are assumed to be in compliance while combusting natural gas. While burning fuel oil, the facility shall obtain fuel receipts that certify that the oil meets the definition of distillate oil and certify reports to the Administrator certifying that only very low sulfur oil (per 40 CFR 60, Subpart Db) was
EU116	Samaritan Hospital Boiler 01	NSPS Dc: 40 CFR 60.42c(d) & 40 CFR 60.42c(i)	Fuel Oil (USLD) Sulfure Content	0.5 wt % Sulfure	N/A	While combusting fuel oil, SO2 emissions shall not exceed 0.50 lb/MMBtu (215 ng/J); or,as an alternative, the permittee shall not combust liquid fuel that contains greater than 0.5weight percent sulfur. The SO2 standard under 40 CFR 60.42c applies at all times, including periods of startup, shutdown, and malfunction.	Purchase only compliant diesel fuel and submit reports to the Administrator certifying that only very low sulfur oil is used.

Section V.2: Monitoring Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EU116	Samaritan Hospital Boiler 01	N/A	NSPS Dc: 40 CFR 60.48c(g)(2)	Fuel Usage	Monitor the amount of natural gas combusted (in MMscf) and the amount of fuel oil combusted (in gallons) on a monthly
EU116	Samaritan Hospital Boiler 01	N/A	401 KAR 52:020, Section 10	Fuel Usage	While combusting fuel oil, the permittee shall perform a qualitative visual observation of the opacity of emissions from each stack on a weekly basis while the affected facility is operating. If visible emissions from the stacks are observed (not Including condensed water in the plume), the permittee shall determine the opacity using U.S. EPA Reference Method 9. In lieu of determining the opacity using U.S. EPA Reference Method 9, the permittee shall immediately perform a corrective action which results in no visibleemissions (not including condensed water in the plume).

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU116	Samaritan Hospital Boiler 01	N/A	NSPS Dc: 40 CFR 60.48c(g)(2)	Fuel Usage	Maintain records of the amount of natural gas combusted (in MMscf), and the amount of fuel oil combusted (in gallons) on a monthly basis.
EU116	Samaritan Hospital Boiler 01	Visible Emissions (VE)	401 KAR 52:020, Section 10	Visible Emissions (VE)	A log of the qualitative visual observations made as specified in V.2 monitoring including the date, time, initials of observer, whether any emissions were observed (yes/no), and any U.S. EPA Reference Method 9 readings taken.
EU116	Samaritan Hospital Boiler 01	N/A	NSPS Dc: 40 CFR 60.48c(f)	Fuel Oil Sulfur Content	The permittee shall maintain records of fuel supplier certification for fuel oil that includes the following information: 1. The name of the oil supplier; 2. A statement from the oil supplier that the oil complies with the specification under the definition of distillate oil in 40 CFR 60.41c; and 3. The sulfur content or maximum sulfur content of the oil.
EU116	Samaritan Hospital Boiler 01	CO	NESHAP JJJJJJ: 40 CFR 63.11210(f)	Fuel Type	Monitor and record on a monthly basis the type of fuel combusted in the unit.
EU116	Samaritan Hospital Boiler 01	CO	NESHAP JJJJJJ: 40 CFR 63.11223(b)(6)	Concentration	The permittee shall maintain on-site and submit, if requested by the Administrator, a report containing the concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of each boiler; a description of any corrective actions taken as a part of the tune-up of each boiler; and the type and amount of fuel used over the 12 months prior to the tune-up of each boiler. Units sharing a fuel meter may estimate the fuel use by each unit.

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EU116	Samaritan Hospital Boiler 01	N/A	NESHAP JJJJJJ: 40 CFR 63.11225(c)	N/A	The permittee shall maintain a copy of the following: - Each notification and report that was submitted to comply with 40 CFR 63, Subpart JJJJJJ and all documentation supporting any Initial Notification or Notification of Compliance Status that was submitted - Records to document conformance with the work practices, emission reduction measure, and management practices required by 40 CFR 63.11214 and 40 CFR 63.11223 - Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment - Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in 40 CFR 63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation - Records of all inspection and monitoring data required by 40 CFR 63.11221 and 63.11222.
EU116	Samaritan Hospital Boiler 01	N/A	NESHAP JJJJJJ: 40 CFR 63.11225(d)	N/A	Records shall be in a form suitable and readily available for expeditious review. The permittee shall keep each record for 5 years following the date of each recorded action. The permittee shall keep each record on-site or be accessible from a central location by computer or other means that instantly provide access at the site for at least 2 years after the date of each recorded action. The permittee may keep the records off site for the remaining 3 years.

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EU116	Samaritan Hospital Boiler 01	N/A	NSPS Dc: 40 CFR 60.48c(e)	Excess Emission Reports	The permittee shall submit reports including fuel oil fuel supplier certifications with a statement signed by the permittee that the records of fuel supplier certification submitted represent all of the fuel oil combusted during the reporting period.
EU116	Samaritan Hospital Boiler 01	N/A	NESHAP JJJJJJ: 40 CFR 63.11225(a)(1) and (2)	Initial Startup Notification	The permittee shall submit to the Administrator all of the notifications in 40 CFR 63.7(b); 63.8(e) and (f); and 63.9(b) through (e), (g), and (h) that apply.
EU116	Samaritan Hospital Boiler 01	N/A	NESHAP JJJJJJ: 40 CFR 63.11225(b)(1) and (2)	Annual Compliance Certification	The permittee shall prepare, by March 1 of each year, and submit to the delegated authority upon request, an annual compliance certification report for the previous calendar year containing the company name and address and a statement by a responsible official, with the official's name, title, phone number, email address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of 40 CFR 63, Subpart JJJJJJ.

Section V.5: Testing Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Tested	Description of Testing
EU116	Samaritan Hospital Boiler 01	N/A	401 KAR 50:045, Section 1 and 401 KAR 59:005, Section 2(2)].	N/A	Testing shall be conducted at such time as may be requested by the Cabinet.

Section V.6: Notes, Comments, and Explanations

ATTACHMENT B - Emissions Calculations

1. Project Emissions Summary Table

> The table below tallies the project emission increases associated with the proposed Samaritan Boiler Replacement Project. Emissions decreases are not represented.

KyEIS ID, Permit ID	Description	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	NO_X (tpy)	CO (tpy)	VOC (tpy)	SO_2 (tpy)
New Emission Units								
COMB46, EU116	Samaritan Hospital Boiler [a]	1.01	1.01	1.01	6.11	3.79	0.25	0.07
Emissions Increase Summary Samaritan Boiler Replacement		*1.01*	*1.01*	*1.01*	*6.11*	*3.79*	*0.25*	*0.07*
PSD/NSR Major Modification Threshold		25	15	10	40	100	40	40
Trigger PSD/NSR?		**No**	**No**	**No**	**No**	**No**	**No**	**No**

[a] Potential emissions for Samaritan Boiler 01 were determined by using the worst-case emissions on a lb/hr basis when firing natural gas versus fuel oil, at maximum operating capacity.

2. Emissions Associated with EU116 Samaritan Hospital Boiler 01 (Natural Gas)

2.1 Boiler Power and Fuel Consumption Data

Specific Fuel Consumption Rate in MMBtu/hr:	10.50	MMBtu/hr
Calculated Specific Fuel Consumption Rate in MMscf/hr:	0.0103	MMscf/hr
Annual Operating Hours:	8,760	hrs
Heat Content of Natural Gas (normalized):	1,020	Btu/scf

2.2 Source Classification Code

> Emissions are tied to the SCC code for natural gas fueled boilers listed below.

SCC:	10300602
SCC Description:	External Combustion Boilers, Commercial/Institutional (1-03), Natural Gas (1-03-006), 10-100 Million Btu/hr (1-03-006-02)
SCC Units:	Million Cubic Feet Natural Gas

2.3 Emission Calculation Methodology and Emission Factors

> Emission factors for criteria pollutants are based on emission factors in AP-42 Table 1.4-1 and 1.4-2 for Natural Gas Combustion (04/26 edition). PM10 and PM2.5 emission factors are conservatively assumed to equal PM.

2.3.1 NOx

NO_X emission factor in terms of SCC units:	100.00	lb/MMscf	AP-42 Table 1.4-1, 04/26

2.3.2 CO

CO emission factor in terms of SCC units:	84.00	lb/MMscf	AP-42 Table 1.4-1, 04/26

2.3.3 VOC

VOC emission factor in terms of SCC units:	5.50	lb/MMscf	AP-42 Table 1.4-2, 04/26

2.3.4 PM

PM filterable emission factor in terms of SCC units:	1.90	lb/MMscf	AP-42 Table 1.4-2, 04/26
PM condensable emission factor in terms of SCC units:	5.70	lb/MMscf	AP-42 Table 1.4-2, 04/26
PM emission factor in terms of SCC units:	7.60	lb/MMscf	AP-42 Table 1.4-2, 04/26

2.3.5 PM10

PM10 filterable emission factor in terms of SCC units:	1.90	lb/MMscf	AP-42 Table 1.4-2, 04/26
PM condensable emission factor in terms of SCC units:	5.70	lb/MMscf	AP-42 Table 1.4-2, 04/26
PM10 emission factor in terms of SCC units:	7.60	lb/MMscf	AP-42 Table 1.4-2, 04/26

2.3.6 PM2.5

PM2.5 filterable emission factor in terms of SCC units:	1.90	lb/MMscf	AP-42 Table 1.4-2, 04/26
PM condensable emission factor in terms of SCC units:	5.70	lb/MMscf	AP-42 Table 1.4-2, 04/26
PM2.5 emission factor in terms of SCC units:	7.60	lb/MMscf	AP-42 Table 1.4-2, 04/26

2.3.7 SO2

SO2 emission factor in terms of SCC units:	0.60	lb/MMscf	AP-42 Table 1.4-2, 04/26

2.3.8 Lead

Lead emission factor in terms of SCC units:	0.0005	lb/MMscf	AP-42 Table 1.4-2, 04/26

2. Emissions Associated with EU116 Samaritan Hospital Boiler 01 (Natural Gas)

2.3.9 HAP Emission Estimates

> Emission factors for organic HAP compounds expected to be emitted are based on emission factors in AP-42 Table 1.4-3 (04/26

	CAS #	HAP?	Emission Factor (lb/MMscf)	Emission Factor Basis
Acenaphthene	83-32-9	Y	1.80E-06	AP-42 Table 1.4-3, 07/98
Acenaphthylene	208-96-8	Y	1.80E-06	AP-42 Table 1.4-3, 07/98
Anthracene	120-12-7	Y	2.40E-06	AP-42 Table 1.4-3, 07/98
Benz(a)anthracene	56-55-3	Y	1.80E-06	AP-42 Table 1.4-3, 07/98
Benzene	71-43-2	Y	2.10E-03	AP-42 Table 1.4-3, 07/98
Benzo(b)fluoranthene	205-99-2	Y	1.80E-06	AP-42 Table 1.4-3, 07/98
Benzo(a)pyrene	50-32-8	Y	1.20E-06	AP-42 Table 1.4-3, 07/98
Benzo(g,h,i)perylene	191-24-2	Y	1.20E-06	AP-42 Table 1.4-3, 07/98
Benzo(k)flouranthene	205-82-3	Y	1.80E-06	AP-42 Table 1.4-3, 07/98
Chrysene	218-01-9	Y	1.80E-06	AP-42 Table 1.4-3, 07/98
7,12-Dimethylbenz(a)anthracene		Y	1.60E-05	AP-42 Table 1.4-3, 07/98
Dibenzo(a,h)anthracene	53-70-3	Y	1.20E-06	AP-42 Table 1.4-3, 07/98
Dichlorobenzene	25321-22-6	Y	1.20E-03	AP-42 Table 1.4-3, 07/98
Fluoranthene	206-44-0	Y	3.00E-06	AP-42 Table 1.4-3, 07/98
Fluorene	86-73-7	Y	2.80E-06	AP-42 Table 1.4-3, 07/98
Formaldehyde	50-00-0	Y	7.50E-02	AP-42 Table 1.4-3, 07/98
3-Methylchloranthrene	56-49-5	Y	1.80E-06	AP-42 Table 1.4-3, 07/98
2-Methylnaphthalene	91-57-6	Y	2.40E-05	AP-42 Table 1.4-3, 07/98
n-Hexane	110-54-3	Y	1.80E+00	AP-42 Table 1.4-3, 07/98
Indeno(1,2,3-cd)pyrene	193-39-5	Y	1.80E-06	AP-42 Table 1.4-3, 07/98
Naphthalene	91-20-3	Y	6.10E-04	AP-42 Table 1.4-3, 07/98
Phenanthrene	85-01-8	Y	1.70E-05	AP-42 Table 1.4-3, 07/98
Pyrene	129-00-0	Y	5.00E-06	AP-42 Table 1.4-3, 07/98
Toluene	108-88-3	Y	3.40E-03	AP-42 Table 1.4-3, 07/98
Total Organic HAPs			1.88	

> Emission factors for metallic HAP compounds expected to be emitted are based on emission factors in AP-42 Table 1.4-4 (07/98 Edition).

	CAS #	HAP?	Emission Factor (lb/MMscf)	Emission Factor Basis
Arsenic	7440-38-2	Y	2.00E-04	AP-42 Table 1.4-4,04/26
Beryllium	7440-41-7	Y	1.20E-05	AP-42 Table 1.4-4,04/26
Cadmium	7440-43-9	Y	1.10E-03	AP-42 Table 1.4-4,04/26
Chromium	7440-47-3	Y	1.40E-03	AP-42 Table 1.4-4,04/26
Cobalt	7440-48-4	Y	8.40E-05	AP-42 Table 1.4-4,04/26
Manganese	7439-96-5	Y	3.80E-03	AP-42 Table 1.4-4,04/26
Mercury	7439-97-6	Y	2.60E-04	AP-42 Table 1.4-4,04/26
Nickel	7440-02-0	Y	2.10E-03	AP-42 Table 1.4-4,04/26
Selenium	7782-49-2	Y	2.40E-05	AP-42 Table 1.4-4,04/26
Total Metallic HAPs			8.98E-03	

2. Emissions Associated with EU116 Samaritan Hospital Boiler 01 (Natural Gas)

2.3.10 GHG Emission Factors

> Emission factors for GHG pollutants are based on emission factors in AP-42 Table 1.4-2 for Natural Gas Combustion (04/26 edition).

Global Warming Potentials of GHGs per 40 CFR 98 Subpart A, Table A-1.

CO2	1
CH4	28
N2O	265

Pollutant	Emission Factor (lb/MMscf)	Emission Factor Basis
CO2	120,000	AP-42 Table 1.4-2, 04/26
CH4	2.3	AP-42 Table 1.4-2, 04/26
N2O	2.2	AP-42 Table 1.4-2, 04/26
CO2e	120,647	40 CFR 98, Subpart A

2.4 Summary of Boiler Potential Emissions

Pollutant	Emission Factor (lb/MMscf)	Basis	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
NOx	100.0	AP-42 Table 1.4-1, 04/26	1.029	4.51
CO	84.0	AP-42 Table 1.4-1, 04/26	0.865	3.79
VOC	5.50	AP-42 Table 1.4-2, 04/26	0.0566	0.248
PM	7.60	AP-42 Table 1.4-2, 04/26	0.0782	0.343
PM10	7.60	AP-42 Table 1.4-2, 04/26	0.0782	0.343
PM2.5	7.60	AP-42 Table 1.4-2, 04/26	0.0782	0.343
SO2	0.60	AP-42 Table 1.4-2, 04/26	0.0062	0.0271
n-Hexane	1.80	AP-42 Table 1.4-3, 07/98	0.0185	0.0812
Total HAPs	1.89	AP-42 Table 1.4-3 & 1.4-4, 07/98	0.0195	0.0853
CO2	120,000	AP-42 Table 1.4-2, 04/26	1,235.29	5,410.59
CH4	2.30	AP-42 Table 1.4-2, 04/26	2.37E-02	1.04E-01
N2O	2.20	AP-42 Table 1.4-2, 04/26	2.26E-02	9.92E-02
CO2e	120,647	40 CFR 98, Subpart A	1,241.96	5,439.78

3. Emissions Associated with EU116 Samaritan Hospital Boiler 01 (#2 Fuel Oil)

3.1 Boiler Power and Fuel Consumption Data

Specific Fuel Consumption Rate in MMBtu/hr:	9.766	MMBtu/hr
Calculated Specific Fuel Consumption Rate in Mgal/hr:	0.0698	Mgal/hr
Heat Content of #2 Fuel Oil:	140,000	Btu/gal
Maximum Annual Operating Hours:	8,760	hrs

3.2 Source Classification Code

> Emissions are tied to the SCC code for #2 fuel oil fueled boilers listed below.

SCC:	10300502
SCC Description:	External Combustion Boilers, Commercial/Institutional (1-03), Distillate Oil (1-03-005), 10-100 Million Btu/hr ** (1-03-005-02)
SCC Units:	1000 Gallons Distillate Oil Burned

3.3 Emission Calculation Methodology and Emission Factors

> Emission factors for criteria pollutants are based on emission factors in AP-42 Table 1.3-1, 1.3-2, and 1.3-3 for Fuel Oil Combustion (05/10 edition). PM2.5 and PM10 emission factors are conservatively based on the PM emission factor. The VOC emission factor is based on the TOC emission factor.

3.3.1 NOx

NO_X emission factor in terms of SCC units:	20.00	lb/Mgal	AP-42 Table 1.3-1, 05/10

3.3.2 CO

CO emission factor in terms of SCC units:	5.00	lb/Mgal	AP-42 Table 1.3-1, 05/10

3.3.3 VOC

VOC emission factor in terms of SCC units:	0.56	lb/Mgal	AP-42 Table 1.3-3, 05/10

3.3.4 PM

PM filterable emission factor in terms of SCC units:	2.00	lb/Mgal	AP-42 Table 1.3-1, 05/10
PM condensable emission factor in terms of SCC units:	1.30	lb/Mgal	AP-42 Table 1.3-2, 05/10
PM emission factor in terms of SCC units:	3.30	lb/Mgal	AP-42 Table 1.3-1 & 1.3-2, 05/10

3.3.5 PM10

PM10 filterable emission factor in terms of SCC units:	2.00	lb/Mgal	AP-42 Table 1.3-1, 05/10
PM condensable emission factor in terms of SCC units:	1.30	lb/Mgal	AP-42 Table 1.3-2, 05/10
PM10 emission factor in terms of SCC units:	3.30	lb/Mgal	AP-42 Table 1.3-1 & 1.3-2, 05/10

3.3.6 PM2.5

PM2.5 filterable emission factor in terms of SCC units:	2.00	lb/Mgal	AP-42 Table 1.3-1, 05/10
PM condensable emission factor in terms of SCC units:	1.30	lb/Mgal	AP-42 Table 1.3-2, 05/10
PM2.5 emission factor in terms of SCC units:	3.30	lb/Mgal	AP-42 Table 1.3-1 & 1.3-2, 05/10

3.3.7 SO2

SO2 emission factor in terms of SCC units:	0.21	lb/Mgal	AP-42 Table 1.3-1, 05/10 (0.0015% sulfur content)

3. Emissions Associated with EU116 Samaritan Hospital Boiler 01 (#2 Fuel Oil)

3.3.8 HAP Emission Estimates

> Emission factors for organic HAP compounds expected to be emitted are based on emission factors in AP-42 Table 1.3-9 (05/10 Edition).

	CAS #	HAP?	Emission Factor (lb/Mgal)	Emission Factor Basis
Acenaphthene	83-32-9	Y	2.11E-05	AP-42 Table 1.3-9, 05/10
Acenaphthylene	208-96-8	Y	2.53E-07	AP-42 Table 1.3-9, 05/10
Anthracene	120-12-7	Y	1.22E-06	AP-42 Table 1.3-9, 05/10
Benz(a)anthracene	56-55-3	Y	4.01E-06	AP-42 Table 1.3-9, 05/10
Benzene	71-43-2	Y	2.14E-04	AP-42 Table 1.3-9, 05/10
Benzo(b,k)fluoranthene	5-99-2, 205-8	Y	1.48E-06	AP-42 Table 1.3-9, 05/10
Benzo(g,h,i)perylene	191-24-2	Y	2.26E-06	AP-42 Table 1.3-9, 05/10
Chrysene	218-01-9	Y	2.38E-06	AP-42 Table 1.3-9, 05/10
Dibenzo(a,h)anthracene	53-70-3	Y	1.67E-06	AP-42 Table 1.3-9, 05/10
Ethylbenzene	100-41-4	Y	6.36E-05	AP-42 Table 1.3-9, 05/10
Fluoranthene	206-44-0	Y	4.84E-06	AP-42 Table 1.3-9, 05/10
Fluorene	86-73-7	Y	4.47E-06	AP-42 Table 1.3-9, 05/10
Formaldehyde	50-00-0	Y	3.30E-02	AP-42 Table 1.3-9, 05/10
Indeno(1,2,3-cd)pyrene	193-39-5	Y	2.14E-06	AP-42 Table 1.3-9, 05/10
Naphthalene	91-20-3	Y	1.13E-03	AP-42 Table 1.3-9, 05/10
Phenanthrene	85-01-8	Y	1.05E-05	AP-42 Table 1.3-9, 05/10
Pyrene	129-00-0	Y	4.25E-06	AP-42 Table 1.3-9, 05/10
Toluene	108-88-3	Y	6.20E-03	AP-42 Table 1.3-9, 05/10
1,1,1-Trichloroethane	71-55-6	Y	2.36E-04	AP-42 Table 1.3-9, 05/10
o-Xylene	95-47-6	Y	1.09E-04	AP-42 Table 1.3-9, 05/10
Total Organic HAPs			0.04	

> Emission factors for metallic HAP compounds expected to be emitted are based on emission factors in AP-42 Table 1.3-10 (05/10 Edition).

	CAS #	HAP?	Emission Factor (lb/MMBtu)	Emission Factor (lb/Mgal)	Emission Factor Basis
Arsenic	7440-38-2	Y	4.00E-06	5.60E-04	AP-42 Table 1.3-10,05/10
Beryllium	7440-41-7	Y	3.00E-06	4.20E-04	AP-42 Table 1.3-10,05/10
Cadmium	7440-43-9	Y	3.00E-06	4.20E-04	AP-42 Table 1.3-10,05/10
Chromium	7440-47-3	Y	3.00E-06	4.20E-04	AP-42 Table 1.3-10,05/10
Lead	7439-92-1	Y	9.00E-06	1.26E-03	AP-42 Table 1.3-10,05/10
Manganese	7439-96-5	Y	6.00E-06	8.40E-04	AP-42 Table 1.3-10,05/10
Mercury	7439-97-6	Y	3.00E-06	4.20E-04	AP-42 Table 1.3-10,05/10
Nickel	7440-02-0	Y	3.00E-06	4.20E-04	AP-42 Table 1.3-10,05/10
Selenium	7782-49-2	Y	1.50E-05	2.10E-03	AP-42 Table 1.3-10,05/10
Total Metallic HAPs				6.86E-03	

3. Emissions Associated with EU116 Samaritan Hospital Boiler 01 (#2 Fuel Oil)

3.3.9 GHG Emission Factors

> Emission factors for GHG pollutants are based on emission factors in AP-42 Chapter 1.3 for Fuel Oil Combustion (05/10 edition).

Global Warming Potentials of GHGs per 40 CFR 98 Subpart A, Table A-1.

CO2	1
CH4	28
N2O	265

Pollutant	Emission Factor (lb/Mgal)	Emission Factor Basis
CO2	22,300	AP-42 Table 1.3-12, 05/10
CH4	0.216	AP-42 Table 1.3-3, 05/10
N2O	0.26	AP-42 Table 1.3-8, 05/10
CO2e	22,375	40 CFR 98, Subpart A

3.4 Summary of Boiler Potential Emissions

Pollutant	Emission Factor (lb/Mgal)	Basis	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
NOx	20.0	AP-42 Table 1.3-1, 05/10	1.395	6.11
CO	5.0	AP-42 Table 1.3-1, 05/10	0.349	1.53
VOC	0.56	AP-42 Table 1.3-3, 05/10	0.0388	0.170
PM	3.30	AP-42 Table 1.3-1 & 1.3-2, 05/10	0.2302	1.008
PM10	3.30	AP-42 Table 1.3-1 & 1.3-2, 05/10	0.2302	1.008
PM2.5	3.30	AP-42 Table 1.3-1 & 1.3-2, 05/10	0.2302	1.008
SO2	0.21	AP-42 Table 1.3-1, 05/10	0.0149	0.0651
Formaldehyde	0.03	AP-42 Table 1.3-9, 05/10	0.0023	0.0101
Total HAPs	0.05	AP-42 Table 1.3-9 & 1.3-10, 05/10	0.0033	0.0146
CO2	22,300	AP-42 Table 1.3-12, 05/10	1,555.58	6,813.46
CH4	0.22	AP-42 Table 1.3-3, 05/10	1.51E-02	6.60E-02
N2O	0.26	AP-42 Table 1.3-8, 05/10	1.81E-02	7.94E-02
CO2e	22,375	40 CFR 98, Subpart A	1,560.81	6,836.36

Pollutant	Basis	Annual Emissions (tpy)
NOx	AP-42 Table 1.4-1, 04/26	6.11
CO	AP-42 Table 1.4-1, 04/26	3.79
VOC	AP-42 Table 1.4-2, 04/26	0.25
PM	AP-42 Table 1.4-2, 04/26	1.01
PM10	AP-42 Table 1.4-2, 04/26	1.01
PM2.5	AP-42 Table 1.4-2, 04/26	1.01
SO2	AP-42 Table 1.4-2, 04/26	0.065
n-Hexane	AP-42 Table 1.4-3, 07/98	0.081
Formaldehyde	AP-42 Table 1.3-9, 05/10	0.010
Total HAPs	AP-42 Table 1.4-3 & 1.4-4, 07	0.085
CO2	AP-42 Table 1.4-2, 04/26	6,813
CH4	AP-42 Table 1.4-2, 04/26	0.10
N2O	AP-42 Table 1.4-2, 04/26	0.099
CO2e	40 CFR 98, Subpart A	6,836

ATTACHMENT C – Suggested Permit Terms

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Units 51, ~~83 and~~ 84, and 116: Dual Fuel-Fired Indirect Heat Exchangers

Description:

EU 51 (Central Utility Plant Boiler #1); EU ~~83 and~~ 84 and 116(Samaritan ~~01 and~~ 02)	
Maximum Continuous Rating (MMBtu/hr):	72.3 (EU 51); ~~12.0 (EU 83) and~~ 12.0 (EU 84); and 10.5 (EU 116)
Construction commenced:	EU 51 before 2004 EU ~~83 and~~ 84 before 2006 EU 116 2026
Primary fuel:	Natural Gas
Secondary fuel:	#2 fuel oil
Control:	EU 51, low NOx burner

APPLICABLE REGULATIONS:

401 KAR 59:015, New indirect heat exchangers

401 KAR 60:005, Section 2(2)(d) 40 C.F.R. 60.40c through 60.48c (Subpart Dc), Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

401 KAR 63:002, Section 2(4)(jjjjj) 40 C.F.R. 63.11193 through 63.11237, Tables 1 to 8 (Subpart JJJJJJ), National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

PRECLUDED REGULATIONS:

401 KAR 51:017, Prevention of significant deterioration of air quality.

1. **Operating Limitations:**

   a. The permittee shall meet the work practice standards established in 40 CFR 63, Table 2 to Subpart JJJJJJ, as established in 401 KAR 63:002, Section 2(4)(jjjjj). [401 KAR 59:015, Section 7(2)(c)]

   b. The permittee shall conduct a tune-up of the boiler biennially to demonstrate continuous compliance as specified in 40 CFR 63.11223(b)(1) through (7). Boilers with an oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up shall conduct a tune-up of the boiler every 5 years as specified in 40 CFR 63.11223(c). [401 KAR 59:015, Section 7(2)(c); 40 CFR 63.11201(b) referencing Table 2, Item 4 and 5.; and 40 CFR 63.11223(b) and (c)]

      1. Each biennial tune-up shall be conducted no more than 25 months after the previous tune-up [40 CFR 63.11223(b)]. Each 5-year tune-up shall be conducted no more than 61 months after the previous tune-up [40 CFR 63.11223(c)]

      2. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the permittee may delay the burner inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection) [40 CFR 63.11223(b)(1)].

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

3. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available [40 CFR 63.11223(b)(2)].

4. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the permittee may delay the inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection) [40 CFR 63.11223(b)(3)].

5. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any nitrogen oxide requirement to which the unit is subject [40 CFR 63.11223(b)(4)].

6. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer [40 CFR 63.11223(b)(5)].

7. If the unit is not operating on the required date for a tune-up, the tune-up shall be conducted within 30 days of startup [40 CFR 63.11223(b)(7)].

Compliance Demonstration Method:
Continuous compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements e. through g.** and **6. Specific Reporting Requirements d.**

c. At all times, the permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require any further efforts to reduce emissions if levels required by 40 CFR 63, Subpart JJJJJJ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.11205(a)]

Compliance Demonstration Method:
Compliance shall be demonstrated by **5. Specific Recordkeeping Requirements d.4.**

d. See **Section D - Source Emission Limitations and Testing Requirements**.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

2. Emission Limitations:

a. For EU 51 and 116 particulate emissions from the stack shall not exceed 0.1 lb/ MMBtu, and for EU ~~83 and~~ 84, particulate emissions from the stacks shall not exceed 0.39 lb/MMBtu. [401 KAR 59:015, Section 4(1)(c)]

Compliance Demonstration Method:

Units are considered in compliance with emission standard while combusting natural gas or fuel oil.

b. Opacity emissions from each stack shall not exceed 20 percent opacity except [401 KAR 59:015, Section 4(2)]:

1. A maximum of 27 percent opacity shall be allowed for one six minute period in any 60 consecutive minutes [401 KAR 59:015, Section 4(2)(a)];

2. For emissions caused by building a new fire, emissions during the period required to bring the boiler up to operating conditions shall be allowed, if the method used is recommended by the manufacturer and the time does not exceed the manufacturer's recommendations [401 KAR 59:015, Section 4(2)(c)].

Compliance Demonstration Method:

I. Units are considered in compliance with the emission standard while combusting natural gas.

II. While combusting fuel oil, the units shall comply with **2. Emission Limitations c**.

c. While burning fuel oil, visible emissions shall not exceed 20 percent opacity, based on a 6-minute average, except for one 6-minute period per hour of not more than 27 percent opacity. The opacity standard under 40 CFR 60.43c applies at all times, except during periods of startup, shutdown, or malfunction. [40 CFR 60.43c(c) and (d); and 401 KAR 59:015, Section 4(2)(a)]

Compliance Demonstration Method:

I. For EU 51 compliance shall be demonstrated according to **3. Testing Requirements a., 4. Specific Monitoring Requirements b., 5. Specific Recordkeeping Requirements b.**, and **6. Specific Reporting Requirements a.**

II. For EU ~~83 and~~ 84 and 116 compliance shall be demonstrated according to **4. Specific Monitoring Requirements c.** and **5. Specific Recordkeeping Requirements c.**

d. For EU 51 and 116, sulfur dioxide emissions from the stack shall not exceed 0.8 lb/MMBtu and for EU ~~83 and~~ 84, sulfur dioxide emissions from each stack shall not exceed 4.97 lb/MMBtu [401 KAR 59:015, Section 5 (1)(b)].

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Compliance Demonstration Method:

I. Units are considered in compliance with emission standards while combusting natural gas.

II. While combusting fuel oil, compliance shall be demonstrated by 2. Emission Limitations e.

e. While combusting fuel oil, SO_2 emissions shall not exceed 0.50 lb/MMBtu (215 ng/J); or, as an alternative, the permittee shall not combust liquid fuel that contains greater than 0.5 weight percent sulfur. The SO_2 standard under 40 CFR 60.42c applies at all times, including periods of startup, shutdown, and malfunction. [40 CFR 60.42c(d) and (i)]
Compliance Demonstration Method:
Compliance shall be determined based on a certification from the fuel supplier, as described under 40 CFR 60.48c(f). [40 CFR 60.42c(h)(1)] and **5. Specific Recordkeeping Requirements d**.

f. For EU 116, the permittee is not subject to the PM emission limitation in 40 CFR 63, Subpart JJJJJJ, Table 1 while combusting only ultra-low-sulfur liquid fuel. If the permittee intends to burn a fuel other than ultra-low-sulfur liquid fuel or gaseous fuels as defined in 40 CFR 63.11237, the permittee shall conduct a performance test within 60 days of burning the new fuel. [40 CFR 63.11210(f)]

Compliance Demonstration Method:
Compliance shall be determined based on **5. Specific Recordkeeping Requirements h**.

~~f.~~g. See **Section D - Source Emission Limitations and Testing Requirements.**

3. Testing Requirements:

a. For EU 51, to determine compliance with the opacity limits under 40 CFR 60.43c (fuel oil), the permittee shall conduct an initial performance test as required under 40 CFR 60.8 and shall conduct subsequent performance tests as requested by the Administrator, using U.S. EPA Reference Method 9 of Appendix A of 40 CFR Part 60 [40 CFR 60.45c(a)].

b. Testing shall be conducted at such time as may be requested by the Cabinet [401 KAR 50:045, Section 1 and 401 KAR 59:005, Section 2(2)].

4. Specific Monitoring Requirements:

a. The permittee shall monitor the amount of natural gas combusted (in MMscf) and the amount of fuel oil combusted (in gallons) on a monthly basis. [40 CFR 60.48c(g)(2)]

b. For EU 51, while combusting fuel oil, the permittee shall conduct a performance test using U.S. EPA Reference Method 9 of Appendix A-4 of 40 CFR Part 60 and the procedures in 40 CFR 60.11 to demonstrate compliance with the applicable limit in 40 CFR 60.43c, and

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

shall comply with either 40 CFR 60.47c(a)(1), (2), or (3). The observation period for U.S. EPA Reference Method 9 of Appendix A-4 or 40 CFR Part 60 performance tests may be reduced from 3 hours to 60 minutes if all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent during the initial 60 minutes of observation [40 CFR 60.47c(a)].

1. Except as provided in 40 CFR 60.47c(a)(2) and (a)(3), the permittee shall conduct subsequent U.S. EPA Reference Method 9 of Appendix A-4 of 40 CFR Part 60 performance tests using the procedures in 40 CFR 60.47c(a) according to the applicable

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

schedule in 40 CFR 60.47c(a)(1)(i) through (a)(1)(iv), as determined by the most recent U.S. EPA Reference Method 9 of Appendix A-4 of 40 CFR Part 60 performance test results [40 CFR 60.47c(a)(1)].

i. If no visible emissions are observed, a subsequent U.S. EPA Reference Method 9 of Appendix A-4 of 40 CFR Part 60 performance test must be completed within 12 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later; [40 CFR 60.47c(a)(1)(i)]

ii. If visible emissions are observed, but the maximum 6-minute average opacity is less than or equal to 5 percent, a subsequent U.S. EPA Reference Method 9 of Appendix A-4 of 40 CFR Part 60 performance test must be completed within 6 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later; [40 CFR 60.47c(a)(1)(ii)]

iii. If the maximum 6-minute average opacity is greater than 5 percent but less than or equal to 10 percent, a subsequent U.S. EPA Reference Method 9 of Appendix A-4 of 40 CFR Part 60 performance test must be completed within 3 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later; or [40 CFR 60.47c(a)(1)(iii)]

iv. If the maximum 6-minute average opacity is greater than 10 percent, a subsequent U.S. EPA Reference Method 9 of Appendix A-4 of 40 CFR Part 60 test must be completed within 45 calendar days from the date that the most recent performance test was conducted [40 CFR 60.47c(a)(1)(iv)].

2. If the maximum 6-minute opacity is less than 10 percent during the most recent U.S. EPA Reference Method 9 of Appendix A-4 of 40 CFR Part 60 performance test, the permittee may, as an alternative to performing subsequent U.S. EPA Reference Method 9 of Appendix A-4 of 40 CFR Part 60 performance tests, elect to perform subsequent monitoring using U.S. EPA Reference Method 22 of Appendix A-7 of 40 CFR Part 60 according to the procedures specified in 40 CFR 60.47c(a)(2)(i) and (ii) [40 CFR 60.47c(a)(2)].

i. The permittee shall conduct 10 minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using U.S. EPA Reference Method 22 of Appendix A-7 of 40 CFR Part 60 and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (i.e., 30 seconds per 10 minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10 minute observation, immediately conduct a 30 minute

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observation. If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (i.e., 90 seconds per 30 minute period), the permittee shall either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30 minute observations (i.e. 90 seconds) or conduct a new U.S. EPA Reference Method 9 of Appendix A-4 of 40 CFR Part 60 performance test using the procedures in 40 CFR 60.47c(a) within 45 calendar days according to the requirements in 40 CFR 60.45c(a)(8). [40 CFR 60.47c(a)(2)(i)]

ii. If no visible emissions are observed for 10 operating days during which an opacity standard is applicable, observations can be reduced to once every 7 operating days during which an opacity standard is applicable. If any visible emissions are observed, daily observations shall be resumed. [40 CFR 60.47c(a)(2)(ii)]

3. If the maximum 6-minute opacity is less than 10 percent during the most recent U.S. EPA Reference Method 9 of Appendix A-4 of 40 CFR Part 60 performance test, the permittee may, as an alternative to performing subsequent U.S. EPA Reference Method 9 of Appendix A-4 performance tests, elect to perform subsequent monitoring using a digital opacity compliance system according to a site-specific monitoring plan approved by the Administrator. The observations shall be similar, but not necessarily identical, to the requirements in 40 CFR 60.47c(a)(2). For reference purposes in preparing the monitoring plan, see OAQPS "Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems." This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Policy Group (D243-02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods. [40 CFR 60.47c(a)(3)]

c. For EU ~~83 and~~ 84 and 116, while combusting fuel oil, the permittee shall perform a qualitative visual observation of the opacity of emissions from each stack on a weekly basis while the affected facility is operating. If visible emissions from the stacks are observed (not including condensed water in the plume), the permittee shall determine the opacity using U.S. EPA Reference Method 9. In lieu of determining the opacity using U.S. EPA Reference Method 9, the permittee shall immediately perform a corrective action which results in no visible emissions (not including condensed water in the plume).[401 KAR 52:020, Section 10].

5. **Specific Recordkeeping Requirements:**

a. The permittee shall maintain records of the amount of natural gas combusted (in MMscf), and the amount of fuel oil combusted (in gallons) on a monthly basis. [40 CFR 60.48c(g)(2)]

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b. The permittee shall maintain records according to the requirements specified in 40 CFR 60.48c(c)(1) through (3), as applicable to the visible emissions monitoring method used for compliance with 40 CFR 60, Subpart Dc [40 CFR 60.48c(c)].

1. For each performance test conducted using U.S. EPA Reference Method 9 of Appendix A-4 of 40 CFR Part 60, the permittee shall keep the records including the information specified in 40 CFR 60.48c(c)(1)(i) through (iii) [40 CFR 60.48c(c)(1)].

i. Dates and time intervals of all opacity observation periods [40 CFR 60.48c(c)(1)(i)];

ii. Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test [40 CFR 60.48c(c)(1)(ii)]; and

iii. Copies of all visible emission observer opacity field data sheets [40 CFR 60.48c(c)(1)(iii)];

2. For each performance test conducted using U.S. EPA Reference Method 22 of Appendix A-4 of 40 CFR Part 60, the permittee shall keep the records including the information specified in 40 CFR 60.48c(c)(2)(i) through (iv) [40 CFR 60.48c(c)(2)].

i. Dates and time intervals of all visible emission observation periods [40 CFR 60.48c(c)(2)(i)];

ii. Name and affiliation for each visible emission observer participating in the performance test [40 CFR 60.48c(c)(2)(ii)];

iii. Copies of all visible emission observer opacity field data sheets [40 CFR 60.48c(c)(2)(iii)]; and

iv. Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the permittee to demonstrate compliance with the applicable monitoring requirements [40 CFR 60.48c(c)(2)(iv)].

3. For each digital opacity compliance system, the permittee shall maintain records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator [40 CFR 60.48c(c)(3)].

c. A log of the qualitative visual observations made as specified in **4. Monitoring Requirements** including the date, time, initials of observer, whether any emissions were observed (yes/no), and any U.S. EPA Reference Method 9 readings taken [401 KAR 52:020, Section 10].

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d. The permittee shall maintain records of fuel supplier certification for fuel oil that includes the following information [40 CFR 60.48c(f)]

1. The name of the oil supplier;

2. A statement from the oil supplier that the oil complies with the specification under the definition of distillate oil in 40 CFR 60.41c; and

3. The sulfur content or maximum sulfur content of the oil.

e. The permittee shall maintain on-site and submit, if requested by the Administrator, a report containing the following information [40 CFR 63.11223(b)(6)]:

1. The concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of each boiler [40 CFR 63.11223(b)(6)(i)].

2. A description of any corrective actions taken as a part of the tune-up of each boiler [40 CFR 63.11223(b)(6)(ii)].

3. The type and amount of fuel used over the 12 months prior to the tune-up of each boiler. Units sharing a fuel meter may estimate the fuel use by each unit [40 CFR 63.11223(b)(6)(iii)].

f. The permittee shall maintain the following records [40 CFR 63.11225(c)]:

1. A copy of each notification and report that was submitted to comply with 40 CFR 63, Subpart JJJJJJ and all documentation supporting any Initial Notification or Notification of Compliance Status that was submitted [40 CFR 63.11225(c)(1)].

2. Records to document conformance with the work practices, emission reduction measure, and management practices required by 40 CFR 63.11214 and 40 CFR 63.11223 as specified below [40 CFR 63.11225(c)(2)]:

i. Records shall identify each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned [40 CFR 63.11225(c)(2)(i)].

3. The permittee must keep a copy of the energy assessment report for each boiler. [CFR 63.11225(c)(iii)]

4. Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment [40 CFR 63.11225(c)(4)].

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5. Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in 40 CFR 63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation [40 CFR 63.11225(c)(5)].

g. Records shall be in a form suitable and readily available for expeditious review. The permittee shall keep each record for 5 years following the date of each recorded action. The permittee shall keep each record on-site or be accessible from a central location by computer or other means that instantly provide access at the site for at least 2 years after the date of each recorded action. The permittee may keep the records off site for the remaining 3 years. [40 CFR 63.11225(d)]

~~g.~~h. Monitor and record on a monthly basis of the type of fuel combusted in EU 116. [40 CFR 63.1120(e)

6. Specific Reporting Requirements:

a. The permittee shall submit excess emission reports for any emissions in excess of the 40 CFR 60.43c(c) opacity limit that occur during the reporting period. The permittee shall submit reports including fuel oil fuel supplier certifications with a statement signed by the permittee that the records of fuel supplier certification submitted represent all of the fuel oil combusted during the reporting period. [40 CFR 60.48c(c) and (e)]

b. For EU 51 and 84, ~~T~~the permittee shall submit a signed certification in the Notification of Compliance Status report that an energy assessment of the boiler and its energy use systems was completed according to Table 2 of 40 CFR 63, Subpart JJJJJJ and that the assessment is an accurate depiction of the facility at the time of the assessment or that the maximum number of on-site technical hours specified in the definition of energy assessment applicable to the facility has been expended. [40 CFR 63.11214(c)]

c. The permittee shall submit to the Administrator all of the notifications in 40 CFR 63.7(b); 63.8(e) and (f); and 63.9(b) through (e), (g), and (h) that apply within 120 days after the boilers become subject to the standard. [40 CFR 63.11225(a)(1) and (2)]

d. The permittee shall prepare, by March 1 of each year, and submit to the delegated authority upon request, an annual compliance certification report for the previous calendar year containing the company name and address and a statement by a responsible official, with the official's name, title, phone number, email address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of 40 CFR 63, Subpart JJJJJJ. The notification shall include the following certification(s) of compliance, as applicable, and signed by a responsible official: [40 CFR 63.11225(b)(1) and (2)]

1. "This facility complies with the requirements in 40 CFR 63.11223 to conduct a biennial or 5-year tune-up, as applicable, of each boiler." [40 CFR 63.11225(b)(2)(i)]

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2. For units that do not qualify for a statutory exemption as provided in Section 129(g)(1) of the Clean Air Act: "No secondary materials that are solid waste were combusted in any affected unit." [40 CFR 63.11225(b)(2)(ii)]

e. See **Section F - Monitoring, Recordkeeping, and Reporting Requirements**.