



November 22, 2024

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Northern Nevada Public Health
Air Quality Management Division
1001 East 9th Street, Suite B171
Reno, NV 89512

SUBJECT: Apple Inc.
21505 Reno Technology Parkway West, 3800-1RE
Sparks, NV 89434
Facility ID #59976

RE: Air Permit Modification Application

REF: Air Permit No. AAIR16-0082

Dear Francisco Vega:

Apple Inc. (Apple) operates a data center at 21505 Reno Technology Parkway, Sparks, Nevada 89343 (the Facility) under Permit to Operate, Permit No. AAIR16-0082 (Permit). This permit authorizes the operation of the following equipment as a synthetic minor source:

- Four generators each rated at 2,000 kilowatt (kW) (RMR01 Gen-01 through Gen-04);
- Twelve generators each rated at 2,750 kW (RMR02 Gen-01 through Gen-12);
- Twenty-four generators each rated at 4,000 kW each with selective catalytic reduction (SCR) systems, catalytic oxidation (CatOx, sometimes referred to as diesel oxidation catalyst or DOC), and diesel particulate filters (DPF) emission control devices (RMR03 EG-14 through EG-25 and RMR04 EG-26 through EG-37);
- Two generators each rated at 250 kW (Well 2 and Well 3); and
- One generator rated at 300 kW (Well 4).

With this Air Permit Modification Application (Application), Apple is proposing to retrofit twelve of the existing permitted generators, RMR02 Gen-01 through Gen-12, to include SCR, CatOx, and DPF emission control devices to minimize the environmental impact of the Facility. Currently, 24 existing generators (RMR03 EG-14 through EG-25 and RMR04 EG-26 through EG-37) are equipped with SCR, CatOx, and DPF emission control devices similar to the proposed devices.

Please note that under this Application, Apple is not requesting or proposing any change or increases to the Facility's currently permitted emissions limits. Thus, the Facility will maintain its synthetic minor source status. The Facility will continue to track emergency generator operating hours, operating load, and control device operation of all the emergency generators to demonstrate facility-wide compliance with the emission limits specified under the Permit.

Included in the Application package attached to this letter are the following items:

- The necessary application forms,
- Detailed emission calculations,
- Manufacturer specifications,
- United States Environmental Protection Agency Tier 2 Certifications,
- A regulatory review,
- An Emergency Episode Plan,
- Site figures, and
- Payment for the application fees.

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Given that no changes to emission limits are being proposed and maximum emissions from the proposed modification are below the thresholds specified in the Nevada Administrative Code, Chapter 445B, Section 310(1)(b), an environmental evaluation is not required as part of this Application. However, information related to the location and dimensions of sources and buildings at the Facility are still be included, as required. The necessary geospatial information associated with this Application will also be submitted electronically.

We appreciate the Northern Nevada Public Health – Air Quality Management Division's continued support. If you have any questions regarding the attached application, please call me at (408) 775-4639 or Tiffany Cuni of Environmental Resources Management (ERM) at (513) 830-9062.

Sincerely,



Pankaj Garg

Environmental Program Manager – Global Data Centers
Apple Inc.

cc: Bryan Klein, Apple
Tiffany Cuni, ERM

Attachment: Air Permit Modification Application



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Signature Page

Air Permit Modification Application

Environmental Resources Management, Inc. (ERM) has prepared this document on behalf of Apple Inc. (Apple).



Tiffany A. Cuni
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Introduction

Apple Inc. (Apple) operates a data center at 21505 Reno Technology Parkway, Sparks, Nevada 89442 (the Facility) under Permit to Operate, Permit No. AAIR16-0082 (Permit) issued by the Northern Nevada Public Health – Air Quality Management Division (AQMD). The Permit authorizes the operation of 43 diesel-fired emergency generators.

With this Air Permit Modification Application (Application), Apple is proposing to voluntarily retrofit twelve of the existing permitted generators associated with the RMR02 data center building, RMR02 Gen-01 through Gen-12, to include selective catalytic reduction (SCR) systems, catalytic oxidation (CatOx, sometimes referred to as diesel oxidation catalyst or DOC), and diesel particulate filters (DPF) to minimize the environmental impact of the Facility. These emission control devices reduce the emissions of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), and particulate matter (PM). It is assumed that the PM emissions are equal to the emissions of PM with a diameter less than 10 microns (PM₁₀) and equal to the emissions of PM with a diameter less than 2.5 microns (PM_{2.5}). This proposed modification is further discussed in later sections of this Application.

There will be no increase in emissions as a result of this voluntary installation of emission control devices. Thus, Apple proposes to continue to operate the facility as a Synthetic Minor source with respect to Title V permitting, as allowed by the Washoe County District Board of Health Regulations Governing Air Quality Management (DBOH) Section 010.090 E Synthetic Minor Sources. The Facility will continue to track emergency generator operating hours, operating load, and control device operation of all the emergency generators to demonstrate facility-wide compliance with the emission limits specified under the Permit.

Completed AQMD forms for this Application are included in Appendix A and a Site Map and Process Flow Diagram for the Facility are included in Appendix B. Emissions data are included in Appendix C and Appendix D. No changes to permitted emission limits are being proposed. Therefore, the change in limited potential to emit (PTE) from the proposed modification is zero, below the thresholds specified in Nevada Administrative Code, Chapter 445B, Section 310(1)(b), and an environmental evaluation is not required as part of this Application. However, additional information related to the location and dimensions of sources and buildings at the facility must still be included when an environmental evaluation is not required, pursuant to the *Class I Air Quality Operating Permit Guidance Document* and guidance received from the Nevada Department of Environmental Protection (NDEP). Thus, required geospatial information (including UTM coordinate information for buildings, sources, the fenceline, and dimensions of structures located at the facility) and exhaust and emissions data will be submitted electronically and is referenced in this Application as Appendix F.

Project Description

Apple is currently permitted to operate the following equipment as a synthetic minor source under Permit No. AAIR16-0082:

- Four generators associated with the RMR01 data center building, each rated at 2,000 kW (RMR01 Gen-01 through Gen-04);
- Twelve generators associated with the RMR02 data center building, each rated at 2,750 kW (RMR02 Gen-01 through Gen-12);
- Twenty-four generators associated with the RMR03 and RMR04 data center buildings, each rated at 4,000 kW each with SCR, DPF, and CatOx emission controls (RMR03 EG-14 through EG-25 and RMR04 EG-26 through EG-37);
- Two generators each rated at 250 kW (Well 2 and Well 3); and
- One generator rated at 300 kW (Well 4).

With this Application, Apple is proposing to retrofit twelve of the existing permitted generators, RMR02 Gen-01 through Gen-12, to include SCR systems, CatOx, and DPF to minimize the environmental impact of the Facility. The post-project, Facility-wide projected actual emissions of NO_x (the most emissive pollutant from diesel-fired emergency generators) are estimated to be approximately 8.63 tons per year (tpy), which is below the DBOH significant emissions threshold of 95 tpy. Apple will continue to limit their PTE to less than significant emission thresholds, such as 95 tpy NO_x. Therefore, the Facility proposes to continue to operate as a synthetic minor source, as specified in DBOH Section 010.090 E *Synthetic Minor Sources*. Detailed emission calculations are provided in the Emissions Summary Section and Appendix C of this Application. To demonstrate Facility-wide compliance with the permitted and regulatory emission limits, the Facility will continue to determine emissions from all operations using manufacturer supplied certified emission rates for each engine family. The emissions tracking methodology is detailed in the Emissions Calculation Methodology section of this Application narrative. The Facility will maintain compliance with the established AQMD synthetic minor source requirements by continuing to accurately account for actual operating conditions as set forth in the New Source Performance Standards (NSPS), in Title 40, Code of Federal Regulations (40 CFR) Part 60 Subpart IIII.

All the engines covered by this Application are subject to NSPS Subpart IIII. As required by NSPS Subpart IIII, the existing emergency generators at the Facility are Tier 2 or Tier 3 certified. All of the existing engines are operated to comply with the corresponding testing and maintenance operating limit of 100 hours per calendar year per engine and are equipped with non-resettable hour meters to track compliance with this limit. Additionally, the Facility will continue to only use ultra-low sulfur diesel (ULSD) fuel to maintain compliance with the fuel sulfur content usage restrictions per NSPS Subpart IIII. Logs will be kept to track operating loads and durations for compliance with AQMD synthetic minor source requirements. The emergency generators will not be used for peak shaving or as part of an Emergency Demand Response Program as described in 40 CFR 60.4211(f)(2). Per 40 CFR 60.4211(f)(3), each emergency generator's operation for non-emergency purposes unrelated to maintenance and testing of the emergency generators is limited to 50 hours per calendar year. These 50 hours are included as part of the 100 hours per year limit for maintenance and testing. Detailed information regarding the emergency generators is included in Appendix D. Additional regulatory discussion for the Facility is provided in the Regulatory Applicability section.

Emissions Summary

The Facility's emissions have been estimated for the following regulated air pollutants: NO_x, CO, VOC, sulfur dioxide (SO₂), PM, PM₁₀, PM_{2.5} and hazardous air pollutants (HAPs). The calculations for these estimates are included in Appendix C. The Facility is not proposing any changes to the facility-wide limited PTE. Subsequently, the facility is not proposing any changes to the facility-wide emissions limits.

Facility-wide Emissions Calculation Methodology

The Facility currently tracks the parametric values used to calculate monthly NO_x, PM, and CO emissions (i.e. generator run time, operating load, and control status) to demonstrate compliance with synthetic minor source requirements. Following the voluntary installation of emission control devices described in the above section, emergency generators RMR02 Gen-01 through Gen-12, RMR03 EG-14 through EG-25, and RMR04 EG-26 through EG-37 will have periods of operation during which the SCR and CatOx systems are in use and other periods when they are not in use, given the design parameters of the emission control systems (as described below). The Facility bases the emission factor selection for emissions calculation on the operation or non-operation of the emission control systems.

The SCR systems exhaust temperature determines when urea injection occurs. According to the control device vendor, exhaust must reach approximately 572°F for the catalyst to operate properly and for urea to be consumed. The SCR systems do not begin injection of urea until the catalyst has reached the minimum operating temperature. Similarly, for CatOx, a minimum exhaust temperature of approximately 450°F is required for effective CO and VOC control. For PM, controlled by DPF, the Facility proposes to use only the control device vendor-supplied control emission factors, since the filter's control efficiency does not depend on engine temperature and does not require a warm-up period to effectively control emissions. These proposed approaches are identical to the approaches currently used by the Facility as allowed by the Permit.

The RMR03 EG-14 through EG-25 and RMR04 EG-26 through EG-37 generators reach minimum control temperatures in approximately 60, 30, 25, and 20 minutes during startup at 25%, 50%, 75%, and 100% operating load, respectively. It is assumed that RMR02 Gen-01 through Gen-12 will reach minimum controlled temperatures in the same amount of time as the RMR03 EG-14 through EG-25 and RMR04 EG-26 through EG-37. During these start-up and warm-up periods, emissions are uncontrolled. For these periods of uncontrolled operation, the Facility uses the manufacturer-supplied uncontrolled emission factors corresponding to each operating load level. For periods of operation where the necessary temperatures are achieved and controls are implemented, the Facility uses the controlled emission factors for each operating load.

Accounting for the variety of operating loads that the emergency generators experience as well as the periods of uncontrolled and controlled conditions result in a more accurate estimate of actual NO_x emissions. This improved accuracy helps facilitate compliance with the NO_x major source threshold of 95 tpy, on 12-month rolling total, specified in DBOH Section 010.090 E. The Facility uses the following equation to calculate emissions of all criteria pollutants for each generator run:

$$\begin{aligned} \text{Emissions per Run } \left(\frac{\text{lbs}}{\text{run}} \right) &= \text{Uncontrolled Emission Factor @ Load } L \left(\frac{\text{lb}}{\text{hr}} \right) * \text{Uncontrolled Hours of Operation} \\ &+ \text{Controlled Emission Factor @ Load } L \left(\frac{\text{lb}}{\text{hr}} \right) * \text{Controlled Hours of Operation} \end{aligned}$$

Where: Emission Factor @ Load L = manufacturer-supplied, generator-specific emission rate corresponding to the generator load for periods of uncontrolled operation or control device vendor-specified emission rate corresponding to the generator load for periods of controlled operation, where the highest load during the run is rounded up to the next higher level of 25%, 50%, 75%, or 100% load; and

Hours of Operation = total operating hours for each engine in the given run.

The Facility-wide monthly emissions are then calculated by summing the emissions from all the runs in a given month and converting the total emissions from pounds to tons.

For the 43 currently permitted emergency generators located at the Facility (RMR01 Gen-01 through Gen-04, RMR02 Gen-01 through Gen-12, RMR03 EG-14 through EG-25, and RMR04 EG-26 through EG-37), the basis of the emissions calculations (Appendix C) is derived from manufacturer specification sheets (Appendix D) for NO_x, CO, VOC and PM emissions. Emission factors for all other pollutants are derived from AP-42 Chapter 3, Section 3.4, *Large Stationary Diesel and All Stationary Dual-fuel Engines* dated October 1996, and AP-42 Chapter 3, Section 3.3, *Gasoline And Diesel Industrial Engines* dated October 1996. For the Well 2 – Well 4 generators, emission factors for all pollutants are derived from AP-42 Chapter 3 Section 3.3, *Gasoline And Diesel Industrial Engines* dated October 1996.

Please note that the emission factors originating from the manufacturer specification sheets cannot be directly compared to EPA Tier 2 emission factors because of the differing methodologies used to develop these values. Tier 2 emission factors are a weighted average of multiple emission factors over a range of operating loads, whereas manufacturer specified emission factors are specific to each operating load.

Each operating scenario calculated in this Application has different assumptions for operating time and load. The projected actual emissions operating scenario is a conservative estimate of how the generators are expected to operate, and the estimated maximum emissions operation scenario represents the maximum emissions the generators could generate under the existing permit limits. Each of these scenarios is outlined below:

- **Projected actual emissions** – 52 hours per year per generator for non-emergency use at 50% standby load for generators at the RMR01, RMR02, RMR03, and RMR04 data center buildings and 100% load for the Well 2, Well 3, and Well 4 generators. For emergency generators associated with the RMR02, RMR03 and RMR04 data center buildings, 16 startups of 30 minutes each were assumed to be uncontrolled and the remaining operation was assumed to be controlled.
- **Estimated maximum emissions** – Maximum emissions between the 25%, 50%, 75%, and 100% operating load cases were used for calculating the estimated maximum emissions. Estimated maximum operating hours of emergency operations at each load are presented in Table 1. In addition to the emergency operations, each generator is assumed to operate a maximum of 100 hours of maintenance and testing related operations per year.

Table 1: Operating Hours at Each Load, Per Generator

Operating Load	Emergency Hours	Hours of Maintenance and Testing	Total Operating Hours
100%	149	100	249
75%	193	100	293
50%	362	100	462
25%	400	100	500

For emergency generators associated with the RMR02, RMR03, and RMR04 data center buildings the number of startups and minutes each run was assumed to be uncontrolled are presented in Table 2. The rest of the operation was assumed to be controlled.

Table 2: Number of Startups and Startup Time at Each Load, Per Generator

Operating Load	Estimated Number of Startups per Year	Uncontrolled Startup Time per Run (minutes)
100%	135	20
75%	170	25
50%	306	30
25%	336	60

Facility-wide Emissions Summary

Apple is not proposing any modification to the Facility-wide limited PTE, as shown in Table 3 below.

Table 3: Facility-wide Limited Potential to Emit (tpy)

Pollutant	Pre-Project ^[3]	Post-Project ^[4]	Change in Limited Potential to Emit
NO _x	95	95	0
SO ₂	95	95	0
CO	95	95	0
VOC	95	95	0
PM ^[1]	70	70	0
PM ₁₀ ^[1]	70	70	0
PM _{2.5} ^[1]	70	70	0
GHG (CO ₂ e)	N/A	N/A	N/A
Maximum Single HAP	9	9	0
Total HAPs	23	23	0

1. Assumes PM = PM₁₀ = PM_{2.5}.

Projected actual and estimated maximum emissions are shown in Table 4 below. The summary includes emissions from all 43 emergency generators and diesel fuel storage tanks associated with the emergency generators in this Application. Estimated maximum emissions are the maximum emissions between the 25%, 50%, 75%, and 100% operating load cases based on the hours of operation presented in Table 1. Projected actual emissions are based on 52 hours per year per generator at 50% operating load, except for the Well 2, Well 3, and Well 4 generators, which are assumed to always operate at 100% load. Periods of uncontrolled and controlled operation were taken into account as described in the Facility-wide Emissions Calculation Methodology section above.

Table 4: Facility-wide Annual Emissions (tpy)

Pollutant	Projected Actual ^[3]	Estimated Maximum ^[4]	Synthetic Minor Threshold ^[5]
NO _x	8.63	94.80	95
SO ₂	0.09	0.80	95
CO	4.24	52.45	95
VOC ^[1]	0.56	13.16	95
PM ^[2]	0.16	1.58	N/A
PM ₁₀ ^[2]	0.16	1.58	70
PM _{2.5} ^[2]	0.16	1.58	N/A
GHG (CO ₂ e)	668.57	5,912.86	N/A
Maximum Single HAP (Benzene)	5.71E-03	7.01E-02	9
Total HAPs	1.14E-02	1.37E-01	23

1. VOC emissions include emissions from diesel-fuel storage tanks associated with the permitted generators, as well as the 250-gallon gasoline tank on site. A detailed tank emission report is included in Appendix C.
2. Assumes PM = PM₁₀ = PM_{2.5}.
3. Projected actual emissions are calculated based on 52 hours of non-emergency operation per year per generator at 50% load for generator groups RMR01, RMR02, RMR03, and RMR04 and at 100% load for the Well 2, Well 3, and Well 4 generators.
4. Annual Estimated Maximum Emissions is the maximum emissions between the 25%, 50%, 75%, and 100% operating load cases calculated based on the hours of non-emergency and emergency operation per year per generator as presented in Table 1.
5. Synthetic minor source actual emissions thresholds are based on DBOH Section 010.090 E.

Regulatory Applicability

The Facility is located in Washoe County, which is designated attainment or unclassifiable for all criteria pollutants. The Facility is proposing to remain a synthetic minor source. The following regulatory review identifies potentially applicable local and federal air quality regulations and explains why each regulation is or is not considered applicable to the Facility.

Federal Regulations

New Source Performance Standards

NSPS require new, modified, or reconstructed sources to control emissions to the level achievable by the best demonstrated technology as specified in the applicable provisions. The NSPS regulations may be found in 40 CFR 60. An analysis of potentially applicable NSPS subparts is presented below.

Subpart A – General Provisions

Facilities subject to source-specific NSPS are also subject to the general provisions of NSPS Subpart A (40 CFR 60). Because the Facility is subject to another 40 CFR 60 subpart, as discussed in the Subpart III section of the Application below, the provisions of Subpart A are applicable. NSPS Subpart A may require the following of facilities subject to a source-specific NSPS:

- Initial construction/reconstruction notifications
- Initial startup notifications
- Performance tests
- Performance test date initial notifications
- General monitoring requirements
- General recordkeeping requirements
- Semiannual monitoring system and/or excess emissions reports.

The Facility will comply with the provisions of NSPS Subpart A, as applicable.

Subpart IIII – NSPS for Stationary Compression Ignition Internal Combustion Engines

NSPS Subpart IIII establishes emission standards and compliance requirements for the control of emissions from stationary compression ignition (CI) internal combustion engines (ICE) which are constructed, reconstructed, or modified after July 11, 2005.

The Facility operates, and will continue to operate, 43 CI ICE which were constructed after July 2005. Therefore, the Facility contains applicable units and is required to comply with the provisions of this subpart. Following the proposed modification, the Facility will continue to comply with the requirements of NSPS IIII.

National Emission Standards for Hazardous Air Pollutants

National Emission Standards for Hazardous Air Pollutants (NESHAP) are emission standards that are generally applicable to major sources of HAPs, but also apply to certain area sources of HAPs. A HAP major source is defined as having potential emissions in excess of 10 tons per year for any individual HAP and/or 25 tons per year for total HAPs. NESHAP apply to specific pollutant sources (40 CFR 61), or to sources in specifically regulated industrial source categories (Clean Air Act Section 112(d)), or on a case-by-case basis (Section 112(g) or 112(j)) for facilities not regulated as a specific industrial source type (40 CFR 63). The Facility is an area source for HAPs. An applicability analysis of potentially applicable NESHAP (Part 63) subparts is presented below.

Subpart A – General Provisions

All affected sources are subject to the general provisions of NESHAP Subpart A unless specifically excluded by the source-specific NESHAP. NESHAP Subpart A requires initial notification, performance testing, recordkeeping, and monitoring, provides reference methods, and mandates general control device requirements for all other subparts as applicable.

Subpart ZZZZ – NESHAP for Stationary Reciprocating Internal Combustion Engines

NESHAP (40 CFR 63) Subpart ZZZZ provides HAP emission limitations and operating limitations for stationary reciprocating internal combustion engines (RICE), including emergency engines, located at facilities that are major or area sources of HAP emissions.

The Facility operates, and will continue to operate, a total of 43 CI ICE which were installed in 2011 or later. The Facility is currently classified as an area source of HAPs and will continue to be an area source with this Application. No new HAP emissions are being proposed.

Per 40 CFR 63.90(c)(1), the Facility will continue to comply with the NSPS provisions in 40 CFR 60, Subpart IIII. Consequently, no further provisions under NESHAP Subpart ZZZZ will apply.

Nevada State and Washoe County Regulations

The following regulatory review identifies potentially applicable state and Washoe County air quality regulations and explains why each regulation is or is not considered applicable to the Facility.

Nevada Administrative Code 445B.295 - Application: General Requirements

This regulation specifies the type of information that must be included in air permit applications. As specified below, the Facility is exempt from the requirement of submitting an environmental evaluation with this Application pursuant to NAC 445B.310(1)(b). However, pursuant to the Class I Air Quality Operating Permit Guidance Document and NDEP guidance, information related to the location and dimensions of sources and buildings at the facility must still be included. Thus, required information not already included as part of this Application will be submitted electronically as part of Appendix F.

Nevada Administrative Code 445B.310 - Environmental Evaluation

This regulation applies to facilities undergoing a revision to an operating permit which is not subject to the provisions of 40 CFR 52.21 Prevention of Significant Deterioration, as adopted by reference in NAC 445.221. With the modification of RMR02 Gen-01 – Gen-12 to add SCR, CatOx, and DPF the Facility is not proposing to increase potential emissions. Therefore, the Facility is exempt from the requirement of submitting an environmental evaluation with this Application pursuant to NAC 445B.310(1)(b).

DBOH Section 010.090 E – Synthetic Minor Source Rule

Under this regulation, Washoe County defines the exemption from designation as a major source by specifying that a facility must seek to limit potential emissions by meeting the following criteria:

- Sources seeking exemption from Title V as a synthetic minor shall provide records of operation sufficient to calculate actual emissions annually as part of their Permit to Operate renewal;
- Any source seeking a Synthetic Minor status under the provisions of this regulation must request such exemption in writing, and provide the listed information in 010.090 Section E(2);
- The source must demonstrate that the actual emissions will not exceed 95 tons per year for all regulated air pollutants (excluding PM₁₀ and Hazardous Air Pollutants); 70 tons per year of PM₁₀; 9 tons per year of any single Hazardous Air Pollutant; 23 tons per year of any combination of Hazardous Air Pollutants and 90 percent of any lesser threshold for a single Hazardous Air Pollutant as established by Federal rule; and
- The source will propose federally enforceable permit conditions which limit the source-wide emissions to below major source thresholds (in short term standards).

The Facility is currently a synthetic minor source and is submitting this Application as the written request to continue to operate as a synthetic minor source following the proposed modification. Emission calculations in Appendix C provide the required actual and estimated maximum emission estimates pursuant to 010.090 E (2) (a) and tracking and calculation methodology are discussed in Facility-wide Emissions Calculation Methodology section of this Application above.

DBOH Section 030.100 New Source Performance Standards – 40 CFR 60

This regulation incorporates 40 CFR §60.4200 by reference. The Facility will continue to demonstrate compliance by complying with NSPS IIII as described in the above section.

DBOH Section 030.105 – National Emission Standards for Hazardous Air Pollutants for Source Categories – Part A and Part B

These two parts incorporate NESHAP 40 CFR 63 Subpart ZZZZ by reference and 40 CFR 61, respectively. The Facility will continue to demonstrate compliance by complying with NESHAP ZZZZ as described in the above section.

DBOH Section 030.410 - New Sources Emitting Toxic Air Pollutants

This regulation requires that any new air pollution source which emits any of the toxics listed under the Clean Air Act Amendments of 1990 is subject to Best Available Control Technology (BACT) requirements. A risk assessment should then be carried out to determine the associated health risks resulting from the new source after BACT controls. If in the preliminary stages of the Application, the cancer risk is found to be less than one in one million and adverse health effects are unlikely, then the source may be exempted from this regulation. If, however, the risk is higher than one in one million after BACT has already been applied, additional controls will be required to get the risk below one in one million prior to construction.

BACT is addressed through the purchase of NSPS IIII and NESHAP ZZZZ compliant units, as well as through the use of ultra-low sulfur fuel. The intermittent operation of emergency generators, and the voluntary use of emission control devices on generators associated with the data center buildings RMR02, RMR03, and RMR04 further reduces the potential health risk posed by toxic air pollutants. Thus, a risk assessment has not been completed as it is assumed to not be required and has not historically been required.

DBOH Section 030.700 - Lowest Achievable Emission Rate Control Technology Requirements

This regulation prohibits the construction of any stationary units which will emit more than 125 lbs/day (in total) of NO_x, Organic gasses, or any contaminant for which there is a National Ambient Air Quality Standard, unless existing use of lowest achievable emission control technology can be demonstrated.

The projected actual emissions of the facility are 8.63 tpy NO_x (47 lbs/day on average). Thus, the Facility will operate the facility such that they will remain below the 125 lbs/day emission limit, based on annual average, and will demonstrate compliance with load tracking as discussed in Facility-wide Emissions Calculation Methodology section of this Application above.

DBOH Section - 030.750 Technology Requirements for Sources Emitting between 10 and 125 pounds per day (BACT)

This regulation requires that BACT be applied to any new or modified stationary sources with the potential to emit between 10 and 125 pounds of any criteria pollutant.

The Facility-wide limited PTE will continue to remain below the 125 lbs/day emission limit and therefore this regulation applies to the proposed project. BACT is addressed through the purchase of NSPS IIII and NESHAP ZZZZ compliant units, as well as through the use of ultra-low sulfur fuel.

DBOH Section - 030.990 Part 70 Permit Hazardous Air Pollutant Provisions

This regulation applies to major sources of HAPs and ensures that the source will have emission limits which reflect the Maximum Achievable Control Technology (MACT) standards (as established by the EPA) as soon as practicable. Under this regulation, emergency generators are permitted to be operated in non-emergency situations up to 100 hours per year, including required testing and maintenance. The Facility will continue to operate in such a manner as to comply with this requirement.

DBOH Section – 0.30.600 Prevention of Significant Deterioration (PSD) – Section A – Section C

This regulation adopts the requirements of 40 CFR 52.21 which provides for restrictions on certain stationary units which emit 100/250 tons or more per year of any of the new source review pollutants.

The Facility will not have the potential to trigger threshold amounts of emissions applicable to the standard with the proposed modification; therefore, this regulation will not apply at this time.

DBOH Section 040.005 - Visible Air Contaminants

This regulation prohibits the release of any air contaminant that is noticeably dark or opaque (relative to No. 1 on Ringelmann Chart) for more than three minutes per hour by any stationary source. If the presence of water vapor is the sole cause of non-compliance, the limitation will no longer apply.

The Facility will continue to operate in such a manner as to comply with this regulation.

DBOH Section 040.015 - Specific Contaminants

This regulation prohibits the discharge of sulfur compounds (calculated as SO₂) at the point of discharge in excess of 0.2% by volume. The regulation also limits combustion contaminants to 0.15 grains per cubic foot of gas calculated at 12% of carbon dioxide at standard condition.

The fuel used in the generators is ULSD and will result in emissions that will comply with this standard.

DBOH Section 040.030 - Dust Control

The regulation applies to all facilities with dust generating activities including: operating machines or equipment, using unpaved parking facilities, using on or off road vehicles on vacant land, and having unpaved roads in a PM₁₀ non-attainment area. Applicable facilities are required to minimize the quantity of PM₁₀ released into the ambient air through any of the following control measures: Paving, pre-wetting, applying dust suppressants, stabilizing with vegetation, gravel, re-crushed/recycled asphalt or other forms of physical stabilization, limiting/restricting/rerouting vehicle access, reducing vehicle speeds or number of vehicle trips, limiting use of off-road vehicles in vacant lots, using work practices that curtail wind and/or water erosion, as well as others.

The Facility will continue to operate in a manner to comply with this regulation and will implement dust control measures if necessary.

DBOH Section 050.001- Emergency Episode Plan

The regulation applies to all facilities with the potential to emit 50 tpy or more of an air contaminant and is enacted to curtail emissions of CO, PM₁₀, PM_{2.5}, and ozone during periods of air quality emergency episodes, as defined by the Washoe County District Health Department. The Facility has and will continue to have the potential to emit more than 50 tpy NO_x, a known contributor to ozone formation. Therefore, the Facility proposes to continue complying with the site-specific Emergency Episode Plan included as Appendix E to this Application.

FOR AQMD USE ONLY

DECLARATION OF RESPONSIBLE OFFICIAL

Facility Information

This completed form, or a letter on company letterhead with original wet-ink signature(s) containing this same information, must be submitted to the AQMD before the requested change or addition will be valid.

1. Facility Name: **APPLE INC.** 2. Permit Number: **AAIR16-0082**

3. Facility Address: **21505 Reno Technology Pkwy**

City: **Sparks** State: **NV** ZIP: **98442**

Options

4. Select one of the options below:

☒ I will assume the role of Responsible Official, with full scope of responsibilities for the certification of all communications, letters, reports, notifications, invoices, permits, and applications, for this operating permit
(Fill out contact information in #5 and sign below as New Responsible Official).

I will replace this Responsible Official: Mike Brodock

☐ I am requesting an additional Responsible Official, with full scope of responsibilities for the certification of all communications, letters, reports, notifications, invoices, permits, and applications, for this operating permit
(Fill out contact information for the additional Responsible Official in #5. The current RO and additional RO should sign below).

5. Responsible Official Contact Information:

Name: **Pankaj Garg** Title: **Environmental Program Manager - Global Data Centers**

Phone No.: **408-775-4639** Fax No.: **N/A**

Email: **pankaj_garg@apple.com**

Mailing Address: **One Apple Park Way, MS 319-5EHS**

City: **Cupertino** State: **CA** ZIP Code: **95014**

6. Pursuant to Washoe County District Board of Health Regulations Governing Air Quality Management, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.

Mike is no longer with Apple

11/22/2024

Signature of Current Responsible Official Date

Signature of New Responsible Official Date

Mike Brodock

Printed Name of Current Responsible Official

Pankaj Garg

Printed Name of New Responsible Official

N/A

Title of Current Responsible Official

Environmental Program Manager - Global Data Centers

Title of New Responsible Official

APPLICATION FOR A SYNTHETIC MINOR SOURCE AUTHORITY TO CONSTRUCT/PERMIT TO OPERATE

FOR AQMD USE ONLY

AIR QUALITY MGMT.

DEC 03 2024

WASHOE COUNTY
HEALTH DIST.

Permit No.:

Facility Information1. ☐ New Permit ☒ Permit Modification2. **Existing facilities only.** Permit Number (AAIRXX-XXXX): AAIR16-0082

3. Facility Name: APPLE INC.

4. NAICS: 518210

5. Facility Location: ☒ Stationary ☐ Portable

6. Facility Address: 21505 Reno Technology Pkwy

APN:

City: Sparks

State: NV

ZIP Code: 89442

7. Facility latitude and longitude coordinates: 39.57023, -119.536

8. **Stationary facilities only.** Is the facility located within 1,000 feet of the outer boundary of a school, hospital, or residential area? ☐ Yes ☒ No

9. Operating Schedule

Hours Per Day: 24

Days Per Week: 7

Weeks Per Year: 52

10. On-Site Contact Information

Name: Bryan Klein

Title: Sr. Facility Manager

Phone Number: 775-223-1634

Fax Number: N/A

Email: bryan_klein@apple.com

Optional (#11 - #13). If there are records required under the operating permit, and they will be kept at a location other than the facility, specify the location:

11. Facility Name:

12. Facility Address:

City:

State:

ZIP Code:

13. On-Site Contact Information

Name:

Title:

Phone Number:

Fax Number:

Email:

Company Information (all fields must be completed)

14. **Existing facilities only.** Has the company ownership changed? ☐ Yes ☒ No ☐ N/A
If "Yes", submit an *Application for Change of Ownership* and Fee, in addition to this application.

15. Legal Company Name (as registered with the State of Nevada):

Apple Inc.

16. Mailing Information

Mailing Address: One Apple Park Way, MS 319-5EHS

City: Cupertino

State: CA

ZIP Code: 95014

Permitting Contact Name: Pankaj Garg

Title: Environmental Program Manager - Global Data Centers

Phone Number: 408-775-4639

Fax Number: N/A

Email: pankaj_garg@apple.com

17. Billing Information

Billing Address: One Apple Park Way, MS 319-5EHS

City: Cupertino

State: CA

ZIP Code: 95014

Billing Contact Name: Pankaj Garg

Title: Environmental Program Manager - Global Data Centers

Phone Number: 408-775-4639

Fax Number: N/A

Email: pankaj_garg@apple.com

Responsible Official Information

Name of Responsible Official:

Pankaj Garg

Title: Environmental Program Manager - Global Data Centers

Phone Number: 408-775-4639

Fax Number: N/A

Email: pankaj_garg@apple.com

Mailing Address: One Apple Park Way, MS 319-5EHS

City: Cupertino

State: CA

ZIP Code: 95014

Facility Manager/Environmental Representative (Optional)

Name: Bryan Klein

Title: Facility Manager

Phone Number: 775-223-1634

Fax Number: N/A

Email: bryan_klein@apple.com

Mailing Address: 21505 Reno Technology Pkwy W, 3800-1RE

City: Sparks

State: NV

ZIP Code: 89434

Environmental Consultant Information (Optional)

By identifying a consultant, the RO consents that such consultant has the authority to communicate directly with the AQMD for the limited purpose of providing supplemental information and comments in support of the information already provided by the RO in the application. The RO acknowledges that any change to, or withdrawal of the application must be done by the RO.

Name: Tiffany Cuni	Title: ERM - Partner
Phone Number: 513-830-9062	Fax Number: N/A
Email: tiffany.cuni@erm.com	
Mailing Address: 8044 Montgomery Road Suite 700 - 7336	
City: Cincinnati	State: Ohio
ZIP Code: 45236	

Application Description

Describe all equipment and processes being proposed in the application. Make sure the narrative matches the process flow diagram (as applicable). For existing facilities, make sure to describe any revisions or modifications being requested, and include any equipment to be removed and/or replaced. Reference the instructions on Page 8 for more Information.

Apple Inc. (Apple) operates a data center at 21505 Reno Technology Parkway, Sparks, Nevada 89442 (the Facility) under Permit to Operate, Permit No. AAIR16-0082 (Permit) issued by the Northern Nevada Public Health – Air Quality Management Division (AQMD). The Permit authorizes the operation of 43 diesel-fired emergency generators. With this Air Permit Modification Application (Application), Apple is proposing to retrofit twelve of the existing permitted generators, RMR02 Gen-01 through Gen-12, to include selective catalytic reduction (SCR) systems, diesel oxidation catalyst (DOC), and diesel particulate filters (DPF) to minimize the environmental impact of the Facility. This emission control technology controls for nitrogen oxides (NOX), carbon monoxide (CO), volatile organic compounds (VOC), and particulate matter (PM) with a diameter less than 10 microns (PM10). There will be no increase in emissions as a result of this voluntary installation of control devices. Thus, Apple proposes to continue to operate the facility as a Synthetic Minor source with respect to Title V permitting, as allowed by the Washoe County District Board of Health Regulations Governing Air Quality Management (DBOH) Section 010.090 E Synthetic Minor Sources. The Facility will continue to track emergency generator operating hours, operating load, and control device operation of all emergency generators to demonstrate facility-wide compliance with the emission limits specified under the Permit.

NOTE: Applicant agrees to allow on-site inspection during and after construction by the Air Quality Management Division (AQMD) during working hours and without prior notice. The operator must notify the AQMD when the facility commences and completes construction. An official Permit to Operate will not be issued until a final inspection is made and all required test data has been forwarded to the AQMD showing the equipment meets all district, state, and federal regulations.

This application is submitted in accordance with the provisions of Section 030.000, and under penalty of perjury, to the best of my knowledge the information supplied in this document is true and correct.

November 22, 2024


Responsible Official Signature

Date

Pankaj Garg

Environmental Program Manager - Global Data
Centers

Print Name

Title

SYNTHETIC MINOR SOURCE APPLICATION CHECKLIST

This checklist must be included with your application. Check the appropriate box for each item. If an item is incomplete or not applicable, please detail why it is incomplete or not applicable in the "Notes" section at the end of the checklist. **Reference Page 10 for more detailed information about the required supplemental documents.**

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Application for a Synthetic Minor Source Authority to Construct/Permit to Operate
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Site Map
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Process Flow Diagram (as applicable) <ul style="list-style-type: none"> Clearly depict all emissions units (EU's) and show emission unit ID numbers (EU ID #'s) Indicate emission control application points
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Equipment List. Include the following areas of information: <ul style="list-style-type: none"> Descriptions and specifications Power/capacity ratings EU ID Numbers Dates of manufacture, installation, and operation
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Air Pollution Control Equipment/Measures List
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Emissions unit and/or control device worksheet for each emission unit and/or control device.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Detailed Emissions Calculations – Emissions calculations should be included for each (EU) and for each regulated pollutant (lbs/hr and tons/yr); Calculations should include controls, hours of operation, throughput/fuel usage, Emission Factors, etc. The calculations should also match the application forms. The following should also be included: <ul style="list-style-type: none"> Potential to Emit (PTE) Emissions Increase (existing facilities only). The prior PTE vs proposed PTE.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Operational Information (if not included in the required worksheet)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Safety Data Sheets (as applicable)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Compliance Monitoring Devices List (as applicable)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Exhaust Stack Information List (if not included in the required worksheet)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Federal Performance Standards List (if not included in the required worksheet)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Applicable Requirement Supplement (as applicable)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Construction Schedule (as applicable)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Applicable Requirements Exemption List (as applicable)

Yes	No	N/A	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Manufacturer specification sheet for each emissions unit and/or control device and Manufacturer's Guarantee (if applicable, due to control efficiencies claimed)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Source Testing Data (if referenced in calculations)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Electronic version of all documents submitted via email to AQMDPermitting@nnph.org or thumb drive included.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Application Fee. The application fee invoice must be paid in full before the application is processed.

Notes:

Safety Data Sheets: The equipment at the facility does not require safety data sheets.

Compliance Monitoring Devices List: Each emergency generator is equipped with a non-resettable hour meter to track compliance. The emergency generator design specifications, manufacturer model and serial numbers are all available as part of this application.

Applicable Requirements Exemption List: The facility is not requesting an exemption from otherwise applicable requirements.

Construction Schedule: Construction will begin upon permit issuance.

Source Testing Data (if referenced in calculations): Source testing data is supplied by manufacturer guaranteed emissions rates.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: SCRC-044-150-450	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input type="checkbox"/> CO <input checked="" type="checkbox"/> NO _x <input type="checkbox"/> VOC <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Selective Catalytic Reduction (SCR)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pre-catalyst exhaust temperature		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-04		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. ☐ New Permit ☒ Permit Modification

2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082

3. Facility Name: APPLE INC.

4. Facility Address: 21505 Reno Technology Pkwy

City: Sparks

State: NV

ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech

6. Date of Manufacture: TBD

7. Model No.: SCRC-044-150-450

8. Serial No.: TBD

9. Rated Control Efficiency (%): See Appendix C

Pollutants Controlled:

☐ CO ☒ NO_x ☐ VOC ☐ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):

10. Description of the control device: Selective Catalytic Reduction (SCR)

11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pre-catalyst exhaust temperature

12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-05

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. ☐ New Permit ☒ Permit Modification
2. **Existing facilities only.** Permit Number (AAIRXX-XXXX): AAIR16-0082
3. Facility Name: APPLE INC.
4. Facility Address: 21505 Reno Technology Pkwy
- City: Sparks State: NV ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech
6. Date of Manufacture: TBD
7. Model No.: SCRC-044-150-450
8. Serial No.: TBD
9. Rated Control Efficiency (%): See Appendix C
Pollutants Controlled:
☐ CO ☒ NO_x ☐ VOC ☐ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):
10. Description of the control device: Selective Catalytic Reduction (SCR)
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pre-catalyst exhaust temperature
12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-06

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. ☐ New Permit ☒ Permit Modification
2. Existing facilities only. Permit Number (AAIRXX-XXXX): **AAIR16-0082**
3. Facility Name: **APPLE INC.**
4. Facility Address: **21505 Reno Technology Pkwy**
- City: **Sparks** State: **NV** ZIP Code: **89442**

Control Device Specifications

5. Manufacturer: **Miratech** 6. Date of Manufacture: **TBD**
7. Model No.: **SCRC-044-150-450** 8. Serial No.: **TBD**
9. Rated Control Efficiency (%): See Appendix C
Pollutants Controlled:
☐ CO ☒ NO_x ☐ VOC ☐ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):
10. Description of the control device: **Selective Catalytic Reduction (SCR)**
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pre-catalyst exhaust temperature
12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-07

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: SCRC-044-150-450	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input type="checkbox"/> CO <input checked="" type="checkbox"/> NO _x <input type="checkbox"/> VOC <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Selective Catalytic Reduction (SCR)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pre-catalyst exhaust temperature		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-08		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: SCRC-044-150-450	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C Pollutants Controlled: <input type="checkbox"/> CO <input checked="" type="checkbox"/> NO _x <input type="checkbox"/> VOC <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Selective Catalytic Reduction (SCR)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pre-catalyst exhaust temperature		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-09		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information**Facility Information**1. ☐ New Permit ☒ Permit Modification

2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082

3. Facility Name: APPLE INC.

4. Facility Address: 21505 Reno Technology Pkwy

City: Sparks

State: NV

ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech

6. Date of Manufacture: TBD

7. Model No.: SCRC-044-150-450

8. Serial No.: TBD

9. Rated Control Efficiency (%): See Appendix C

Pollutants Controlled:

☐ CO ☒ NO_x ☐ VOC ☐ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):

10. Description of the control device: Selective Catalytic Reduction (SCR)

11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pre-catalyst exhaust temperature12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-10

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. ☐ New Permit ☒ Permit Modification
2. **Existing facilities only.** Permit Number (AAIRXX-XXXX): AAIR16-0082
3. Facility Name: APPLE INC.
4. Facility Address: 21505 Reno Technology Pkwy
- City: Sparks State: NV ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech
6. Date of Manufacture: TBD
7. Model No.: SCRC-044-150-450
8. Serial No.: TBD
9. Rated Control Efficiency (%): See Appendix C
Pollutants Controlled:
☐ CO ☒ NO_x ☐ VOC ☐ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):
10. Description of the control device: Selective Catalytic Reduction (SCR)
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pre-catalyst exhaust temperature
12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-11

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. ☐ New Permit ☒ Permit Modification
2. **Existing facilities only.** Permit Number (AAIRXX-XXXX): AAIR16-0082
3. Facility Name: APPLE INC.
4. Facility Address: 21505 Reno Technology Pkwy
- City: Sparks State: NV ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech 6. Date of Manufacture: TBD
7. Model No.: SCRC-044-150-450 8. Serial No.: TBD
9. Rated Control Efficiency (%): See Appendix C
Pollutants Controlled:
☐ CO ☒ NO_x ☐ VOC ☐ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):
10. Description of the control device: Selective Catalytic Reduction (SCR)
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pre-catalyst exhaust temperature
12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-12

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

APPENDIX B SITE MAPS AND PROCESS FLOW DIAGRAMS

INTERNAL COMBUSTION ENGINE (ICE) WORKSHEET

FOR AQMD USE ONLY

Permit No.:

Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Engine Specifications

5. Emission Unit ID (EU ID): RMR02 Gen-01	
6. Engine Manufacturer: Cummins	7. Date of Engine Manufacture: 4/4/2013
8. Engine Model No.: QSK78-G12	9. Engine Serial No.: 66302713
10. Engine Power Rating: 3,429 (hp) @ 1,800 RPM	
11. Date Engine Ordered: May 2013	12. Date of Installation: Prior to April 2014
13. No. of Cylinders: 18	
14. Displacement: 18.98 liters <u>OR</u> in ³	
15. Check ALL configurations that apply to this engine: <input type="checkbox"/> Continuous-duty <u>OR</u> <input checked="" type="checkbox"/> Emergency <input type="checkbox"/> Spark Ignition <u>OR</u> <input checked="" type="checkbox"/> Compression Ignition <input type="checkbox"/> Two Cycle <u>OR</u> <input checked="" type="checkbox"/> Four Cycle <input checked="" type="checkbox"/> Lean Burn <u>OR</u> <input type="checkbox"/> Rich Burn	
16. Fuel Type: <input type="checkbox"/> Natural Gas <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Propane/LPG <input type="checkbox"/> Other (specify):	
17. Maximum hours of operation per year: 500	

Equipment Specifications

18. Check ONE option below that best describes the equipment receiving power from the engine: <input checked="" type="checkbox"/> Generator <input type="checkbox"/> Fire Pump <input type="checkbox"/> Other (specify):
19. Equipment Manufacturer: Cummins
20. Equipment Output Rating: 2,557 kW (If not kW, specify unit):

21. Equipment Model No.: **2750DQLF**

22. Equipment Serial No.: **F130514698**

Engine Emissions Data

23. List the emission data for this unit for particulate matter under 10 microns (PM₁₀), particulate matter under 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs). Greenhouse gas (GHG) missions (calculated in CO₂e) are only required for sources subject to major New Source Review and/or Title V.

Pollutant	Emissions Rate	Units (check one)
PM ₁₀ /PM _{2.5}	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
NO _x	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
SO ₂	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
CO	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
VOC	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
GHG	Not required	<input type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr

24. Check ALL sources of emissions data referenced above and note for which pollutant(s):

☒ Manufacturer's Guarantee. Pollutant(s): **PM10/PM2.5, NOx, CO, VOC**

☐ Source Test. Pollutant(s):

☒ AP-42 (if no other data available). Pollutant(s): **SO2**

25. Specify the air pollution control methods used with the engine:

The generator will be retrofitted with a selective catalytic reduction (SCR) system, a diesel particulate filter (DPF), and a diesel oxidation catalyst (DOC) control device.

Regulation Applicability

26. **40 CFR Part 60, Subpart IIII:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is: (i) 2007 or later, for engines that are not fire pump engines; (ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines; (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are: (i) Manufactured after April 1, 2006, and are not fire pump engines, or (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006; (3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005; (4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

Regulation Applicability

27. **40 CFR Part 60, Subpart JJJJ**: Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☐ Yes ☒ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008; (2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is: (i) On or after July 1, 2008; or (ii) On or after January 1, 2009, for emergency engines; (3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 kW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) On or after January 1, 2009, for emergency engines; (4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 kW (25 HP); (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006; (6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

Regulation Applicability

28. **40 CFR Part 63, Subpart ZZZZ:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand; (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition; (b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site; (c) An area source of HAP emissions is a source that is not a major source; (d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable; (e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C; (f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f); (1) Existing residential emergency stationary RICE located at an area source of HAP emissions at do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

INTERNAL COMBUSTION ENGINE (ICE) WORKSHEET

FOR AQMD USE ONLY

Permit No.:

Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Engine Specifications

5. Emission Unit ID (EU ID): RMR02 Gen-02	
6. Engine Manufacturer: Cummins	7. Date of Engine Manufacture: 4/24/2013
8. Engine Model No.: QSK78-G12	9. Engine Serial No.: 66302740
10. Engine Power Rating: 3,429(hp) @ 1,800 RPM	
11. Date Engine Ordered: May 2013	12. Date of Installation: Prior to April 2014
13. No. of Cylinders: 18	
14. Displacement: 18.98 liters <u>OR</u> in ³	
15. Check ALL configurations that apply to this engine: <input type="checkbox"/> Continuous-duty <u>OR</u> <input checked="" type="checkbox"/> Emergency <input type="checkbox"/> Spark Ignition <u>OR</u> <input checked="" type="checkbox"/> Compression Ignition <input type="checkbox"/> Two Cycle <u>OR</u> <input checked="" type="checkbox"/> Four Cycle <input checked="" type="checkbox"/> Lean Burn <u>OR</u> <input type="checkbox"/> Rich Burn	
16. Fuel Type: <input type="checkbox"/> Natural Gas <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Propane/LPG <input type="checkbox"/> Other (specify):	
17. Maximum hours of operation per year: 500	

Equipment Specifications

18. Check ONE option below that best describes the equipment receiving power from the engine: <input checked="" type="checkbox"/> Generator <input type="checkbox"/> Fire Pump <input type="checkbox"/> Other (specify):
19. Equipment Manufacturer: Cummins
20. Equipment Output Rating: 2,557 kW (If not kW, specify unit):

21. Equipment Model No.: **2750DQLF**

22. Equipment Serial No.: **F130513996**

Engine Emissions Data

23. List the emission data for this unit for particulate matter under 10 microns (PM₁₀), particulate matter under 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs). Greenhouse gas (GHG) missions (calculated in CO₂e) are only required for sources subject to major New Source Review and/or Title V.

Pollutant	Emissions Rate	Units (check one)
PM ₁₀ /PM _{2.5}	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
NO _x	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
SO ₂	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
CO	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
VOC	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
GHG	Not required	<input type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr

24. Check ALL sources of emissions data referenced above and note for which pollutant(s):

☒ Manufacturer's Guarantee. Pollutant(s): **PM10/PM2.5, NOx, CO, VOC**

☐ Source Test. Pollutant(s):

☒ AP-42 (if no other data available). Pollutant(s): **SO2**

25. Specify the air pollution control methods used with the engine:

The generator will be retrofitted with a selective catalytic reduction (SCR) system, a diesel particulate filter (DPF), and a diesel oxidation catalyst (DOC) control device.

Regulation Applicability

26. **40 CFR Part 60, Subpart IIII:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is: (i) 2007 or later, for engines that are not fire pump engines; (ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines; (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are: (i) Manufactured after April 1, 2006, and are not fire pump engines, or (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006; (3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005; (4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

Regulation Applicability

27. **40 CFR Part 60, Subpart JJJJ**: Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☐ Yes ☒ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008; (2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is: (i) On or after July 1, 2008; or (ii) On or after January 1, 2009, for emergency engines; (3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 kW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) On or after January 1, 2009, for emergency engines; (4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 kW (25 HP); (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006; (6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

Regulation Applicability

28. **40 CFR Part 63, Subpart ZZZZ:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand; (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition; (b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site; (c) An area source of HAP emissions is a source that is not a major source; (d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable; (e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C; (f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f); (1) Existing residential emergency stationary RICE located at an area source of HAP emissions at do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

INTERNAL COMBUSTION ENGINE (ICE) WORKSHEET

FOR AQMD USE ONLY

Permit No.:

Supplemental Information**Facility Information**

1. ☐ New Permit ☒ Permit Modification
2. **Existing facilities only.** Permit Number (AAIRXX-XXXX): AAIR16-0082
3. Facility Name: APPLE INC.
4. Facility Address: 21505 Reno Technology Pkwy
- City: Sparks State: NV ZIP Code: 89442

Engine Specifications

5. Emission Unit ID (EU ID): RMR02 Gen-03
6. Engine Manufacturer: Cummins 7. Date of Engine Manufacture: 4/12/2013
8. Engine Model No.: QSK78-G12 9. Engine Serial No.: 66302727
10. Engine Power Rating: 3,429 (hp) @ 1,800 RPM
11. Date Engine Ordered: May 2013 12. Date of Installation: Prior to April 2014
13. No. of Cylinders: 18
14. Displacement: 18.98 liters OR in³
15. Check ALL configurations that apply to this engine:
☐ Continuous-duty OR ☒ Emergency
☐ Spark Ignition OR ☒ Compression Ignition
☐ Two Cycle OR ☒ Four Cycle
☒ Lean Burn OR ☐ Rich Burn
16. Fuel Type: ☐ Natural Gas ☒ Diesel ☐ Propane/LPG ☐ Other (specify):
17. Maximum hours of operation per year: 500

Equipment Specifications

18. Check ONE option below that best describes the equipment receiving power from the engine: ☒ Generator ☐ Fire Pump ☐ Other (specify):
19. Equipment Manufacturer: Cummins
20. Equipment Output Rating: 2,557 kW (If not kW, specify unit):

21. Equipment Model No.: **2750DQLF**

22. Equipment Serial No.: **F130515956**

Engine Emissions Data

23. List the emission data for this unit for particulate matter under 10 microns (PM₁₀), particulate matter under 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs). Greenhouse gas (GHG) missions (calculated in CO_{2e}) are only required for sources subject to major New Source Review and/or Title V.

Pollutant	Emissions Rate	Units (check one)
PM ₁₀ /PM _{2.5}	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
NO _x	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
SO ₂	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
CO	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
VOC	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
GHG	Not required	<input type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr

24. Check ALL sources of emissions data referenced above and note for which pollutant(s):

☒ Manufacturer's Guarantee. Pollutant(s): **PM10/PM2.5, NOx, CO, VOC**

☐ Source Test. Pollutant(s):

☒ AP-42 (if no other data available). Pollutant(s): **SO2**

25. Specify the air pollution control methods used with the engine:

The generator will be retrofitted with a selective catalytic reduction (SCR) system, a diesel particulate filter (DPF), and a diesel oxidation catalyst (DOC) control device.

Regulation Applicability

26. **40 CFR Part 60, Subpart IIII:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is: (i) 2007 or later, for engines that are not fire pump engines; (ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines; (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are: (i) Manufactured after April 1, 2006, and are not fire pump engines, or (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006; (3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005; (4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

Regulation Applicability

27. **40 CFR Part 60, Subpart JJJJ**: Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☐ Yes ☒ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008; (2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is: (i) On or after July 1, 2008; or (ii) On or after January 1, 2009, for emergency engines; (3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 kW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) On or after January 1, 2009, for emergency engines; (4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 kW (25 HP); (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006; (6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

Regulation Applicability

28. **40 CFR Part 63, Subpart ZZZZ:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand; (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition; (b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site; (c) An area source of HAP emissions is a source that is not a major source; (d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable; (e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C; (f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f); (1) Existing residential emergency stationary RICE located at an area source of HAP emissions at do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

INTERNAL COMBUSTION ENGINE (ICE) WORKSHEET

FOR AQMD USE ONLY

Permit No.:

Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Engine Specifications

5. Emission Unit ID (EU ID): RMR02 Gen-04	
6. Engine Manufacturer: Cummins	7. Date of Engine Manufacture: 4/28/2013
8. Engine Model No.: QSK78-G12	9. Engine Serial No.: 66303080
10. Engine Power Rating: 3,429(hp) @ 1,800 RPM	
11. Date Engine Ordered: May 2013	12. Date of Installation: January 2015
13. No. of Cylinders: 18	
14. Displacement: 18.98 liters <u>OR</u> in ³	
15. Check ALL configurations that apply to this engine: <input type="checkbox"/> Continuous-duty <u>OR</u> <input checked="" type="checkbox"/> Emergency <input type="checkbox"/> Spark Ignition <u>OR</u> <input checked="" type="checkbox"/> Compression Ignition <input type="checkbox"/> Two Cycle <u>OR</u> <input checked="" type="checkbox"/> Four Cycle <input checked="" type="checkbox"/> Lean Burn <u>OR</u> <input type="checkbox"/> Rich Burn	
16. Fuel Type: <input type="checkbox"/> Natural Gas <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Propane/LPG <input type="checkbox"/> Other (specify):	
17. Maximum hours of operation per year: 500	

Equipment Specifications

18. Check ONE option below that best describes the equipment receiving power from the engine: <input checked="" type="checkbox"/> Generator <input type="checkbox"/> Fire Pump <input type="checkbox"/> Other (specify):
19. Equipment Manufacturer: Cummins
20. Equipment Output Rating: 2,557 kW (If not kW, specify unit):

21. Equipment Model No.: **2750DQLF**

22. Equipment Serial No.: **F120691404**

Engine Emissions Data

23. List the emission data for this unit for particulate matter under 10 microns (PM₁₀), particulate matter under 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs). Greenhouse gas (GHG) missions (calculated in CO₂e) are only required for sources subject to major New Source Review and/or Title V.

Pollutant	Emissions Rate	Units (check one)
PM ₁₀ /PM _{2.5}	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
NO _x	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
SO ₂	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
CO	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
VOC	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
GHG	Not required	<input type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr

24. Check ALL sources of emissions data referenced above and note for which pollutant(s):

☒ Manufacturer's Guarantee. Pollutant(s): **PM10/PM2.5, NOx, CO, VOC**

☐ Source Test. Pollutant(s):

☒ AP-42 (if no other data available). Pollutant(s): **SO2**

25. Specify the air pollution control methods used with the engine:

The generator will be retrofitted with a selective catalytic reduction (SCR) system, a diesel particulate filter (DPF), and a diesel oxidation catalyst (DOC) control device.

Regulation Applicability

26. **40 CFR Part 60, Subpart IIII:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is: (i) 2007 or later, for engines that are not fire pump engines; (ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines; (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are: (i) Manufactured after April 1, 2006, and are not fire pump engines, or (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006; (3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005; (4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

Regulation Applicability

27. **40 CFR Part 60, Subpart JJJJ**: Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☐ Yes ☒ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008; (2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is: (i) On or after July 1, 2008; or (ii) On or after January 1, 2009, for emergency engines; (3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 kW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) On or after January 1, 2009, for emergency engines; (4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 kW (25 HP); (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006; (6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

Regulation Applicability

28. **40 CFR Part 63, Subpart ZZZZ:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand; (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition; (b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site; (c) An area source of HAP emissions is a source that is not a major source; (d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable; (e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C; (f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f); (1) Existing residential emergency stationary RICE located at an area source of HAP emissions at do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

INTERNAL COMBUSTION ENGINE (ICE) WORKSHEET

FOR AQMD USE ONLY

Permit No.:

Supplemental Information

Facility Information		
1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442
Engine Specifications		
5. Emission Unit ID (EU ID): RMR02 Gen-05		
6. Engine Manufacturer: Cummins		7. Date of Engine Manufacture: 9/9/2014
8. Engine Model No.: QSK78-G12		9. Engine Serial No.: 66303259
10. Engine Power Rating: 3,429 (hp) @ 1,800 RPM		
11. Date Engine Ordered: May 2013		12. Date of Installation: January 2015
13. No. of Cylinders: 18		
14. Displacement: 18.98 liters OR in ³		
15. Check ALL configurations that apply to this engine: <input type="checkbox"/> Continuous-duty OR <input checked="" type="checkbox"/> Emergency <input type="checkbox"/> Spark Ignition OR <input checked="" type="checkbox"/> Compression Ignition <input type="checkbox"/> Two Cycle OR <input checked="" type="checkbox"/> Four Cycle <input checked="" type="checkbox"/> Lean Burn OR <input type="checkbox"/> Rich Burn		
16. Fuel Type: <input type="checkbox"/> Natural Gas <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Propane/LPG <input type="checkbox"/> Other (specify):		
17. Maximum hours of operation per year: 500		
Equipment Specifications		
18. Check ONE option below that best describes the equipment receiving power from the engine: <input checked="" type="checkbox"/> Generator <input type="checkbox"/> Fire Pump <input type="checkbox"/> Other (specify):		
19. Equipment Manufacturer: Cummins		
20. Equipment Output Rating: 2,557 kW (If not kW, specify unit):		

21. Equipment Model No.: **2750DQLF**

22. Equipment Serial No.: **K140767432**

Engine Emissions Data

23. List the emission data for this unit for particulate matter under 10 microns (PM₁₀), particulate matter under 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs). Greenhouse gas (GHG) missions (calculated in CO₂e) are only required for sources subject to major New Source Review and/or Title V.

Pollutant	Emissions Rate	Units (check one)
PM ₁₀ /PM _{2.5}	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
NO _x	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
SO ₂	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
CO	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
VOC	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
GHG	Not required	<input type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr

24. Check ALL sources of emissions data referenced above and note for which pollutant(s):

☒ Manufacturer's Guarantee. Pollutant(s): **PM10/PM2.5, NOx, CO, VOC**

☐ Source Test. Pollutant(s):

☒ AP-42 (if no other data available). Pollutant(s): **SO2**

25. Specify the air pollution control methods used with the engine:

The generator will be retrofitted with a selective catalytic reduction (SCR) system, a diesel particulate filter (DPF), and a diesel oxidation catalyst (DOC) control device.

Regulation Applicability

26. 40 CFR Part 60, Subpart IIII: Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is: (i) 2007 or later, for engines that are not fire pump engines; (ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines; (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are: (i) Manufactured after April 1, 2006, and are not fire pump engines, or (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006; (3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005; (4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

Regulation Applicability

27. **40 CFR Part 60, Subpart JJJJ**: Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☐ Yes ☒ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008; (2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is: (i) On or after July 1, 2008; or (ii) On or after January 1, 2009, for emergency engines; (3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 kW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) On or after January 1, 2009, for emergency engines; (4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 kW (25 HP); (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006; (6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

Regulation Applicability

28. **40 CFR Part 63, Subpart ZZZZ:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand; (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition; (b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site; (c) An area source of HAP emissions is a source that is not a major source; (d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable; (e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C; (f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f); (1) Existing residential emergency stationary RICE located at an area source of HAP emissions at do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

INTERNAL COMBUSTION ENGINE (ICE) WORKSHEET

FOR AQMD USE ONLY

Permit No.:

Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Engine Specifications

5. Emission Unit ID (EU ID): RMR02 Gen-06	
6. Engine Manufacturer: Cummins	7. Date of Engine Manufacture: 9/25/2014
8. Engine Model No.: QSK78-G12	9. Engine Serial No.: 66303283
10. Engine Power Rating: 3,429(hp) @ 1,800 RPM	
11. Date Engine Ordered: May 2013	12. Date of Installation: January 2015
13. No. of Cylinders: 18	
14. Displacement: 18.98 liters OR in ³	
15. Check ALL configurations that apply to this engine: <input type="checkbox"/> Continuous-duty OR <input checked="" type="checkbox"/> Emergency <input type="checkbox"/> Spark Ignition OR <input checked="" type="checkbox"/> Compression Ignition <input type="checkbox"/> Two Cycle OR <input checked="" type="checkbox"/> Four Cycle <input checked="" type="checkbox"/> Lean Burn OR <input type="checkbox"/> Rich Burn	
16. Fuel Type: <input type="checkbox"/> Natural Gas <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Propane/LPG <input type="checkbox"/> Other (specify):	
17. Maximum hours of operation per year: 500	

Equipment Specifications

18. Check ONE option below that best describes the equipment receiving power from the engine: <input checked="" type="checkbox"/> Generator <input type="checkbox"/> Fire Pump <input type="checkbox"/> Other (specify):
19. Equipment Manufacturer: Cummins
20. Equipment Output Rating: 2,557 kW (If not kW, specify unit):

21. Equipment Model No.: **2750DQLF**

22. Equipment Serial No.: **K140765128**

Engine Emissions Data

23. List the emission data for this unit for particulate matter under 10 microns (PM₁₀), particulate matter under 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs). Greenhouse gas (GHG) missions (calculated in CO₂e) are only required for sources subject to major New Source Review and/or Title V.

Pollutant	Emissions Rate	Units (check one)
PM ₁₀ /PM _{2.5}	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
NO _x	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
SO ₂	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
CO	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
VOC	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
GHG	Not required	<input type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr

24. Check ALL sources of emissions data referenced above and note for which pollutant(s):

☒ Manufacturer's Guarantee. Pollutant(s): **PM10/PM2.5, NOx, CO, VOC**

☐ Source Test. Pollutant(s):

☒ AP-42 (if no other data available). Pollutant(s): **SO2**

25. Specify the air pollution control methods used with the engine:

The generator will be retrofitted with a selective catalytic reduction (SCR) system, a diesel particulate filter (DPF), and a diesel oxidation catalyst (DOC) control device.

Regulation Applicability

26. **40 CFR Part 60, Subpart IIII:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is: (i) 2007 or later, for engines that are not fire pump engines; (ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines; (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are: (i) Manufactured after April 1, 2006, and are not fire pump engines, or (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006; (3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005; (4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

Regulation Applicability

27. **40 CFR Part 60, Subpart JJJJ**: Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☐ Yes ☒ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008; (2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is: (i) On or after July 1, 2008; or (ii) On or after January 1, 2009, for emergency engines; (3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 kW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) On or after January 1, 2009, for emergency engines; (4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 kW (25 HP); (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006; (6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

Regulation Applicability

28. **40 CFR Part 63, Subpart ZZZZ:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand; (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition; (b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site; (c) An area source of HAP emissions is a source that is not a major source; (d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable; (e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C; (f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f); (1) Existing residential emergency stationary RICE located at an area source of HAP emissions at do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

INTERNAL COMBUSTION ENGINE (ICE) WORKSHEET

FOR AQMD USE ONLY

Permit No.:

Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Engine Specifications

5. Emission Unit ID (EU ID): RMR02 Gen-07	
6. Engine Manufacturer: Cummins	7. Date of Engine Manufacture: 6/16/2015
8. Engine Model No.: QSK78-G12	9. Engine Serial No.: 66303566
10. Engine Power Rating: 3,429 (hp) @ 1,800 RPM	
11. Date Engine Ordered: May 2013	12. Date of Installation: December 2015
13. No. of Cylinders: 18	
14. Displacement: 18.98 liters OR in ³	
15. Check ALL configurations that apply to this engine: <input type="checkbox"/> Continuous-duty OR <input checked="" type="checkbox"/> Emergency <input type="checkbox"/> Spark Ignition OR <input checked="" type="checkbox"/> Compression Ignition <input type="checkbox"/> Two Cycle OR <input checked="" type="checkbox"/> Four Cycle <input checked="" type="checkbox"/> Lean Burn OR <input type="checkbox"/> Rich Burn	
16. Fuel Type: <input type="checkbox"/> Natural Gas <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Propane/LPG <input type="checkbox"/> Other (specify):	
17. Maximum hours of operation per year: 500	

Equipment Specifications

18. Check ONE option below that best describes the equipment receiving power from the engine: <input checked="" type="checkbox"/> Generator <input type="checkbox"/> Fire Pump <input type="checkbox"/> Other (specify):
19. Equipment Manufacturer: Cummins
20. Equipment Output Rating: 2,557 kW (If not kW, specify unit):

21. Equipment Model No.: **2750DQLF**

22. Equipment Serial No.: **H150859854**

Engine Emissions Data

23. List the emission data for this unit for particulate matter under 10 microns (PM₁₀), particulate matter under 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs). Greenhouse gas (GHG) missions (calculated in CO₂e) are only required for sources subject to major New Source Review and/or Title V.

Pollutant	Emissions Rate	Units (check one)
PM ₁₀ /PM _{2.5}	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
NO _x	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
SO ₂	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
CO	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
VOC	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
GHG	Not required	<input type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr

24. Check ALL sources of emissions data referenced above and note for which pollutant(s):

☒ Manufacturer's Guarantee. Pollutant(s): **PM10/PM2.5, NOx, CO, VOC**

☐ Source Test. Pollutant(s):

☒ AP-42 (if no other data available). Pollutant(s): **SO2**

25. Specify the air pollution control methods used with the engine:

The generator will be retrofitted with a selective catalytic reduction (SCR) system, a diesel particulate filter (DPF), and a diesel oxidation catalyst (DOC) control device.

Regulation Applicability

26. **40 CFR Part 60, Subpart IIII:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is: (i) 2007 or later, for engines that are not fire pump engines; (ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines; (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are: (i) Manufactured after April 1, 2006, and are not fire pump engines, or (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006; (3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005; (4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

Regulation Applicability

27. **40 CFR Part 60, Subpart JJJJ**: Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☐ Yes ☒ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008; (2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is: (i) On or after July 1, 2008; or (ii) On or after January 1, 2009, for emergency engines; (3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 kW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) On or after January 1, 2009, for emergency engines; (4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 kW (25 HP); (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006; (6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

Regulation Applicability

28. **40 CFR Part 63, Subpart ZZZZ:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand; (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition; (b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site; (c) An area source of HAP emissions is a source that is not a major source; (d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable; (e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C; (f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f); (1) Existing residential emergency stationary RICE located at an area source of HAP emissions at do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

INTERNAL COMBUSTION ENGINE (ICE) WORKSHEET

FOR AQMD USE ONLY

Permit No.:

Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Engine Specifications

5. Emission Unit ID (EU ID): RMR02 Gen-08	
6. Engine Manufacturer: Cummins	7. Date of Engine Manufacture: 6/18/2015
8. Engine Model No.: QSK78-G12	9. Engine Serial No.: 66303571
10. Engine Power Rating: 3,429(hp) @ 1,800 RPM	
11. Date Engine Ordered: May 2013	12. Date of Installation: December 2015
13. No. of Cylinders: 18	
14. Displacement: 18.98 liters <u>OR</u> in ³	
15. Check ALL configurations that apply to this engine: <input type="checkbox"/> Continuous-duty <u>OR</u> <input checked="" type="checkbox"/> Emergency <input type="checkbox"/> Spark Ignition <u>OR</u> <input checked="" type="checkbox"/> Compression Ignition <input type="checkbox"/> Two Cycle <u>OR</u> <input checked="" type="checkbox"/> Four Cycle <input checked="" type="checkbox"/> Lean Burn <u>OR</u> <input type="checkbox"/> Rich Burn	
16. Fuel Type: <input type="checkbox"/> Natural Gas <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Propane/LPG <input type="checkbox"/> Other (specify):	
17. Maximum hours of operation per year: 500	

Equipment Specifications

18. Check ONE option below that best describes the equipment receiving power from the engine: <input checked="" type="checkbox"/> Generator <input type="checkbox"/> Fire Pump <input type="checkbox"/> Other (specify):
19. Equipment Manufacturer: Cummins
20. Equipment Output Rating: 2,557 kW (If not kW, specify unit):

21. Equipment Model No.: **2750DQLF**

22. Equipment Serial No.: **H150859502**

Engine Emissions Data

23. List the emission data for this unit for particulate matter under 10 microns (PM₁₀), particulate matter under 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs). Greenhouse gas (GHG) missions (calculated in CO₂e) are only required for sources subject to major New Source Review and/or Title V.

Pollutant	Emissions Rate	Units (check one)
PM ₁₀ /PM _{2.5}	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
NO _x	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
SO ₂	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
CO	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
VOC	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
GHG	Not required	<input type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr

24. Check ALL sources of emissions data referenced above and note for which pollutant(s):

☒ Manufacturer's Guarantee. Pollutant(s): **PM10/PM2.5, NOx, CO, VOC**

☐ Source Test. Pollutant(s):

☒ AP-42 (if no other data available). Pollutant(s): **SO2**

25. Specify the air pollution control methods used with the engine:

The generator will be retrofitted with a selective catalytic reduction (SCR) system, a diesel particulate filter (DPF), and a diesel oxidation catalyst (DOC) control device.

Regulation Applicability

26. **40 CFR Part 60, Subpart IIII:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is: (i) 2007 or later, for engines that are not fire pump engines; (ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines; (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are: (i) Manufactured after April 1, 2006, and are not fire pump engines, or (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006; (3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005; (4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

Regulation Applicability

27. **40 CFR Part 60, Subpart JJJJ**: Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☐ Yes ☒ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008; (2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is: (i) On or after July 1, 2008; or (ii) On or after January 1, 2009, for emergency engines; (3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 kW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) On or after January 1, 2009, for emergency engines; (4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 kW (25 HP); (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006; (6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

Regulation Applicability

28. **40 CFR Part 63, Subpart ZZZZ:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand; (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition; (b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site; (c) An area source of HAP emissions is a source that is not a major source; (d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable; (e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C; (f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f); (1) Existing residential emergency stationary RICE located at an area source of HAP emissions at do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

INTERNAL COMBUSTION ENGINE (ICE) WORKSHEET

FOR AQMD USE ONLY

Permit No.:

Supplemental Information

Facility Information

1. ☐ New Permit ☒ Permit Modification
2. **Existing facilities only.** Permit Number (AAIRXX-XXXX): **AAIR16-0082**
3. Facility Name: **APPLE INC.**
4. Facility Address: **21505 Reno Technology Pkwy**
- City: **Sparks** State: **NV** ZIP Code: **89442**

Engine Specifications

5. Emission Unit ID (EU ID): **RMR02 Gen-09**
6. Engine Manufacturer: **Cummins** 7. Date of Engine Manufacture: **6/18/2015**
8. Engine Model No.: **QSK78-G12** 9. Engine Serial No.: **66303570**
10. Engine Power Rating: **3,429 (hp) @ 1,800 RPM**
11. Date Engine Ordered: **May 2013** 12. Date of Installation: **December 2015**
13. No. of Cylinders: **18**
14. Displacement: **18.98** liters OR **in³**
15. Check ALL configurations that apply to this engine:
☐ Continuous-duty OR ☒ Emergency
☐ Spark Ignition OR ☒ Compression Ignition
☐ Two Cycle OR ☒ Four Cycle
☒ Lean Burn OR ☐ Rich Burn
16. Fuel Type: ☐ Natural Gas ☒ Diesel ☐ Propane/LPG ☐ Other (specify):
17. Maximum hours of operation per year: **500**

Equipment Specifications

18. Check ONE option below that best describes the equipment receiving power from the engine: ☒ Generator ☐ Fire Pump ☐ Other (specify):
19. Equipment Manufacturer: **Cummins**
20. Equipment Output Rating: **2,557 kW** (If not kW, specify unit):

21. Equipment Model No.: **2750DQLF**

22. Equipment Serial No.: **G150856668**

Engine Emissions Data

23. List the emission data for this unit for particulate matter under 10 microns (PM₁₀), particulate matter under 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs). Greenhouse gas (GHG) missions (calculated in CO₂e) are only required for sources subject to major New Source Review and/or Title V.

Pollutant	Emissions Rate	Units (check one)
PM ₁₀ /PM _{2.5}	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
NO _x	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
SO ₂	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
CO	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
VOC	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
GHG	Not required	<input type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr

24. Check ALL sources of emissions data referenced above and note for which pollutant(s):

☒ Manufacturer's Guarantee. Pollutant(s): **PM10/PM2.5, NOx, CO, VOC**

☐ Source Test. Pollutant(s):

☒ AP-42 (if no other data available). Pollutant(s): **SO2**

25. Specify the air pollution control methods used with the engine:

The generator will be retrofitted with a selective catalytic reduction (SCR) system, a diesel particulate filter (DPF), and a diesel oxidation catalyst (DOC) control device.

Regulation Applicability

26. **40 CFR Part 60, Subpart III:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is: (i) 2007 or later, for engines that are not fire pump engines; (ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines; (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are: (i) Manufactured after April 1, 2006, and are not fire pump engines, or (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006; (3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005; (4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

Regulation Applicability

27. **40 CFR Part 60, Subpart JJJJ**: Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☐ Yes ☒ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008; (2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is: (i) On or after July 1, 2008; or (ii) On or after January 1, 2009, for emergency engines; (3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 kW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) On or after January 1, 2009, for emergency engines; (4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 kW (25 HP); (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006; (6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

Regulation Applicability

28. **40 CFR Part 63, Subpart ZZZZ:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand; (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition; (b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site; (c) An area source of HAP emissions is a source that is not a major source; (d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable; (e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C; (f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f); (1) Existing residential emergency stationary RICE located at an area source of HAP emissions at do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

INTERNAL COMBUSTION ENGINE (ICE) WORKSHEET

FOR AQMD USE ONLY

Permit No.:

Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Engine Specifications

5. Emission Unit ID (EU ID): RMR02 Gen-10	
6. Engine Manufacturer: Cummins	7. Date of Engine Manufacture: 6/17/2015
8. Engine Model No.: QSK78-G12	9. Engine Serial No.: 66303568
10. Engine Power Rating: 3,429 (hp) @ 1,800 RPM	
11. Date Engine Ordered: May 2013	12. Date of Installation: December 2015
13. No. of Cylinders: 18	
14. Displacement: 18.98 liters <u>OR</u> in ³	
15. Check ALL configurations that apply to this engine: <input type="checkbox"/> Continuous-duty <u>OR</u> <input checked="" type="checkbox"/> Emergency <input type="checkbox"/> Spark Ignition <u>OR</u> <input checked="" type="checkbox"/> Compression Ignition <input type="checkbox"/> Two Cycle <u>OR</u> <input checked="" type="checkbox"/> Four Cycle <input checked="" type="checkbox"/> Lean Burn <u>OR</u> <input type="checkbox"/> Rich Burn	
16. Fuel Type: <input type="checkbox"/> Natural Gas <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Propane/LPG <input type="checkbox"/> Other (specify):	
17. Maximum hours of operation per year: 500	

Equipment Specifications

18. Check ONE option below that best describes the equipment receiving power from the engine: <input checked="" type="checkbox"/> Generator <input type="checkbox"/> Fire Pump <input type="checkbox"/> Other (specify):
19. Equipment Manufacturer: Cummins
20. Equipment Output Rating: 2,557 kW (If not kW, specify unit):

21. Equipment Model No.: **2750DQLF**

22. Equipment Serial No.: **G150855955**

Engine Emissions Data

23. List the emission data for this unit for particulate matter under 10 microns (PM₁₀), particulate matter under 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs). Greenhouse gas (GHG) missions (calculated in CO₂e) are only required for sources subject to major New Source Review and/or Title V.

Pollutant	Emissions Rate	Units (check one)
PM ₁₀ /PM _{2.5}	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
NO _x	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
SO ₂	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
CO	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
VOC	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
GHG	Not required	<input type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr

24. Check ALL sources of emissions data referenced above and note for which pollutant(s):

☒ Manufacturer's Guarantee. Pollutant(s): **PM10/PM2.5, NOx, CO, VOC**

☐ Source Test. Pollutant(s):

☒ AP-42 (if no other data available). Pollutant(s): **SO2**

25. Specify the air pollution control methods used with the engine:

The generator will be retrofitted with a selective catalytic reduction (SCR) system, a diesel particulate filter (DPF), and a diesel oxidation catalyst (DOC) control device.

Regulation Applicability

26. **40 CFR Part 60, Subpart IIII:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is: (i) 2007 or later, for engines that are not fire pump engines; (ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines; (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are: (i) Manufactured after April 1, 2006, and are not fire pump engines, or (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006; (3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005; (4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

Regulation Applicability

27. **40 CFR Part 60, Subpart JJJJ**: Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☐ Yes ☒ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008; (2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is: (i) On or after July 1, 2008; or (ii) On or after January 1, 2009, for emergency engines; (3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 kW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) On or after January 1, 2009, for emergency engines; (4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 kW (25 HP); (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006; (6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

Regulation Applicability

28. **40 CFR Part 63, Subpart ZZZZ:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand; (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition; (b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site; (c) An area source of HAP emissions is a source that is not a major source; (d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable; (e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C; (f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f); (1) Existing residential emergency stationary RICE located at an area source of HAP emissions at do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

INTERNAL COMBUSTION ENGINE (ICE) WORKSHEET

FOR AQMD USE ONLY

Permit No.:

Supplemental Information

Facility Information		
1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442
Engine Specifications		
5. Emission Unit ID (EU ID): RMR02 Gen-11		
6. Engine Manufacturer: Cummins	7. Date of Engine Manufacture: 6/17/2015	
8. Engine Model No.: QSK78-G12	9. Engine Serial No.: 66303569	
10. Engine Power Rating: 3,429 (hp) @ 1,800 RPM		
11. Date Engine Ordered: May 2013	12. Date of Installation: December 2015	
13. No. of Cylinders: 18		
14. Displacement: 18.98 liters OR in ³		
15. Check ALL configurations that apply to this engine: <input type="checkbox"/> Continuous-duty OR <input checked="" type="checkbox"/> Emergency <input type="checkbox"/> Spark Ignition OR <input checked="" type="checkbox"/> Compression Ignition <input type="checkbox"/> Two Cycle OR <input checked="" type="checkbox"/> Four Cycle <input checked="" type="checkbox"/> Lean Burn OR <input type="checkbox"/> Rich Burn		
16. Fuel Type: <input type="checkbox"/> Natural Gas <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Propane/LPG <input type="checkbox"/> Other (specify):		
17. Maximum hours of operation per year: 500		
Equipment Specifications		
18. Check ONE option below that best describes the equipment receiving power from the engine: <input checked="" type="checkbox"/> Generator <input type="checkbox"/> Fire Pump <input type="checkbox"/> Other (specify):		
19. Equipment Manufacturer: Cummins		
20. Equipment Output Rating: 2,557 kW (If not kW, specify unit):		

21. Equipment Model No.: **2750DQLF**

22. Equipment Serial No.: **H150858574**

Engine Emissions Data

23. List the emission data for this unit for particulate matter under 10 microns (PM₁₀), particulate matter under 2.5 microns (PM_{2.5}), nitrogen oxides (NOx), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs). Greenhouse gas (GHG) missions (calculated in CO_{2e}) are only required for sources subject to major New Source Review and/or Title V.

Pollutant	Emissions Rate	Units (check one)
PM ₁₀ /PM _{2.5}	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
NOx	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
SO ₂	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
CO	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
VOC	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
GHG	Not required	<input type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr

24. Check ALL sources of emissions data referenced above and note for which pollutant(s):

☒ Manufacturer's Guarantee. Pollutant(s): **PM10/PM2.5, NOx, CO, VOC**

☐ Source Test. Pollutant(s):

☒ AP-42 (if no other data available). Pollutant(s): **SO2**

25. Specify the air pollution control methods used with the engine:

The generator will be retrofitted with a selective catalytic reduction (SCR) system, a diesel particulate filter (DPF), and a diesel oxidation catalyst (DOC) control device.

Regulation Applicability

26. **40 CFR Part 60, Subpart IIII:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is: (i) 2007 or later, for engines that are not fire pump engines; (ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines; (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are: (i) Manufactured after April 1, 2006, and are not fire pump engines, or (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006; (3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005; (4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

Regulation Applicability

27. **40 CFR Part 60, Subpart JJJJ**: Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☐ Yes ☒ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008; (2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is: (i) On or after July 1, 2008; or (ii) On or after January 1, 2009, for emergency engines; (3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 kW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) On or after January 1, 2009, for emergency engines; (4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 kW (25 HP); (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006; (6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

Regulation Applicability

28. **40 CFR Part 63, Subpart ZZZZ:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand; (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition; (b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site; (c) An area source of HAP emissions is a source that is not a major source; (d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable; (e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C; (f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f); (1) Existing residential emergency stationary RICE located at an area source of HAP emissions at do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

INTERNAL COMBUSTION ENGINE (ICE) WORKSHEET

FOR AQMD USE ONLY

Permit No.:

Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Engine Specifications

5. Emission Unit ID (EU ID): RMR02 Gen-12	
6. Engine Manufacturer: Cummins	7. Date of Engine Manufacture: 6/15/2015
8. Engine Model No.: QSK78-G12	9. Engine Serial No.: 66303564
10. Engine Power Rating: 3,429 (hp) @ 1,800 RPM	
11. Date Engine Ordered: May 2013	12. Date of Installation: December 2015
13. No. of Cylinders: 18	
14. Displacement: 18.98 liters <u>OR</u> in ³	
15. Check ALL configurations that apply to this engine: <input type="checkbox"/> Continuous-duty <u>OR</u> <input checked="" type="checkbox"/> Emergency <input type="checkbox"/> Spark Ignition <u>OR</u> <input checked="" type="checkbox"/> Compression Ignition <input type="checkbox"/> Two Cycle <u>OR</u> <input checked="" type="checkbox"/> Four Cycle <input checked="" type="checkbox"/> Lean Burn <u>OR</u> <input type="checkbox"/> Rich Burn	
16. Fuel Type: <input type="checkbox"/> Natural Gas <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Propane/LPG <input type="checkbox"/> Other (specify):	
17. Maximum hours of operation per year: 500	

Equipment Specifications

18. Check ONE option below that best describes the equipment receiving power from the engine: <input checked="" type="checkbox"/> Generator <input type="checkbox"/> Fire Pump <input type="checkbox"/> Other (specify):
19. Equipment Manufacturer: Cummins
20. Equipment Output Rating: 2,557 kW (If not kW, specify unit):

21. Equipment Model No.: **2750DQLF**

22. Equipment Serial No.: **H150859211**

Engine Emissions Data

23. List the emission data for this unit for particulate matter under 10 microns (PM₁₀), particulate matter under 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs). Greenhouse gas (GHG) missions (calculated in CO₂e) are only required for sources subject to major New Source Review and/or Title V.

Pollutant	Emissions Rate	Units (check one)
PM ₁₀ /PM _{2.5}	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
NO _x	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
SO ₂	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
CO	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
VOC	See Appendix C	<input checked="" type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr
GHG	Not required	<input type="checkbox"/> g/bhp-hr <u>OR</u> <input type="checkbox"/> g/kW-hr

24. Check ALL sources of emissions data referenced above and note for which pollutant(s):

☒ Manufacturer's Guarantee. Pollutant(s): **PM10/PM2.5, NOx, CO, VOC**

☐ Source Test. Pollutant(s):

☒ AP-42 (if no other data available). Pollutant(s): **SO2**

25. Specify the air pollution control methods used with the engine:

The generator will be retrofitted with a selective catalytic reduction (SCR) system, a diesel particulate filter (DPF), and a diesel oxidation catalyst (DOC) control device.

Regulation Applicability

26. **40 CFR Part 60, Subpart IIII:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is: (i) 2007 or later, for engines that are not fire pump engines; (ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines; (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are: (i) Manufactured after April 1, 2006, and are not fire pump engines, or (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006; (3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005; (4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

Regulation Applicability

27. 40 CFR Part 60, Subpart JJJJ: Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☐ Yes ☒ No

The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. (1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008; (2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is: (i) On or after July 1, 2008; or (ii) On or after January 1, 2009, for emergency engines; (3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 kW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) On or after January 1, 2009, for emergency engines; (4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP), (ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP, (iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP, or (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 kW (25 HP); (5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006; (6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

Regulation Applicability

28. **40 CFR Part 63, Subpart ZZZZ:** Is the engine subject to this regulation and/or applicable to the paragraph in this section? ☒ Yes ☐ No

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand; (a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition; (b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site; (c) An area source of HAP emissions is a source that is not a major source; (d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable; (e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C; (f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f); (1) Existing residential emergency stationary RICE located at an area source of HAP emissions at do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii); (3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: MECR-OX-SB2069-2400-1450-291	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input checked="" type="checkbox"/> CO <input type="checkbox"/> NO _x <input checked="" type="checkbox"/> VOC <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Diesel Oxidation Catalyst (DOC)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pre-catalyst exhaust temperature		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-01		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ **Supplemental Information**

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: MECR-OX-SB2069-2400-1450-291	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled: <input checked="" type="checkbox"/> CO <input type="checkbox"/> NO _x <input checked="" type="checkbox"/> VOC <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Diesel Oxidation Catalyst (DOC)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pre-catalyst exhaust temperature		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-02		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. ☐ New Permit ☒ Permit Modification
2. Existing facilities only. Permit Number (AAIRXX-XXXX): **AAIR16-0082**
3. Facility Name: **APPLE INC.**
4. Facility Address: **21505 Reno Technology Pkwy**
- City: **Sparks** State: **NV** ZIP Code: **89442**

Control Device Specifications

5. Manufacturer: **Miratech** 6. Date of Manufacture: **TBD**
7. Model No.: **MECR-OX-SB2069-2400-1450-291** 8. Serial No.: **TBD**
9. Rated Control Efficiency (%): See Appendix C
Pollutants Controlled:
☒ CO ☐ NO_x ☒ VOC ☐ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):
10. Description of the control device: **Diesel Oxidation Catalyst (DOC)**
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pre-catalyst exhaust temperature
12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-03

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: MECR-OX-SB2069-2400-1450-291	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input checked="" type="checkbox"/> CO <input type="checkbox"/> NO _x <input checked="" type="checkbox"/> VOC <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Diesel Oxidation Catalyst (DOC)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pre-catalyst exhaust temperature		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-04		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. ☐ New Permit ☒ Permit Modification
2. **Existing facilities only.** Permit Number (AAIRXX-XXXX): **AAIR16-0082**
3. Facility Name: **APPLE INC.**
4. Facility Address: **21505 Reno Technology Pkwy**
- City: **Sparks** State: **NV** ZIP Code: **89442**

Control Device Specifications

5. Manufacturer: **Miratech** 6. Date of Manufacture: **TBD**
7. Model No.: **MECR-OX-SB2069-2400-1450-291** 8. Serial No.: **TBD**
9. Rated Control Efficiency (%): **See Appendix C**
Pollutants Controlled:
☒ CO ☐ NO_x ☒ VOC ☐ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):
10. Description of the control device: **Diesel Oxidation Catalyst (DOC)**
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pre-catalyst exhaust temperature
12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-05

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE
WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. ☐ New Permit ☒ Permit Modification

2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082

3. Facility Name: APPLE INC.

4. Facility Address: 21505 Reno Technology Pkwy

City: Sparks

State: NV

ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech

6. Date of Manufacture: TBD

7. Model No.: MECR-OX-SB2069-2400-1450-291

8. Serial No.: TBD

9. Rated Control Efficiency (%): See Appendix C

Pollutants Controlled:

☒ CO ☐ NO_x ☒ VOC ☐ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):

10. Description of the control device: Diesel Oxidation Catalyst (DOC)

11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pre-catalyst exhaust temperature

12. Emission unit(s) or process(es) venting emissions to the control device:

RMR02 Gen-06

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: MECR-OX-SB2069-2400-1450-291	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input checked="" type="checkbox"/> CO <input type="checkbox"/> NO _x <input checked="" type="checkbox"/> VOC <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Diesel Oxidation Catalyst (DOC)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pre-catalyst exhaust temperature		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-07		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: MECR-OX-SB2069-2400-1450-291	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input checked="" type="checkbox"/> CO <input type="checkbox"/> NO _x <input checked="" type="checkbox"/> VOC <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Diesel Oxidation Catalyst (DOC)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pre-catalyst exhaust temperature		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-08		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: MECR-OX-SB2069-2400-1450-291	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input checked="" type="checkbox"/> CO <input type="checkbox"/> NO _x <input checked="" type="checkbox"/> VOC <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Diesel Oxidation Catalyst (DOC)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pre-catalyst exhaust temperature		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-09		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information**Facility Information**1. ☐ New Permit ☒ Permit Modification

2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082

3. Facility Name: APPLE INC.

4. Facility Address: 21505 Reno Technology Pkwy

City: Sparks

State: NV

ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech

6. Date of Manufacture: TBD

7. Model No.: MECR-OX-SB2069-2400-1450-291

8. Serial No.: TBD

9. Rated Control Efficiency (%): See Appendix C

Pollutants Controlled:

☒ CO ☐ NO_x ☒ VOC ☐ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):

10. Description of the control device: Diesel Oxidation Catalyst (DOC)

11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pre-catalyst exhaust temperature12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-10

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: MECR-OX-SB2069-2400-1450-291	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input checked="" type="checkbox"/> CO <input type="checkbox"/> NO _x <input checked="" type="checkbox"/> VOC <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Diesel Oxidation Catalyst (DOC)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pre-catalyst exhaust temperature		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-11		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. ☐ New Permit ☒ Permit Modification
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082
3. Facility Name: APPLE INC.
4. Facility Address: 21505 Reno Technology Pkwy
- City: Sparks State: NV ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech
6. Date of Manufacture: TBD
7. Model No.: MECR-OX-SB2069-2400-1450-291
8. Serial No.: TBD
9. Rated Control Efficiency (%): See Appendix C
Pollutants Controlled:
☒ CO ☐ NO_x ☒ VOC ☐ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):
10. Description of the control device: Diesel Oxidation Catalyst (DOC)
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pre-catalyst exhaust temperature
12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-12

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. ☐ New Permit ☒ Permit Modification
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082
3. Facility Name: APPLE INC.
4. Facility Address: 21505 Reno Technology Pkwy
- City: Sparks State: NV ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech
6. Date of Manufacture: TBD
7. Model No.: LTR2-DPF-Filter-Block
8. Serial No.: TBD
9. Rated Control Efficiency (%): See Appendix C
Pollutants Controlled:
☐ CO ☐ NO_x ☐ VOC ☒ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):
10. Description of the control device: Diesel Particulate Filter (DPF)
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pressure drop
12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-01

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: LTR2-DPF-Filter-Block	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input type="checkbox"/> CO <input type="checkbox"/> NO _x <input type="checkbox"/> VOC <input checked="" type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Diesel Particulate Filter (DPF)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pressure drop		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-02		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information

1. ☐ New Permit ☒ Permit Modification
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082
3. Facility Name: APPLE INC.
4. Facility Address: 21505 Reno Technology Pkwy
- City: Sparks State: NV ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech
6. Date of Manufacture: TBD
7. Model No.: LTR2-DPF-Filter-Block
8. Serial No.: TBD
9. Rated Control Efficiency (%): See Appendix C
Pollutants Controlled:
☐ CO ☐ NO_x ☐ VOC ☒ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):
10. Description of the control device: Diesel Particulate Filter (DPF)
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pressure drop
12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-03

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

FOR AQMD USE ONLY

Permit No.:

☐ Supplemental Information

Facility Information		
1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442
Control Device Specifications		
5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: LTR2-DPF-Filter-Block	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input type="checkbox"/> CO <input type="checkbox"/> NO _x <input type="checkbox"/> VOC <input checked="" type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Diesel Particulate Filter (DPF)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pressure drop		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-04		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

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Permit No.:

☐ Supplemental Information**Facility Information**

1. ☐ New Permit ☒ Permit Modification
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082
3. Facility Name: APPLE INC.
4. Facility Address: 21505 Reno Technology Pkwy
- City: Sparks State: NV ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech 6. Date of Manufacture: TBD
7. Model No.: LTR2-DPF-Filter-Block 8. Serial No.: TBD
9. Rated Control Efficiency (%): See Appendix C
Pollutants Controlled:
☐ CO ☐ NO_x ☐ VOC ☒ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):
10. Description of the control device: Diesel Particulate Filter (DPF)
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pressure drop
12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-05

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

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☐ **Supplemental Information**

Facility Information

1. ☐ New Permit ☒ Permit Modification
2. **Existing facilities only.** Permit Number (AAIRXX-XXXX): **AAIR16-0082**
3. Facility Name: **APPLE INC.**
4. Facility Address: **21505 Reno Technology Pkwy**
- City: **Sparks** State: **NV** ZIP Code: **89442**

Control Device Specifications

5. Manufacturer: **Miratech** 6. Date of Manufacture: **TBD**
7. Model No.: **LTR2-DPF-Filter-Block** 8. Serial No.: **TBD**
9. Rated Control Efficiency (%): See Appendix C
Pollutants Controlled:
☐ CO ☐ NO_x ☐ VOC ☒ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):
10. Description of the control device: **Diesel Particulate Filter (DPF)**
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pressure drop
12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-06

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

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Facility Information

1. ☐ New Permit ☒ Permit Modification

2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082

3. Facility Name: APPLE INC.

4. Facility Address: 21505 Reno Technology Pkwy

City: Sparks

State: NV

ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech

6. Date of Manufacture: TBD

7. Model No.: LTR2-DPF-Filter-Block

8. Serial No.: TBD

9. Rated Control Efficiency (%): See Appendix C

Pollutants Controlled:

☐ CO ☐ NO_x ☐ VOC ☒ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):

10. Description of the control device: Diesel Particulate Filter (DPF)

11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pressure drop

12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-07

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

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Facility Information

1. ☐ New Permit ☒ Permit Modification
2. Existing facilities only. Permit Number (AAIRXX-XXXX): **AAIR16-0082**
3. Facility Name: **APPLE INC.**
4. Facility Address: **21505 Reno Technology Pkwy**
- City: **Sparks** State: **NV** ZIP Code: **89442**

Control Device Specifications

5. Manufacturer: **Miratech** 6. Date of Manufacture: **TBD**
7. Model No.: **LTR2-DPF-Filter-Block** 8. Serial No.: **TBD**
9. Rated Control Efficiency (%): See Appendix C
Pollutants Controlled:
☐ CO ☐ NO_x ☐ VOC ☒ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):
10. Description of the control device: **Diesel Particulate Filter (DPF)**
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pressure drop
12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-08

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

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☐ Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: LTR2-DPF-Filter-Block	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input type="checkbox"/> CO <input type="checkbox"/> NO _x <input type="checkbox"/> VOC <input checked="" type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Diesel Particulate Filter (DPF)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pressure drop		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-09		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

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☐ Supplemental Information**Facility Information**1. ☐ New Permit ☒ Permit Modification

2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082

3. Facility Name: APPLE INC.

4. Facility Address: 21505 Reno Technology Pkwy

City: Sparks

State: NV

ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech

6. Date of Manufacture: TBD

7. Model No.: LTR2-DPF-Filter-Block

8. Serial No.: TBD

9. Rated Control Efficiency (%): See Appendix C

Pollutants Controlled:

☐ CO ☐ NO_x ☐ VOC ☒ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):

10. Description of the control device: Diesel Particulate Filter (DPF)

11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pressure drop12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-10

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

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☐ Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: LTR2-DPF-Filter-Block	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input type="checkbox"/> CO <input type="checkbox"/> NO _x <input type="checkbox"/> VOC <input checked="" type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Diesel Particulate Filter (DPF)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pressure drop		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-11		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

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☐ Supplemental Information

Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: LTR2-DPF-Filter-Block	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input type="checkbox"/> CO <input type="checkbox"/> NO _x <input type="checkbox"/> VOC <input checked="" type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Diesel Particulate Filter (DPF)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pressure drop		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-12		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

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Permit No.:

☐ Supplemental Information**Facility Information**

1. ☐ New Permit ☒ Permit Modification
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082
3. Facility Name: APPLE INC.
4. Facility Address: 21505 Reno Technology Pkwy
- City: Sparks State: NV ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech 6. Date of Manufacture: TBD
7. Model No.: SCRC-044-150-450 8. Serial No.: TBD
9. Rated Control Efficiency (%): See Appendix C
Pollutants Controlled:
☐ CO ☒ NO_x ☐ VOC ☐ PM₁₀ ☐ PM_{2.5} ☐ SO₂ ☐ Other (specify):
10. Description of the control device: Selective Catalytic Reduction (SCR)
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH):
Pre-catalyst exhaust temperature
12. Emission unit(s) or process(es) venting emissions to the control device:
RMR02 Gen-01

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

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Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: SCRC-044-150-450	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input type="checkbox"/> CO <input checked="" type="checkbox"/> NO _x <input type="checkbox"/> VOC <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Selective Catalytic Reduction (SCR)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pre-catalyst exhaust temperature		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-02		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.

EMISSION CONTROL DEVICE WORKSHEET

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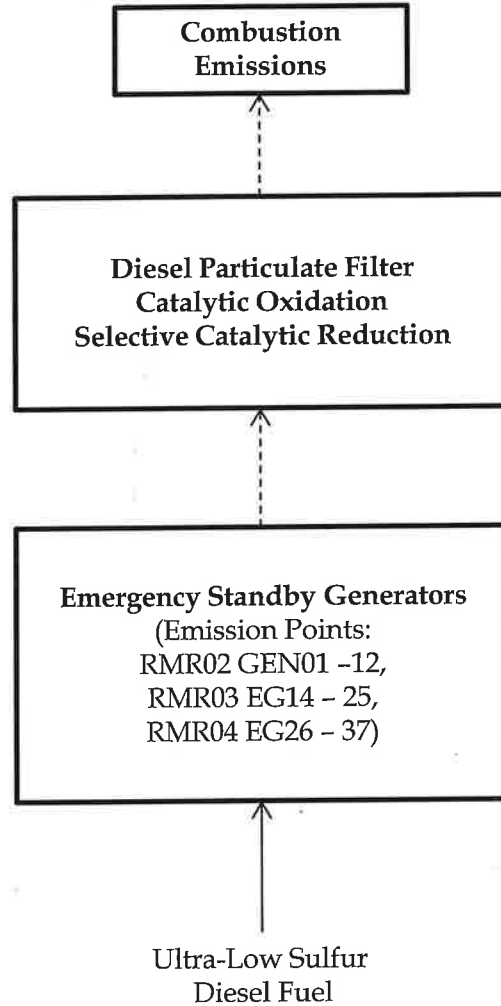
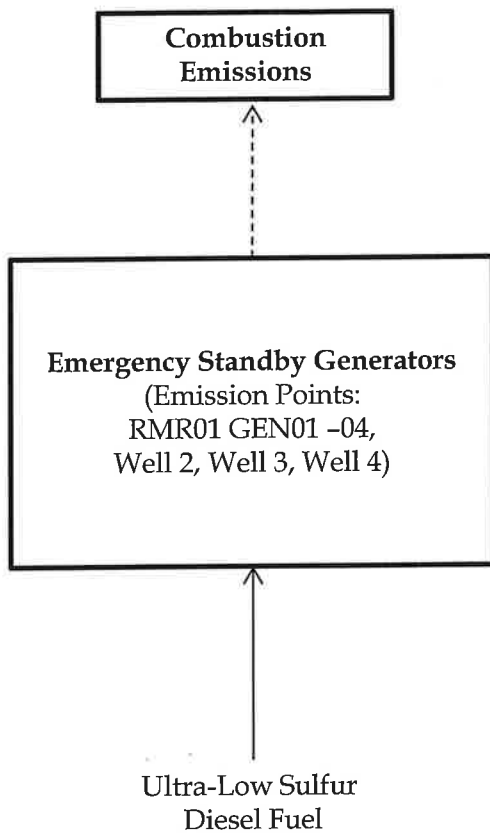
Facility Information

1. <input type="checkbox"/> New Permit <input checked="" type="checkbox"/> Permit Modification		
2. Existing facilities only. Permit Number (AAIRXX-XXXX): AAIR16-0082		
3. Facility Name: APPLE INC.		
4. Facility Address: 21505 Reno Technology Pkwy		
City: Sparks	State: NV	ZIP Code: 89442

Control Device Specifications

5. Manufacturer: Miratech		6. Date of Manufacture: TBD
7. Model No.: SCRC-044-150-450	8. Serial No.: TBD	
9. Rated Control Efficiency (%): See Appendix C		
Pollutants Controlled:		
<input type="checkbox"/> CO <input checked="" type="checkbox"/> NO _x <input type="checkbox"/> VOC <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> SO ₂ <input type="checkbox"/> Other (specify):		
10. Description of the control device: Selective Catalytic Reduction (SCR)		
11. Proposed operating parameters (e.g., pressure drop, cfm, temperature, pH): Pre-catalyst exhaust temperature		
12. Emission unit(s) or process(es) venting emissions to the control device: RMR02 Gen-03		

Attach flow diagram(s) and manufacturer's specification sheet(s). Duplicate sheet as needed.



Environmental Resources Management

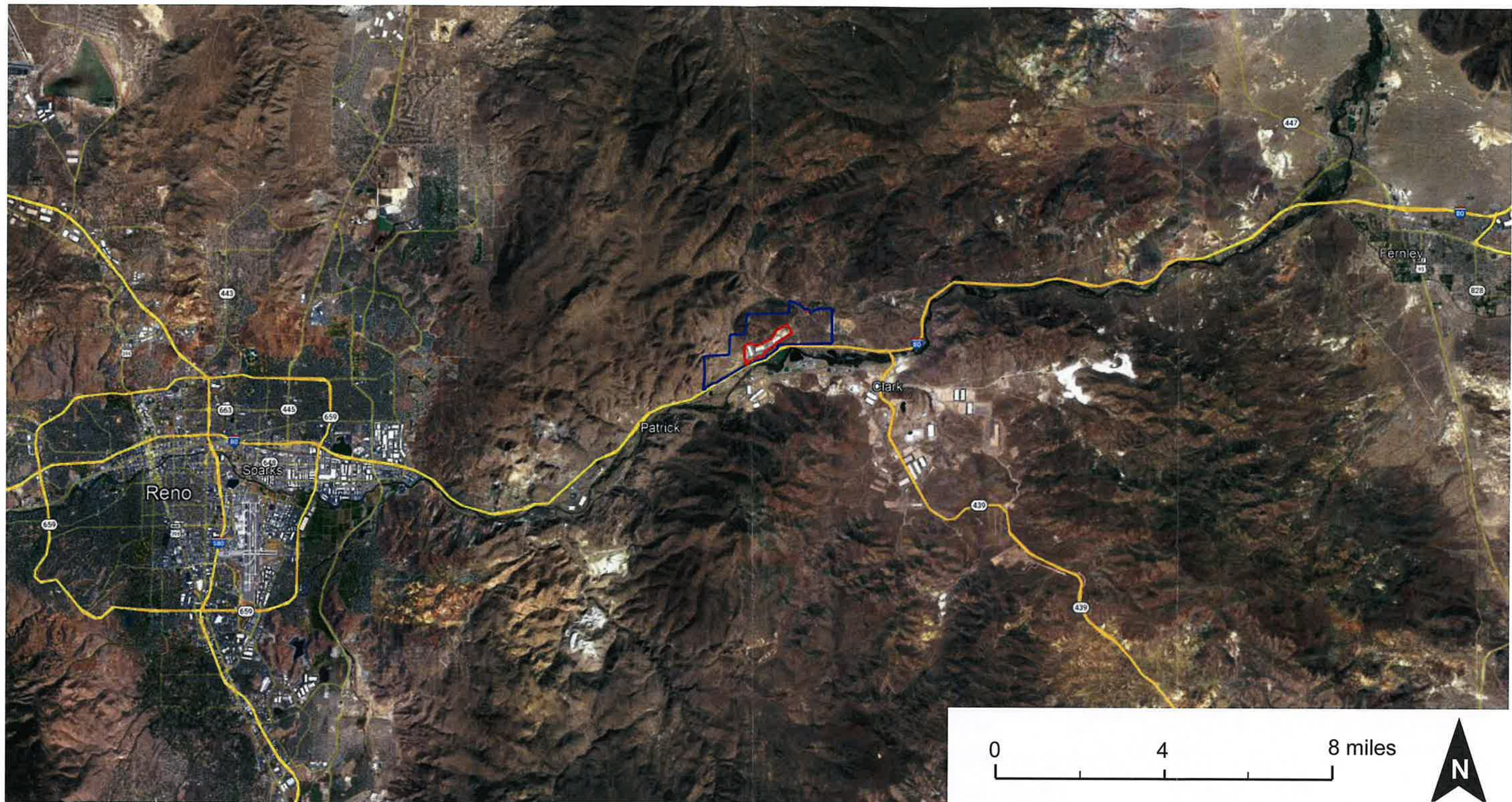
Process Flow Diagrams

Reno Facility
Apple Inc.
Washoe County, Nevada



ERM

DESIGN: Y.SHI	DRAWN: Y.SHI	CHKD: B.WILDEY
DATE: 09/03/2024	SCALE: n/a	REVISION: 1.0



- Facility Boundary
- Fenceline

Environmental Resources Management, Inc.

Apple Reno Vicinity Map

DESIGN: MT	CHKD.: YS	
DATE: 10/20/2022	SCALE:	REV.: 0
W.O.NO.:		



- Fenceline
- Existing Buildings
- Existing Emission Units

Environmental Resources Management, Inc.
Apple Reno Area Map

DESIGN: CH	CHKD.: MT	
DATE: 9/9/2024	SCALE:	REV.: 0
W.O.NO.:		



Table 1 Generator Specifications

Generator Information			Emission Units				
Manufacturer			MTU	Cummins	Caterpillar	Generac	Caterpillar
Model			16V4000 G43	2750DQLF	C175-20	SD250	C9
Engine Rating		(kWe)	2,000	2,750	4,000	250	300
Generator Group			RMR01	RMR02	RMR03, RMR04	Well 2, Well 3	Well 4
EPN			RMR01 Gen01 - 04	RMR02 Gen01 - 12	RMR03 EG14 – 25 RMR04 EG26 – 37	Well 2 Gen, Well 3 Gen	Well 4 Gen
Number of units			4	12	24	2	1
Control Technologies ^[1]			n/a	SCR, DPF, CatOx	SCR, DPF, CatOx	n/a	n/a
Uncontrolled Startup Time (min) @	25%		n/a	60	60	n/a	n/a
	50%		n/a	30	30	n/a	n/a
	75%		n/a	25	25	n/a	n/a
	100%		n/a	20	20	n/a	n/a
Power generation per unit @ 50% load ^[1]	(kWm)		1,140	1,514	2,105	-	-
	(hp)		1,529	2,030	2,823	-	-
Power generation per unit @ 100% load ^[1]	(kWm)		2,280	3,028	4,210	290	-
	(hp)		3,058	4,060	5,646	389	-
Derating ratio	100%		100%	84%	91%	-	-
	(kWm)		2,280	2,557	3,811	-	-
Power generation per unit @ 100% load (Derated to 5000 ft capacity)			(hp)	3,058	3,429	5,110	-
Projected actual operating hours per year (non-emergency) ^[3,4]			52	52	52	52	52
Projected Number of Startups per year (non-emergency) ^[3,4]			-	16	16	-	-
Projected actual uncontrolled hours per year (non-emergency) ^[3,4]			-	8.0	8.0	-	-
Projected actual controlled hours per year (non-emergency) ^[3,4]			-	44.0	44.0	-	-
Approximate Hour Distribution at 100% Operating Load							
Potential Max operating hours per year (emergency+non-emergency) ^[4,5]			249	249	249	249	249
Potential Maximum emergency hours per year @ 100% load ^[4,5]			149	149	149	149	149
Potential Maximum non-emergency hours per year @ 100% load ^[4,5]			100	100	100	100	100
Potential Maximum Number of Startups per year (emergency + non-emergency) ^[3]			-	135	135	-	-
Potential Maximum uncontrolled hours per year (emergency + non-emergency) ^[3,4]			-	45	45	-	-
Potential Maximum controlled hours per year (emergency+non-emergency) ^[3,4]			-	204	204	-	-
Approximate Hour Distribution at 75% Operating Load							
Potential Max operating hours per year (emergency+non-emergency) ^[4,5]			293	293	293	293	293
Potential Maximum emergency hours per year @ 75% load ^[4,5]			193	193	193	193	193
Potential Maximum non-emergency hours per year @ 75% load ^[4,5]			100	100	100	100	100
Potential Maximum Number of Startups per year (emergency + non-emergency) ^[3]			-	170	170	-	-
Potential Maximum uncontrolled hours per year (emergency + non-emergency) ^[3,4]			-	71	71	-	-
Potential Maximum controlled hours per year (emergency+non-emergency) ^[3,4]			-	222	222	-	-
Approximate Hour Distribution at 50% Operating Load							
Potential Max operating hours per year (emergency+non-emergency) ^[4,5]			462	462	462	462	462
Potential Maximum emergency hours per year @ 50% load ^[4,5]			362	362	362	362	362
Potential Maximum non-emergency hours per year @ 50% load ^[4,5]			100	100	100	100	100
Potential Maximum Number of Startups per year (emergency + non-emergency) ^[3]			-	306	306	-	-
Potential Maximum uncontrolled hours per year (emergency + non-emergency) ^[3,4]			-	153	153	-	-
Potential Maximum controlled hours per year (emergency+non-emergency) ^[3,4]			-	309	309	-	-
Approximate Hour Distribution at 25% Operating Load							
Potential Max operating hours per year (emergency+non-emergency) ^[4,5]			500	500	500	500	500
Potential Maximum emergency hours per year @ 25% load ^[4,5]			400	400	400	400	400
Potential Maximum non-emergency hours per year @ 25% load ^[4,5]			100	100	100	100	100
Potential Maximum Number of Startups per year (emergency + non-emergency) ^[3]			-	336	336	-	-
Potential Maximum uncontrolled hours per year (emergency + non-emergency) ^[3,4]			-	336	336	-	-
Potential Maximum controlled hours per year (emergency+non-emergency) ^[3,4]			-	164	164	-	-
Fuel type			Diesel	Diesel	Diesel	Diesel	Diesel
Fuel high heat value			(MMBtu/gal)	0.138	0.138	0.138	0.138

1. Based on manufacturer specifications.

2. Projected actual operating hours per year for RMR01 are based on an average of 52 hours per generator per year at 50% load. Wells 2 - 4 generators are assumed to be operating at 100% load, 52 hours per year.

3. Projected actual operating hours per year for RMR02, RMR03, and RMR04, generator groups are based on an average of 52 hours per generator per year at 50% load, each generator with anticipated 16 startups (12 short monthly run + 4 longer runs). For each startup, generator emissions would be uncontrolled for the first 30 minutes and then controlled for the remaining operation time. Uncontrolled hours = 30 minutes / 60 minutes x 16 startups = 8 hours (out of 52 hours). Controlled hours = 52 hrs - 8 hrs = 44 hrs.

4. Potential maximum annual operating hours per generator at 100% load are based on 149 hours per year of emergency runs and 100 hours of M&T runs at 100% load per generator (a total of 249 hours).

5. For RMR02, RMR03, and RMR04 generator groups that are equipped with control devices, the potential maximum annual operating hour of 249 hours includes 135 startups per year to account for 12 short maintenance runs, 4 longer runs, and 119 emergency runs. For each startup, generator emissions would be uncontrolled for the first 20 minutes and controlled for the remaining operation time at 100% load. Uncontrolled hours = 20 minutes / 60 minutes x 135 startups = 45 hours (out of 249 hours). Controlled hours = 249 hrs - 45 hrs = 204 hrs.

6. RMR02, RMR03, and RMR04 group generators reach minimum control temperatures in approximately 60, 30, 25 and 20 minutes during startup at 25%, 50%, 75% and 100% operating load, respectively.

Table 2 Generator Manufacturer Specifications⁽¹⁾⁻⁽⁴⁾

Operating Load	RMR01 Gen01 - 04		RMR02 Gen01 - 12		RMR03 EG14 - 25 RMR04 EG26 - 37		Well 2 Gen, Well 3 Gen	Well 4 Gen
	Power Output (hp)		Power Output (hp)		Power Output (hp)		Power Output (hp)	Power Output (kWe)
	Rated	Derated	Rated	Derated	Rated	Derated	Rated	Rated
25%	764	764	1015	857	1412	1278	-	-
50%	1529	1529	2030	1714	2823	2555	-	-
75%	2293	2293	3045	2572	4235	3833	-	-
100%	3058	3058	4060	3429	5646	5110	389	300
Operating Load	Fuel Consumption per Generator (gal/hr) ⁽¹⁾							
25%	44.5		59.6		95.5		5.5	8.7
50%	78.9		107.0		161.5		10.4	13.6
75%	112.6		145.5		201.9		14.8	17.6
100%	147.3		186.6		274.6		18.5	22.7

- Based on manufacturer specifications for MTU 16V4000 G43, Cummins 2750DQLF, and Caterpillar C175-20 for standby operation.
- Well 2 Gen and Well 3 Gen based on Senerac SD250 specification sheet. Only engine output of 389 hp at 100% is available. Well 4 Gen based on CAT C9 specification sheet, only generator rating of 300 kWe at 100% is available. These three generators are assumed to be operating at only 100% load.
- Fuel consumption at 25% load for RMR01 Gen01 - 04 based on engineering estimate.

Table 3 RMR01 Gen01 - 04 Emission Factors per Generator^{(1),(2)}

Pollutant	25% Load		50% Load		75% Load		100% Load	
	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr
VOC	0.37	0.62	0.18	0.59	0.13	0.64	0.10	0.67
NO _x	3.39	5.72	3.46	11.66	4.07	20.57	5.17	34.85
CO	1.40	2.37	0.67	2.27	0.62	3.13	0.60	4.02
PM	0.32	0.54	0.14	0.46	0.09	0.43	0.06	0.37
SO ₂	-	0.01	-	0.02	-	0.03	-	0.04

- Based on uncontrolled manufacturer specifications for MTU 16V4000 G43 for standby operation. Emission factors were converted from g/kW-hr to g/hp-hr and lb/hr by multiplying by the corresponding brake horsepower (BHP) and converting from kW to hp and grams to pounds.
- SO₂ emissions based on AP-42 Section 3.4 (10/96) emission rate of 8.09e-3 lb/hp-hr * Sulfur Content. Sulfur content of ultra-low sulfur diesel is 15 ppm.

Table 4a RMR02 Gen01 - 12 Uncontrolled Emission Factors per Generator^{(1),(2)}

Pollutant	25% Load		50% Load		75% Load		100% Load	
	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr
VOC	0.52	0.98	0.26	0.98	0.18	1.02	0.14	1.06
NO _x	3.60	6.80	3.40	12.85	4.40	24.95	6.40	48.38
CO	0.57	1.08	0.27	1.02	0.24	1.36	0.43	3.25
PM	0.11	0.21	0.05	0.19	0.05	0.28	0.04	0.30
SO ₂	-	0.01	-	0.02	-	0.03	-	0.04

- Based on manufacturer specifications for Cummins 2750DQLF for standby operation. Emission factors were converted from g/hp-hr to lb/hr by multiplying by the corresponding brake horsepower (BHP) and converting from grams to pounds.
- SO₂ emissions based on AP-42 Section 3.4 (10/96) emission rate of 8.09e-3 lb/hp-hr * Sulfur Content. Sulfur content of ultra-low sulfur diesel is 15 ppm.

Table 4b RMR02 Gen01 - 12 Controlled Emission Factors per Generator^{(1),(2)}

Pollutant	25% Load		50% Load		75% Load		100% Load	
	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr
VOC	0.130	0.25	0.065	0.25	0.036	0.20	0.020	0.15
NO _x	1.500	2.83	1.000	3.78	0.500	2.83	0.500	3.78
CO	0.100	0.19	0.065	0.25	0.060	0.34	0.100	0.76
PM	0.010	0.02	0.010	0.04	0.010	0.06	0.010	0.08
SO ₂	-	0.01	-	0.02	-	0.03	-	0.04

- Emission factors for VOC (assumed to be NMHC from spec), NO_x, CO and PM are based on control device vendor, Miratech, specifications for the combined SCR/catalytic oxidation/diesel particulate filter control system. Emission factors were converted from g/hp-hr to lb/hr by multiplying by the corresponding brake horsepower (BHP) and converting from grams to pounds.
- SO₂ emissions based on AP-42 Section 3.4 (10/96) emission rate of 8.09e-3 lb/hp-hr * Sulfur Content. Sulfur content of ultra-low sulfur diesel is 15 ppm.

Table 4c RMR02 Gen01 - 12 Control Efficiencies⁽¹⁾

Pollutant	25% Load	50% Load	75% Load	100% Load
VOC	75%	75%	80%	86%
NO _x	58%	71%	89%	92%
CO	82%	76%	75%	77%
PM	91%	80%	80%	75%

- Control efficiencies are calculated by dividing the difference of the uncontrolled emission factors and the controlled emission factors by the uncontrolled emission factors.

Table 5a RMR03 EG14 – 25 and RMR04 EG26 – 37 Uncontrolled Emission Factors per Generator^{(1),(2)}

Pollutant	25% Load		50% Load		75% Load		100% Load	
	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr
VOC	0.58	1.63	0.22	1.24	0.08	0.68	0.06	0.68
NO _x	3.08	8.68	3.48	19.60	7.18	60.67	6.81	76.72
CO	1.66	4.68	3.25	18.31	1.02	8.62	0.65	7.32
PM	0.11	0.31	0.06	0.34	0.06	0.51	0.06	0.68
SO ₂	-	0.02	-	0.03	-	0.05	-	0.06

1. Based on Caterpillar C175-20 engine performance data. Emission factors were converted from g/hp-hr to lb/hr by multiplying by the corresponding brake horsepower (BHP) and converting from grams to pounds.
2. SO₂ emissions based on AP-42 Section 3.4 (10/96) emission rate of 8.09e-3 lb/hp-hr * Sulfur Content. Sulfur content of ultra-low sulfur diesel is 15 ppm.

Table 5b RMR03 EG14 – 25 and RMR04 EG26 – 37 Controlled Emission Factors per Generator^{(1),(2)}

Pollutant	25% Load		50% Load		75% Load		100% Load	
	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr	(g/hp-hr)	lb/hr
VOC	0.120	0.34	0.040	0.23	0.014	0.12	0.010	0.11
NO _x	1.540	4.34	1.000	5.63	0.500	4.23	0.497	5.60
CO	0.330	0.93	0.650	3.66	0.200	1.69	0.127	1.43
PM	0.017	0.05	0.010	0.06	0.010	0.08	0.010	0.11
SO ₂	-	0.02	-	0.03	-	0.05	-	0.06

1. Emission factors for VOC, NO_x, CO and PM are based on control device vendor, Miratech, specifications for the combined SCR/catalytic oxidation/diesel particulate filter control system. Emission factors were converted from g/hp-hr to lb/hr by multiplying by the corresponding brake horsepower (BHP) and converting from grams to pounds.
2. SO₂ emissions based on AP-42 Section 3.4 (10/96) emission rate of 8.09e-3 lb/hp-hr * Sulfur Content. Sulfur content of ultra-low sulfur diesel is 15 ppm.

Table 5c RMR03 EG01 - 12 and RMR04 EG01 - 12 Control Efficiencies⁽¹⁾

Pollutant	25% Load	50% Load	75% Load	100% Load
VOC	79%	82%	83%	83%
NO _x	50%	71%	93%	93%
CO	80%	80%	80%	80%
PM	85%	83%	83%	83%

1. Control efficiencies are calculated by dividing the difference of the uncontrolled emission factors and the controlled emission factors by the uncontrolled emission factors.

Table 6 Generac SD250 Well 2 Gen and Well 3 Gen Emission Factors per Generator⁽¹⁾

Pollutant	Emission Factor	100% Load
	(lb/MMBtu)	lb/hr
VOC	0.36	0.92
NO _x	4.41	11.26
CO	0.95	2.43
PM	0.31	0.79
SO ₂	0.29	0.74

1. Emission factor (lb/MMBtu) based on AP42 3.3 Table 3.3-1. Conservatively assumes that PM₁₀=PM_{2.5}=PM. Well 2 Gen and Well 3 Gen are assumed to be operating at only 100% load.

Table 7 Caterpillar C9 Well 4 Gen Emission Factors⁽¹⁾

Pollutant	Emission Factor	100% Load
	(lb/MMBtu)	lb/hr
VOC	0.36	1.13
NO _x	4.41	13.81
CO	0.95	2.98
PM	0.31	0.97
SO ₂	0.29	0.91

1. Emission factor (lb/MMBtu) based on AP42 3.3 Table 3.3-1. Conservatively assumes that PM₁₀=PM_{2.5}=PM. Well 4 Gen is assumed to be operating at only 100% load.

Table 8 Criteria Pollutant Projected Actual Emissions¹⁻¹¹

Calculation of Projected Actual Emissions

Pollutant	RMRO1 Gen01 - 04		RMRO2 Gen01 - 12			RMRO3 EG14 - 25, RMRO4 EG26 - 37			Well 2 Gen, Well 3 Gen		Well 4 Gen		Site-wide Projected Actual Emissions
	Emission Factors per Generator	Emissions per Group	Emission Factors per Generator		Emissions per Group	Emission Factors per Generator		Emissions per Group	Emission Factors per Generator	Emissions per Group	Emission Factors per Generator	Emissions per Group	
	(lb/hr)	(tpy)	Uncontrolled (lb/hr)	Controlled (lb/hr)	(tpy)	Uncontrolled (lb/hr)	Controlled (lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	
NO _x	11.66	1.11	12.85	3.78	1.61	19.60	5.63	4.86	11.38	0.59	13.81	0.36	8.63
SO ₂	0.02	0.002	0.02	0.02	0.03	0.03	0.03	0.02	0.74	0.04	0.91	0.02	0.09
CO	2.27	0.24	1.02	0.25	0.11	18.11	3.66	3.69	2.43	0.13	2.38	0.06	4.24
VOC	0.59	0.06	0.58	0.25	0.11	1.24	0.23	0.24	0.92	0.05	1.13	0.01	0.56
PM	0.46	0.05	0.04	0.04	0.01	0.06	0.06	0.04	0.79	0.04	0.97	0.03	0.16
PM ₁₀	0.46	0.05	0.04	0.04	0.01	0.06	0.06	0.04	0.79	0.04	0.97	0.03	0.16
PM _{2.5}	0.46	0.05	0.04	0.04	0.01	0.06	0.06	0.04	0.79	0.04	0.97	0.03	0.16
CO ₂ e	N/A	38.12	N/A	N/A	155.09	N/A	N/A	468.16	N/A	4.47	N/A	2.74	668.57
CH ₄	365.28	37.99	495.37	495.37	154.56	747.69	747.69	466.56	85.65	4.45	105.09	2.73	666.29
CH ₄	1.48E-02	1.54E-03	2.01E-02	0.01	0.01	3.03E-02	3.03E-02	1.89E-02	3.47E-03	1.81E-04	4.36E-03	1.11E-04	0.03
N ₂ O	2.96E-03	3.08E-04	4.02E-03	4.02E-03	0.00	6.07E-03	6.07E-03	3.78E-03	6.95E-04	3.61E-05	8.53E-04	2.22E-05	5.41E-03

- Projected actual emissions are based on 32 hours per year per generator for non-emergency use at 50% standby load for Group RMRO1 - RMRO4 generators, and 100% load for the Well 2 Gen - Well 4 Gen generators. For RMRO2, RMRO3, and RMRO4 group generators that are equipped with control devices, please see Table 1 and its footnotes for details on anticipated operating scenarios.
- Emission factors shown are per generator. Emissions shown are per generator grouping.
- Conservatively assumes PM₁₀ = PM_{2.5} = PM₁.
- CO₂e calculated based on the global warming potentials set for in Table A-1 of 40 CFR 98.25 for CH₄ and 298 for N₂O.
- 40 CFR 98, Table C-1 Default CO₂ Emission Factors and High Heat Values for Various Types of Fuel, for Distillate Fuel Oil No. 2
- 40 CFR 98, Table C-2: Default CH₄ and N₂O Emission Factors for Various Types of Fuel, for Petroleum Products.
- PM emission factors are based on controlled factors for both uncontrolled and controlled scenarios because the filter's control efficiency does not depend on engine temperature and does not require a warm-up period to effectively control emissions.
- Site-wide VOC emissions includes emissions from diesel and gasoline storage tanks shown in Table 10 below.

Table 9 Hazardous Air Pollutant Projected Actual Emissions¹⁻³

Pollutant	Emission Factor		Projected Actual Emissions per Group					Site-wide Projected Actual Emissions
	>600 HP Engines lb/Hr/HCU ¹	<500 HP Engines lb/Hr/HCU ²	RMRO1 Gen01 - 04	RMRO2 Gen01 - 12	RMRO3 EG14 - 25 RMRO4 EG26 - 37	Well 2 Gen, Well 3 Gen	Well 4 Gen	
			tpy	tpy	tpy	tpy	tpy	tpy
Benzene	7.76E-04	9.33E-04	8.79E-04	1.31E-03	3.32E-03	1.24E-04	7.60E-05	5.71E-03
Toluene	2.81E-04	4.09E-04	3.18E-04	4.73E-04	1.30E-03	5.43E-05	3.33E-05	2.08E-03
Xylenes	1.93E-04	2.85E-04	2.19E-04	3.25E-04	8.26E-04	3.78E-05	2.32E-05	1.43E-03
1,3-Butadiene	N/A	3.91E-05	N/A	N/A	N/A	5.19E-06	3.18E-06	8.38E-06
Formaldehyde	7.89E-05	1.18E-03	8.93E-05	1.33E-04	3.38E-04	1.57E-04	9.61E-05	8.13E-04
Acetaldehyde	2.52E-05	7.67E-04	2.85E-05	4.24E-05	1.08E-04	1.02E-04	6.25E-05	3.43E-04
Acrolein	7.88E-06	9.25E-05	8.92E-06	1.33E-05	3.37E-05	1.23E-05	7.59E-06	7.57E-05
Naphthalene	1.30E-04	8.48E-05	1.47E-04	2.19E-04	5.56E-04	1.13E-05	6.91E-06	9.40E-04
Maximum Single HAP			8.79E-04	1.31E-03	3.32E-03	1.57E-04	9.61E-05	5.71E-03
Total HAP			1.69E-03	2.51E-03	8.38E-03	5.03E-04	3.09E-04	1.14E-02

- Projected actual emissions are based on 32 hours per year per generator for non-emergency use at 50% standby load for Group RMRO1 - RMRO4 generators, and 100% load for the Well 2 Gen - Well 4 Gen generators. For Group RMRO2 generators that are equipped with catalytic oxidation controls, a 75% control efficiency (derived based on vendor specifications) is applied to each HAP for periods of controlled operation. Please see Table 1 and its footnotes for details on anticipated operating scenarios.
- US EPA AP-42, Section 3.4: Large Stationary Diesel And All Stationary Dual-Fuel Engines, Table 3-4-3 and Table 3-4-4.
- US EPA AP-42, Section 3.4: Gasoline And Diesel Industrial Engines, Table 3-4-3 and Table 3-4-4.

Table 10 Projected Actual Tank Emissions^{1-4,6}

Tank	Tank Capacity ¹ (gal/tank)	Number of Tanks	Projected Annual Throughput ² (gal/yr/tank)	Working Losses ³ (lb/yr/tank)	Breathing Losses ³ (lb/yr/tank)	Total VOC Emissions (lb/yr)	Total VOC Emissions (ton/yr)	All Tanks Projected Actual VOC Emissions (ton/yr)
RMRO1	4,000	4	4,103	0.0783	0.6546	2.93	1.47E-03	7.46E-02
RMRO2	5,000	12	5,564	0.1530	1.1623	15.78	7.89E-03	
RMRO3, RMRO4	6,700	24	8,398	0.1603	1.0856	29.90	1.50E-02	
DT-01	250	1	1,250	0.0344	0.0682	0.10	5.13E-05	
GT-01	250	1	1,250	11.0127	88.8446	99.86	4.99E-02	
Well 2 & Well 3	600	2	962	0.0264	0.1446	0.34	1.71E-04	
Well 4	660	1	1,180	0.0324	0.1638	0.20	9.81E-05	

- Capacities of tanks associated with generators from Groups RMRO1 - RMRO4 and Well 2 - 4 are based on facility SPCC dated January 2023. DT-01 contains gasoline and GT-01 contains diesel and are located together in a dual fuel tank.
- Projected annual throughputs are based on 52 hours per year per generator for non-emergency use, fuel consumption rates at 50% load for the Group RMRO1 - RMRO4 generators, fuel consumption rates at 100% load for the Well 2 - Well 4 generators, and an estimated annual throughput of 1,250 gallons per year per tank for DT-01 and GT-01.
- VOC emissions due to working losses and breathing losses are estimated using Emission Master Tanks 8.4.5.26 Version Date 9/12/2024. See Appendix C.2 for Emission Master Tanks Results.

Calculation of Estimated Maximum Emissions

Table 11 Criteria Pollutant Estimated Maximum Emissions⁽¹⁻⁴⁾

Pollutant	RM01 Gen01 - 04		RM02 Gen01 - 12			RM03 EG14 - 25, RM04 EG26 - 37			Well 2 Gen, Well 3 Gen		Well 4 Gen		Post-project Site-wide Estimated Maximum Emissions	Site-wide Limited Potential to Emit
	Emission Factors per Generator	Emissions per Group	Emission Factors per Generator		Emissions per Group	Emission Factors per Generator		Emissions per Group	Emission Factors per Generator	Emissions per Group	Emission Factors per Generator	Emissions per Group		
	(lb/hr)	(tpy)	Uncontrolled (lb/hr)	Controlled (lb/hr)	(tpy)	Uncontrolled (lb/hr)	Controlled (lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(tpy)	(tpy)
NO _x	34.85	17.35	48.38	3.78	33.01	76.72	5.63	62.95	11.26	5.63	13.81	3.45	94.80	95
SO ₂	0.04	0.02	0.04	0.04	0.06	0.06	0.06	0.19	0.74	0.37	0.91	0.23	0.80	95
CO	4.02	2.37	3.25	0.76	4.72	18.31	3.66	47.15	2.43	1.21	2.98	0.74	52.45	95
VOC	0.67	0.62	1.06	0.25	4.45	1.63	0.34	7.25	0.92	0.46	1.13	0.28	13.16	95
PM	0.54	0.54	0.08	0.08	0.11	0.11	0.11	0.34	0.79	0.40	0.97	0.24	1.58	70
PM ₁₀	0.54	0.54	0.08	0.08	0.11	0.11	0.11	0.34	0.79	0.40	0.97	0.24	1.58	70
PM _{2.5}	0.54	0.54	0.08	0.08	0.11	0.11	0.11	0.34	0.79	0.40	0.97	0.24	1.58	70
CO _{2e}	N/A	340.77	N/A	0.00	1,377.88	N/A	N/A	4,159.39	N/A	22.32	N/A	14.59	5,912.86	-
CO ₂	681.94	339.61	863.89	1,373.17	1,271.30	1,271.30	1,271.30	4,145.17	85.65	22.24	105.09	14.54	5,892.64	-
CH ₄	2.77E-02	1.38E-02	3.50E-02	3.50E-02	5.57E-02	5.16E-02	5.16E-02	1.68E-01	3.47E-03	9.02E-04	4.26E-03	5.90E-04	2.39E-01	-
N ₂ O	5.53E-03	2.76E-03	7.01E-03	7.01E-03	1.11E-02	1.03E-02	1.03E-02	3.36E-02	6.95E-04	1.80E-04	8.53E-04	1.18E-04	4.76E-02	-

- Estimated maximum emissions are based on variable controlled and uncontrolled operating hours across all operating loads while limiting facility-wide emissions to less than 95 tpy (see Table 11).
- Emission factors shown are per generator and represent the maximum hourly emission rate. Emissions shown are per generator grouping and may not be based on the maximum emission factor.
- Conservatively assumes PM₁₀ = PM_{2.5} = PM.
- CO_{2e} calculated based on the global warming potentials set for in Table A-1 of 40 CFR 98.25 for CH₄ and 298 for N₂O.
- 40 CFR 98, Table C-1: Default CO₂ Emission Factors and High Heat Values for Various Types of Fuel, for Distillate Fuel Oil No. 2.
- 40 CFR 98, Table C-2: Default CH₄ and N₂O Emission Factors for Various Types of Fuel, for Petroleum Products.
- PM emission factors are based on controlled factors for both uncontrolled and controlled scenarios because the filter's control efficiency does not depend on engine temperature and does not require a warm-up period to effectively control emissions.
- Site-wide VOC potential maximum emissions includes emissions from diesel and gasoline storage tanks shown in Table 13 below.

Table 12 Hazardous Air Pollutant Estimated Maximum Emissions⁽¹⁻⁴⁾

Pollutant	Emission Factor		Estimated Maximum Emissions per Group					Site-wide Estimated Maximum Emissions	Site-wide Limited Potential to Emit
	>500 HP Engines (lb/MMBtu) ⁽¹⁾	<500 HP Engines (lb/MMBtu) ⁽²⁾	RM01 Gen01 - 04	RM02 Gen01 - 12	RM03 EG14 - 25, RM04 EG26 - 37	Well 2 Gen, Well 3 Gen	Well 4 Gen		
			tpy	tpy	tpy	tpy	tpy	tpy	(tpy)
Benzene	7.76E-04	9.33E-04	7.86E-03	1.58E-02	4.54E-02	6.19E-04	4.04E-04	7.01E-02	9
Toluene	2.81E-04	4.09E-04	2.84E-03	5.73E-03	1.64E-02	2.71E-04	1.77E-04	2.55E-02	9
Xylenes	1.93E-04	2.85E-04	1.95E-03	3.93E-03	1.13E-02	1.89E-04	1.24E-04	1.75E-02	9
1,3-Butadiene	N/A	3.91E-05	N/A	N/A	N/A	2.59E-05	1.70E-05	4.29E-05	9
Formaldehyde	7.89E-05	1.18E-03	7.99E-04	1.61E-03	4.62E-03	7.82E-04	5.12E-04	8.32E-03	9
Acetaldehyde	2.52E-05	7.67E-04	2.55E-04	5.14E-04	1.47E-03	5.09E-04	3.33E-04	3.08E-03	9
Acrolein	7.89E-06	9.25E-05	7.98E-05	1.61E-04	4.61E-04	6.13E-05	4.01E-05	8.03E-04	9
Naphthalene	1.30E-04	8.48E-05	1.32E-03	2.65E-03	7.61E-03	5.62E-05	3.68E-05	1.17E-02	9
Maximum Single HAP			7.86E-03	1.58E-02	4.54E-02	7.82E-04	5.12E-04	7.01E-02	9
Total HAP			1.51E-02	3.06E-02	8.79E-02	2.51E-03	1.64E-03	1.37E-01	23

- Estimated maximum emissions are based on the maximum PTE between each load case. For Group RM03 - RM04 generators that are equipped with catalytic oxidation controls, a control efficiency (derived based on vendor specifications) is applied to each HAP for periods of controlled operation. Please see Table 1 and its footnotes for details on anticipated operating scenarios.
- US EPA AP-42, Section 3.4: Large Stationary Diesel and All Stationary Dual-Fuel Engines, Table 3.4-3 and Table 3.4-4.
- US EPA AP-42, Section 3.3: Gasoline And Diesel Industrial Engines, Table 3.3-2.

Table 13 Estimated Maximum Tank Emissions⁽¹⁻⁴⁾

Task	Tank Capacity ⁽¹⁾ (gal/tank)	Number of Tanks	Maximum Annual Throughput ⁽²⁾ (gal/yr/tank)	Working Losses ⁽³⁾ (lb/yr/tank)	Breathing Losses ⁽³⁾ (lb/yr/tank)	Total VOC Emissions (lb/yr)	Total VOC Emissions (ton/yr)	All Tanks Estimated Maximum VOC Emissions (ton/yr)
RM01	4,000	4	36,678	0.7001	0.6346	5.42	2.71E-03	9.64E-02
RM02	5,000	12	46,463	1.2773	1.1623	29.28	1.46E-02	
RM03, RM04	6,700	24	68,375	1.3050	1.0856	57.37	2.87E-02	
DT-01	250	1	1,250	0.0344	0.0682	0.10	5.13E-05	
GT-01	250	1	1,250	11.0127	88.6446	99.85	4.99E-02	
Well 2 & Well 3	600	2	4,607	0.1265	0.1446	0.54	2.73E-04	
Well 4	650	1	5,652	0.1554	0.1638	0.32	1.60E-04	

- Capacity of tanks associated with generators from Groups RM01 - RM04 and Well 2 - 4 are based on facility SPCC dated January 2023. GT-01 contains diesel and GT-01 contains gasoline and are located together in a dual fuel tank.
- Maximum annual throughputs are based on 149 hours per year of emergency runs and 100 hours of maintenance and testing runs (a total of 249 hours) per generator, and fuel consumption rates at 100% load for RM01 - RM04 group generators and Well 2 - Well 4 generators. Maximum annual throughputs for DT-01 and GT-01 are estimated to be 1,250 gallons per year per tank.
- VOC emissions due to working losses and breathing losses are estimated using Emission Master Tanks 8.4.5.26 Version Date 9/12/2024. See Appendix C.2 for Emission Master Tanks Results.

Table 14 Criteria Pollutant Pre-Project and Post-Project Estimated Maximum Emissions and Limited Potential to Emit⁽¹⁾

Pollutant	Pre-project Site-wide Estimated Maximum Emissions	Post-project Site-wide Estimated Maximum Emissions	Pre-project Site-wide Limited Potential to Emit	Post-project Site-wide Limited Potential to Emit	Change in Limited Potential to Emit
	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
NO _x	94.93	94.81	95	95	0
SO ₂	0.39	0.80	95	95	0
CO	9.47	52.45	95	95	0
VOC	2.10	13.16	95	95	0
PM	0.90	1.58	70	70	0
PM ₁₀	0.90	1.58	70	70	0
PM _{2.5}	0.90	1.58	70	70	0
CO _{2e}	3,782.15	5,912.86	-	-	-
Maximum Single HAP (Benzene)	4.61E-03	7.01E-02	9	9	0
Total HAP	9.01E-02	1.37E-01	23	23	0

- Estimated maximum emissions are based on variable controlled and uncontrolled operating hours across all operating loads while limiting facility-wide emissions to less than 95 tpy (see Table 11).

APPENDIX C.2 EMISSION MASTER TANKS
PROJECTED ACTUAL EMISSIONS RESULTS

Title Page

Product:

Process:

Process Cycle Time: 1096 days

Final Product Amount: 22707 gal

Evaluation Date: 11/4/2022

File Name: C:\Users\Yvonne.Shi\Documents\ERM\Apple Global Data Center Services EHS -

Documents\Reno\Projects\RMR02 Emissions Control Retrofit\Air Permit Mod Application\Reference\Tank Projected
Actual 10-17-2024.emm

Connected Database: \\azusevmlic01\EMTanks\Emaster

Calculation type: MACT98

Condenser Calc. type: Single Stage

Charge Calc. type: Initial Composition

Material Balance: Subtract Emissions

Last Saved User: Yvonne.Shi

Last Saved Time: 4:06:31 PM, 10/17/2024

Comment:

Defined Activities

- 1) [Storage] Reno 4000 Gal
- 2) [Storage] Reno 5000 Gal
- 3) [Storage] Reno 6700 Gal
- 4) [Storage] Reno 250 Gal
- 5) [Storage] Reno 250 Gal Gasoline
- 6) [Storage] Reno 600 Gal
- 7) [Storage] Reno 660 Gal

1: Storage Tank Activity

Title: Reno 4000 Gal

Start Date: 1/1/2022

End Date: 12/31/2022

Elapsed Time: 365.0 days

Vent ID:

Noncondensable: Air @ 0 Nm³/h

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 4103 gal

Crude Oil Factor-Kc: 1

Vessel Name: Reno 4000 Gal

Void Vol.: 4,079.71 gal

Work Vol.: 4,000 gal

No Control Devices

Final Contents	4000.0 gal	28441.1235 lb	2.16 °C			
	Weight	Pure-Vp	W[i]	X[i]	A[i]	X*Vp*A
[Liquid Phase]	(lb)	(mmHg)				(mmHg)
Diesel Fuel No. 2	28441.1235	0.1455	1.0	1.0	1	0.1455

Emissions From Vessel: Reno 4000 Gal

	Effective Vp	Working	Breathing	Total	Rate
[Non Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Air	647.4693	36.0267	274.8111	310.8378	0.0355
[Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Diesel Fuel No. 2	0.3402	0.0783	0.6546	0.7329	8.36698e-5

2: Storage Tank Activity

Title: Reno 5000 Gal

Start Date: 1/1/2022

End Date: 12/31/2022

Elapsed Time: 365.0 days

Vent ID:

Noncondensable: Air @ 0 Nm³/h

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 5564 gal

Crude Oil Factor-Kc: 1

Vessel Name: Reno 5000 Gal

Void Vol.: 5,005.73 gal

Work Vol.: 5,000 gal

No Control Devices

Final Contents	5000 gal	35509.6773 lb	2.16 °C			
	Weight	Pure-Vp	W[i]	X[i]	A[i]	X*Vp*A
[Liquid Phase]	(lb)	(mmHg)				(mmHg)
Distillate Fuel Oil No. 2	35509.6773	0.1358	1.0	1.0	1	0.1358

Emissions From Vessel: Reno 5000 Gal

	Effective Vp	Working	Breathing	Total	Rate
[Non Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Air	647.4697	48.8552	337.2715	386.1266	0.0441
[Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Distillate Fuel Oil No. 2	0.3399	0.153	1.1623	1.3153	2.0e-4

3: Storage Tank Activity

Title: Reno 6700 Gal

Start Date: 1/1/2022

End Date: 12/31/2022

Elapsed Time: 365.0 days

Vent ID:

Noncondensable: Air @ 0 Nm³/h

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 8398 gal

Crude Oil Factor-Kc: 1

Vessel Name: 6700 gal

Void Vol.: 6,768.21 gal

Work Vol.: 6,700 gal

No Control Devices

Final Contents	6700.0 gal	47638.8818 lb	2.16 °C			
	Weight	Pure-Vp	W[i]	X[i]	A[i]	X*Vp*A
[Liquid Phase]	(lb)	(mmHg)				(mmHg)
Diesel Fuel No. 2	47638.8818	0.1455	1.0	1.0	1	0.1455

Emissions From Vessel: 6700 gal

	Effective Vp	Working	Breathing	Total	Rate
[Non Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Air	647.4701	73.7392	455.9211	529.6603	0.0605
[Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Diesel Fuel No. 2	0.3394	0.1603	1.0856	1.2459	1.0e-4

4: Storage Tank Activity

Title: Reno 250 Gal

Start Date: 1/1/2022

End Date: 12/31/2022

Elapsed Time: 365.0 days

Vent ID:

Noncondensable: Air @ 0 Nm³/h

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 1250 gal

Crude Oil Factor-Kc: 1

Vessel Name: Reno 250 Gal

Void Vol.: 293.76 gal

Work Vol.: 250 gal

No Control Devices

Final Contents	250 gal	1775.4839 lb	2.16 °C				
	Weight	Pure-Vp	W[i]	X[i]	A[i]	X*Vp*A	
[Liquid Phase]	(lb)	(mmHg)				(mmHg)	
Distillate Fuel Oil No. 2	1775.4839	0.1358	1.0	1.0	1	0.1358	

Emissions From Vessel: Reno 250 Gal

	Effective Vp	Working	Breathing	Total	Rate	
[Non Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)	
Air	647.4769	10.9757	19.79	30.7658	0.0035	
[Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)	
Distillate Fuel Oil No. 2	0.3327	0.0344	0.0682	0.1026	1.17098e-5	

5: Storage Tank Activity

Title: Reno 250 Gal Gasoline

Start Date: 1/1/2022

End Date: 12/31/2022

Elapsed Time: 365.0 days

Vent ID:

Noncondensable: Air @ 0 Nm³/h

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 1250 gal

Crude Oil Factor-Kc: 1

Vessel Name: Reno 250 Gal

Void Vol.: 293.76 gal

Work Vol.: 250 gal

No Control Devices

Final Contents	250 gal	1402.0272 lb	2.16 °C			
	Weight	Pure-Vp	W[i]	X[i]	A[i]	X*Vp*A
[Liquid Phase]	(lb)	(mmHg)				(mmHg)
Gasoline (RVP 11.5)	1402.0272	193.7025	1.0	1.0	1	193.7025

Emissions From Vessel: Reno 250 Gal

	Effective Vp	Working	Breathing	Total	Rate
[Non Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Air	387.0909	6.0067	60.8425	66.8492	0.0076
[Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Gasoline (RVP 11.5)	260.7187	11.0127	88.8446	99.8573	0.0114

6: Storage Tank Activity

Title: Reno 600 Gal

Start Date: 1/1/2024

End Date: 12/31/2024

Elapsed Time: 366.0 days

Vent ID:

Noncondensable: Air @ 0 scfh

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 962 gal

Crude Oil Factor-Kc: 1

Vessel Name: Reno 600 Gal

Void Vol.: 621.83 gal

Work Vol.: 300 gal

No Control Devices

Final Contents	600 gal	4261.1613 lb	2.16 °C				
	Weight	Pure-Vp	W[i]	X[i]	A[i]	X*Vp*A	
[Liquid Phase]	(lb)	(mmHg)				(mmHg)	
Distillate Fuel Oil No. 2	4261.1613	0.1358	1.0	1.0	1	0.1358	

Emissions From Vessel: Reno 600 Gal

	Effective Vp	Working	Breathing	Total	Rate
[Non Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Air	647.4713	8.4476	41.9884	50.436	0.0057
[Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Distillate Fuel Oil No. 2	0.3383	0.0264	0.1446	0.171	1.94669e-5

7: Storage Tank Activity

Title: Reno 660 Gal

Start Date: 1/1/2022

End Date: 12/31/2022

Elapsed Time: 365.0 days

Vent ID:

Noncondensable: Air @ 0 Nm³/h

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 1180 gal

Crude Oil Factor-Kc: 1

Vessel Name: Reno 660 Gal

Void Vol.: 705.02 gal

Work Vol.: 660 gal

No Control Devices

Final Contents	660.0 gal	4687.2774 lb	2.16 °C			
	Weight	Pure-Vp	W[i]	X[i]	A[i]	X*Vp*A
[Liquid Phase]	(lb)	(mmHg)				(mmHg)
Distillate Fuel Oil No. 2	4687.2774	0.1358	1.0	1.0	1	0.1358

Emissions From Vessel: Reno 660 Gal

	Effective Vp	Working	Breathing	Total	Rate
[Non Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Air	647.4712	10.3611	47.5009	57.862	0.0066
[Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Distillate Fuel Oil No. 2	0.3383	0.0324	0.1638	0.1962	2.23969e-5

Summary Page

Emissions for (Unspecified Vent):

	CAS	Avg. Rate	Max. Rate	Total Weight
Air	132259-10-0	0.0545 lb/hr	0.0605 lb/hr	1432.5376 lb
Diesel Fuel No. 2	-	7.52293e-5 lb/hr	1.0e-4 lb/hr	1.9788 lb
Distillate Fuel Oil No. 2	64742-47-8	6.78631e-5 lb/hr	2.0e-4 lb/hr	1.7851 lb
Gasoline (RVP 11.5)	-	0.0038 lb/hr	0.0114 lb/hr	99.8573 lb

Total emissions for all vents:

	CAS	Avg. Rate	Max. Rate	Total Weight
Air	132259-10-0	0.0545 lb/hr	0.0605 lb/hr	1432.5376 lb
Diesel Fuel No. 2	-	7.52293e-5 lb/hr	1.0e-4 lb/hr	1.9788 lb
Distillate Fuel Oil No. 2	64742-47-8	6.78631e-5 lb/hr	2.0e-4 lb/hr	1.7851 lb
Gasoline (RVP 11.5)	-	0.0038 lb/hr	0.0114 lb/hr	99.8573 lb

**APPENDIX C.3 EMISSION MASTER TANKS
ESTIMATED MAXIMUM EMISSIONS RESULTS**

Title Page

Product:

Process:

Process Cycle Time: 1096 days

Final Product Amount: 164275 gal

Evaluation Date: 11/4/2022

File Name: C:\Users\Yvonne.Shi\Documents\ERM\Apple Global Data Center Services EHS -
Documents\Reno\Projects\RMR02 Emissions Control Retrofit\Air Permit Mod Application\Reference\Tank PTE
10-17-2024.emm

Connected Database: \\azusevmlic01\EMTanks\Emaster

Calculation type: MACT98

Condenser Calc. type: Single Stage

Charge Calc. type: Initial Composition

Material Balance: Subtract Emissions

Last Saved User: Yvonne.Shi

Last Saved Time: 4:20:12 PM, 10/17/2024

Comment:

Defined Activities

- 1) [Storage] Reno 4000 Gal
- 2) [Storage] Reno 5000 Gal
- 3) [Storage] Reno 6700 Gal
- 4) [Storage] Reno 250 Gal
- 5) [Storage] Reno 250 Gal Gasoline
- 6) [Storage] Reno 600 Gal
- 7) [Storage] Reno 660 Gal

1: Storage Tank Activity

Title: Reno 4000 Gal

Start Date: 1/1/2022

End Date: 12/31/2022

Elapsed Time: 365.0 days

Vent ID:

Noncondensable: Air @ 0 Nm³/h

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 36678.0 gal

Crude Oil Factor-Kc: 1

Vessel Name: Reno 4000 Gal

Void Vol.: 4,079.71 gal

Work Vol.: 4,000 gal

No Control Devices

Final Contents	4000 gal	28441.1235 lb	2.16 °C			
	Weight	Pure-Vp	W[i]	X[i]	A[i]	X*Vp*A
[Liquid Phase]	(lb)	(mmHg)				(mmHg)
Diesel Fuel No. 2	28441.1235	0.1455	1.0	1.0	1	0.1455

Emissions From Vessel: Reno 4000 Gal

	Effective Vp	Working	Breathing	Total	Rate
[Non Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Air	647.482	322.0536	274.8111	596.8647	0.0681
[Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Diesel Fuel No. 2	0.3275	0.7001	0.6546	1.3547	2.0e-4

2: Storage Tank Activity

Title: Reno 5000 Gal

Start Date: 1/1/2022

End Date: 12/31/2022

Elapsed Time: 365.0 days

Vent ID:

Noncondensable: Air @ 0 Nm³/h

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 46463 gal

Crude Oil Factor-Kc: 1

Vessel Name: Reno 5000 Gal

Void Vol.: 5,005.73 gal Work Vol.: 5,000 gal

No Control Devices

Final Contents	5000 gal	35509.6773 lb	2.16 °C				
[Liquid Phase]	Weight (lb)	Pure-Vp (mmHg)	W[i]	X[i]	A[i]	X*Vp*A (mmHg)	
Distillate Fuel Oil No. 2	35509.6773	0.1358	1.0	1.0	1	0.1358	

Emissions From Vessel: Reno 5000 Gal

	Effective Vp (mm Hg)	Working (lb)	Breathing (lb)	Total (lb)	Rate (lb/hr)
[Non Condensables]					
Air	647.4829	407.9722	337.2715	745.2437	0.0851
[Condensables]					
Distillate Fuel Oil No. 2	0.3266	1.2773	1.1623	2.4397	3.0e-4

3: Storage Tank Activity

Title: Reno 6700 Gal

Start Date: 1/1/2022

End Date: 12/31/2022

Elapsed Time: 365.0 days

Vent ID:

Noncondensable: Air @ 0 Nm³/h

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 68375 gal

Crude Oil Factor-Kc: 1

Vessel Name: 6700 gal

Void Vol.: 6,768.21 gal

Work Vol.: 6,700 gal

No Control Devices

Final Contents	6700.0 gal	47638.8818 lb	2.16 °C			
	Weight	Pure-Vp	W[i]	X[i]	A[i]	X*Vp*A
[Liquid Phase]	(lb)	(mmHg)				(mmHg)
Diesel Fuel No. 2	47638.8818	0.1455	1.0	1.0	1	0.1455

Emissions From Vessel: 6700 gal

	Effective Vp	Working	Breathing	Total	Rate
[Non Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Air	647.483	600.3712	455.9211	1056.2923	0.1206
[Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Diesel Fuel No. 2	0.3266	1.305	1.0856	2.3906	3.0e-4

4: Storage Tank Activity

Title: Reno 250 Gal

Start Date: 1/1/2022

End Date: 12/31/2022

Elapsed Time: 365.0 days

Vent ID:

Noncondensable: Air @ 0 Nm³/h

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 1250 gal

Crude Oil Factor-Kc: 1

Vessel Name: Reno 250 Gal

Void Vol.: 293.76 gal

Work Vol.: 250 gal

No Control Devices

Final Contents	250 gal	1775.4839 lb	2.16 °C				
	Weight	Pure-Vp	W[i]	X[i]	A[i]	X*Vp*A	
[Liquid Phase]	(lb)	(mmHg)				(mmHg)	
Distillate Fuel Oil No. 2	1775.4839	0.1358	1.0	1.0	1	0.1358	

Emissions From Vessel: Reno 250 Gal

	Effective Vp	Working	Breathing	Total	Rate
[Non Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Air	647.4769	10.9757	19.79	30.7658	0.0035
[Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Distillate Fuel Oil No. 2	0.3327	0.0344	0.0682	0.1026	1.17098e-5

5: Storage Tank Activity

Title: Reno 250 Gal Gasoline

Start Date: 1/1/2022

End Date: 12/31/2022

Elapsed Time: 365.0 days

Vent ID:

Noncondensable: Air @ 0 Nm³/h

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 1250 gal

Crude Oil Factor-Kc: 1

Vessel Name: Reno 250 Gal

Void Vol.: 293.76 gal

Work Vol.: 250 gal

No Control Devices

Final Contents	250 gal	1402.0272 lb	2.16 °C			
[Liquid Phase]	Weight (lb)	Pure-Vp (mmHg)	W[i]	X[i]	A[i]	X*Vp*A (mmHg)
Gasoline (RVP 11.5)	1402.0272	193.7025	1.0	1.0	1	193.7025

Emissions From Vessel: Reno 250 Gal

	Effective Vp (mm Hg)	Working (lb)	Breathing (lb)	Total (lb)	Rate (lb/hr)
[Non Condensables]					
Air	387.0909	6.0067	60.8425	66.8492	0.0076
[Condensables]					
Gasoline (RVP 11.5)	260.7187	11.0127	88.8446	99.8573	0.0114

6: Storage Tank Activity

Title: Reno 600 Gal

Start Date: 1/1/2024

End Date: 12/31/2024

Elapsed Time: 366.0 days

Vent ID:

Noncondensable: Air @ 0 scfh

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 4607.0 gal

Crude Oil Factor-Kc: 1

Vessel Name: Reno 600 Gal

Void Vol.: 621.83 gal

Work Vol.: 300 gal

No Control Devices

Final Contents	600 gal	4261.1613 lb	2.16 °C				
	Weight	Pure-Vp	W[i]	X[i]	A[i]	X*Vp*A	
[Liquid Phase]	(lb)	(mmHg)				(mmHg)	
Distillate Fuel Oil No. 2	4261.1613	0.1358	1.0	1.0	1	0.1358	

Emissions From Vessel: Reno 600 Gal

	Effective Vp	Working	Breathing	Total	Rate	
[Non Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)	
Air	647.4815	40.4553	41.9884	82.4437	0.0094	
[Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)	
Distillate Fuel Oil No. 2	0.3281	0.1265	0.1446	0.2711	3.08605e-5	

7: Storage Tank Activity

Title: Reno 660 Gal

Start Date: 1/1/2022

End Date: 12/31/2022

Elapsed Time: 365.0 days

Vent ID:

Noncondensable: Air @ 0 Nm³/h

Saturation: 100%

Pressure: 647.8095 mmHg

Using Monthly Avg. Temp.

Location: Nevada, Reno Volume Throughput: 5652.0 gal

Crude Oil Factor-Kc: 1

Vessel Name: Reno 660 Gal

Void Vol.: 705.02 gal

Work Vol.: 660 gal

No Control Devices

Final Contents	660.0 gal	4687.2774 lb	2.16 °C			
	Weight	Pure-Vp	W[i]	X[i]	A[i]	X*Vp*A
[Liquid Phase]	(lb)	(mmHg)				(mmHg)
Distillate Fuel Oil No. 2	4687.2774	0.1358	1.0	1.0	1	0.1358

Emissions From Vessel: Reno 660 Gal

	Effective Vp	Working	Breathing	Total	Rate
[Non Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Air	647.4817	49.6279	47.5009	97.1287	0.0111
[Condensables]	(mm Hg)	(lb)	(lb)	(lb)	(lb/hr)
Distillate Fuel Oil No. 2	0.3278	0.1554	0.1638	0.3191	3.64315e-5

Summary Page

Emissions for (Unspecified Vent):

	CAS	Avg. Rate	Max. Rate	Total Weight
Air	132259-10-0	0.1017 lb/hr	0.1206 lb/hr	2675.5881 lb
Diesel Fuel No. 2	-	1.0e-4 lb/hr	3.0e-4 lb/hr	3.7453 lb
Distillate Fuel Oil No. 2	64742-47-8	1.0e-4 lb/hr	3.0e-4 lb/hr	3.1325 lb
Gasoline (RVP 11.5)	-	0.0038 lb/hr	0.0114 lb/hr	99.8573 lb

Total emissions for all vents:

	CAS	Avg. Rate	Max. Rate	Total Weight
Air	132259-10-0	0.1017 lb/hr	0.1206 lb/hr	2675.5881 lb
Diesel Fuel No. 2	-	1.0e-4 lb/hr	3.0e-4 lb/hr	3.7453 lb
Distillate Fuel Oil No. 2	64742-47-8	1.0e-4 lb/hr	3.0e-4 lb/hr	3.1325 lb
Gasoline (RVP 11.5)	-	0.0038 lb/hr	0.0114 lb/hr	99.8573 lb

**APPENDIX D.1 GROUP RMR01 GENERATORS
ENGINE MANUFACTURER
SPECIFICATIONS**

Generator set data sheet



Model: DQLF
Frequency: 60
Fuel type: Diesel
KW rating: 2750 standby
 2500 prime
 2100 continuous

Emissions level: EPA NSPS Stationary Emergency Tier 2

Exhaust emission data sheet:	EDS-1125
Exhaust emission compliance sheet:	EPA-1174
Sound performance data sheet:	MSP-1103
Cooling performance data sheet:	MCP-211
Prototype test summary data sheet:	PTS-299
Remote radiator cooling outline:	A034X495
Enhanced high ambient cooling system outline (ship loose):	A040W750

Fuel consumption	Standby				Prime				Continuous
	kW (kVA)				kW (kVA)				kW (kVA)
Ratings	2750 (3438)				2500 (3125)				2100 (2625)
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	Full
US gph	59.6	106.9	145.4	186.4	54.8	97.9	133.9	169.1	145.5
L/hr	226	405	550	706	207	371	507	640	551

Engine	Standby rating	Prime rating	Continuous rating
Engine manufacturer	Cummins Inc.		
Engine model	QSK78-G12		
Configuration	Cast Iron, V 18 cylinder		
Aspiration	Turbocharged and low temperature aftercooled		
Gross engine power output, kWm (bhp)	3028 (4060)	2737 (3670)	2271 (3045)
BMEP at set rated load, kPa (psi)	2599 (377)	2351 (341)	1951 (283)
Bore, mm (in)	170.0 (6.69)		
Stroke, mm (in)	190.0 (7.48)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	11.4 (2243)		
Compression ratio	15.5:1		
Lube oil capacity, L (qt)	413 (436)		
Overspeed limit, rpm	2100		
Regenerative power, kW	266		

Fuel flow

	Standby rating	Prime rating	Continuous rating
Maximum fuel flow, L/hr (US gph)	2101 (555)		
Maximum fuel restriction at injection pump with clean filter, kPa (in Hg)	17 (5)		
Maximum fuel inlet temperature, °C (°F)	70 (160)		

Air

Combustion air, m³/min (scfm)	239 (8451)	227 (8003)	207 (7302)
Maximum air cleaner restriction, kPa (in H ₂ O)	6.2 (25)		
Alternator cooling air, m³/min (cfm)	270 (9535)		

Exhaust

Exhaust flow at set rated load, m³/min (cfm)	570 (20134)	532 (18784)	480 (16965)
Exhaust temperature, °C (°F)	471 (879)	454 (850)	442 (827)
Maximum back pressure, kPa (in H ₂ O)	7 (28)		

Enhanced high ambient cooling system (ship loose)

Ambient design, °C (°F)	49 (120)		
Fan load, kW _m (HP) – (4 electric motors, 40 hp each)	120 (161)		
Coolant capacity (with radiator), L (US gal)	997 (263)		
Cooling system air flow, m³/min (scfm)	3966 (140000)		
Total heat rejection, MJ/min (Btu/min)	103.6 (98257)	94.6 (89618)	82.0 (77746)
Maximum cooling air flow static restriction, kPa (in H ₂ O)	1.69 (0.5)		

Remote radiator cooling at 25C, 110M¹

Set coolant capacity, L (US gal)	223 (59)		
Max flow rate at max friction head, jacket water circuit, L/min (US gal/min)	2222 (587)		
Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)	988 (261)		
Heat rejected, jacket water circuit, MJ/min (Btu/min)	55.1 (52234)	51.1 (48459)	45.5 (43158)
Heat rejected, aftercooler circuit, MJ/min (Btu/min)	45.9 (43523)	40.8 (38659)	33.9 (32088)
Heat rejected, fuel circuit, MJ/min (Btu/min)	2.6 (2500)		
Total heat radiated to room, MJ/min (Btu/min)	17 (16185)	15.5 (14645)	13.3 (12617)
Maximum friction head, jacket water circuit, kPa (psi)	69 (10)		
Maximum friction head, aftercooler circuit, kPa (psi)	48 (7)		
Maximum static head, jacket water circuit, m (ft)	18.3 (60)		
Maximum static head, aftercooler circuit, m (ft)	18.3 (60)		
Maximum jacket water outlet temp, °C (°F)	104 (220)	100 (212)	100 (212)
Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)	49 (120)		
Maximum aftercooler inlet temp, °C (°F)	71 (160)	66 (150)	
Maximum fuel flow, L/hr (US gph)	2101 (555)		
Maximum fuel return line restriction, kPa (in Hg)	16.9 (5)		

¹ For non-standard remote installations contact your local Cummins Power Generation representative.

Weights²

Unit dry weight kgs (lbs)	25689 (56635)
Unit wet weight kgs (lbs)	26508 (58440)

² Weights represent a set with standard features. See outline drawing for weights of other configurations.

Derating factors

Standby	Full rated power available up to 728 m (2387 ft) at ambient temperature up to 40 °C (104 °F). Above these elevations, at 40 °C (104 °F), derate by an additional 7.75% per 305 m (1000 ft). Derate by 2.25% at sea level at ambient temperatures up to 50 °C (122 °F). Above these elevations, at 50 °C (122 °F), derate by an additional 7.4% per 305 m (1000 ft). At higher ambient temperatures, derate by an additional 19% per 10 °C (18 °F).
Prime	Full rated power available up to 394 m (1294 ft) at ambient temperature up to 40 °C (104 °F). Above these elevations, at 40 °C (104 °F), derate by an additional 8.5% per 305 m (1000 ft). Derate by 11.5% at sea level at ambient temperatures up to 50 °C (122 °F). Above these elevations, at 50 °C (122 °F), derate by an additional 8.25% per 305 m (1000 ft). At higher ambient temperatures, derate by an additional 22% per 10 °C (18 °F).
Continuous	Full rated power available at sea level at ambient temperature up to 40 °C (104 °F). Above these elevations, at 40 °C (104 °F), derate by an additional 9.75% per 305 m (1000 ft). Derate by 29% at sea level at ambient temperatures up to 50 °C (122 °F). Above these elevations, at 50 °C (122 °F), derate by an additional 8.5% per 305 m (1000 ft). At higher ambient temperatures, derate by an additional 28% per 10 °C (18 °F).

Ratings definitions

Emergency standby power (ESP):	Limited-time running power (LTP):	Prime power (PRP):	Base load (continuous) power (COP):
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.	Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

Alternator data

Voltage	Connection¹	Temp rise degrees C	Duty²	Single phase factor³	Max surge kVA⁴	Winding No.	Alternator data sheet	Feature Code
220/380	Wye	125	S		N/A	13	ADS-531	B407-2
380	Wye	150	S		7944	13	ADS-516	B814-2
440	Wye	150	S/P/C		9719	12	ADS-517	B813-2
380	Wye	125	P		7944	13	ADS-516	B815-2
380	Wye	80	C		N/A	13	ADS-531	B800-2
220/380	Wye	105	C		7944	13	ADS-516	B597-2
380	Wye	105	P		10049	13	ADS-517	B840-2
440	Wye	125	S/P/C		13024	12	ADS-531	B663-2
440	Wye	105	S/P		13024	12	ADS-531	B664-2
480	Wye	150	S		8412	12	ADS-516	B816-2
277/480	Wye	125	P		8412	12	ADS-516	B718-2
480	Wye	125	S/P/C		9719	12	ADS-517	B801-2
480	Wye	105	S		13024	12	ADS-531	B280-2
480	Wye	80	S		14781	12	ADS-532	B601-2
480	Wye	80	P		13024	12	ADS-531	B694-2
480	Wye	105	C		7267	12	ADS-515	B583-2
600	Wye	150	S		8189	7	ADS-516	B817-2

Notes:

¹ Single phase power can be taken from three phase generator sets at up to the value listed in the single phase factor column for the generator set nameplate kW rating at unity power factor.

² Standby (S), Prime (P) and Continuous ratings (C).

³ Factor for the *Single Phase Output from Three Phase Alternator* formula listed below.

⁴ Maximum rated starting kVA that results in a minimum of 90% of rated sustained voltage during starting.

Alternator data (continued)

Voltage	Connection ¹	Temp rise degrees C	Duty ²	Single phase factor ³	Max surge kVA ⁴	Winding No.	Alternator data sheet	Feature Code
347/600	Wye	125	P		8189	7	ADS-516	B720-2
347/600	Wye	80	S		N/A	7	ADS-532	B604-2
600	Wye	80	P		12426	7	ADS-531	B695-2
347/600	Wye	105	C		7233	7	ADS-515	B582-2
347/600	Wye	105	S		12426	7	ADS-531	B839-2
2400/4160	Wye	105	P/C		7295	51	ADS-519	B571-2
13200-13800	Wye	125	P		6800	91	ADS-522	B804-2
13200	Wye	105	C		6800	91	ADS-522	B805-2
13200	Wye	125	S/P		11213	91	ADS-533	B819-2
13200	Wye	105	S		11213	91	ADS-533	B501-2
13200	Wye	80	P		13438	91	ADS-534	B566-2
13200	Wye	80	S		13438	91	ADS-534	B807-2
13200	Wye	80	C		11213	91	ADS-533	B808-2
13800	Wye	125	S		7993	91	ADS-523	B820-2
13800	Wye	105	P		7993	91	ADS-523	B821-2
13800	Wye	105	C		6800	91	ADS-522	B460-2
13800	Wye	80	S		13438	91	ADS-534	B610-2
13800	Wye	80	P		11213	91	ADS-533	B809-2
13800	Wye	80	C		7993	91	ADS-523	B565-2
12470	Wye	125	S		11213	91	ADS-533	B822-2
12470	Wye	105	P		11213	91	ADS-533	B823-2
12470	Wye	105	S		13438	91	ADS-534	B568-2
12470	Wye	80	P		13438	91	ADS-534	B812-2
12470	Wye	105	C		6800	91	ADS-522	B569-2
12470	Wye	80	C		11213	91	ADS-533	B570-2
13800	Wye	105	S		11213	91	ADS-533	B895-2
2400/4160	Wye	105	S		8752	51	ADS-520	B933-2
2400/4160	Wye	80	S		11185	51	ADS-545	B935-2
2400/4160	Wye	150	S/P/C		7295	51	ADS-519	B938-2
2400/4160	Wye	125	S		7295	51	ADS-519	B940-2
600	Wye	80	C		12426	7	ADS-531	B589-2
2400/4160	Wye	80	P		8752	51	ADS-520	B939-2

Notes:

¹ Single phase power can be taken from three phase generator sets at up to the value listed in the single phase factor column for the generator set nameplate kW rating at unity power factor.

² Standby (S), Prime (P) and Continuous ratings (C).

³ Factor for the *Single Phase Output from Three Phase Alternator* formula listed below.

⁴ Maximum rated starting kVA that results in a minimum of 90% of rated sustained voltage during starting.

Formulas for calculating full load currents:

Three phase output

$$\frac{\text{kW} \times 1000}{\text{Voltage} \times 1.73 \times 0.8}$$

Single phase output

$$\frac{\text{kW} \times \text{SinglePhaseFactor} \times 1000}{\text{Voltage}}$$

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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Minneapolis, MN 55432
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Phone 763 574 5000
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D-3518 (6/12)



cumminspower.com



**Power
Generation**

Exhaust Emission Data Sheet

2750DQLF

60 Hz Diesel Generator Set

EPA Emission

Engine Information:

Model:	Cummins Inc. QSK78-G12	Bore:	6.69 in. (170 mm)
Type:	4 Cycle, 60°V, 18 Cylinder Diesel	Stroke:	7.48 in. (190 mm)
Aspiration:	Turbocharged and Low Temperature Aftercooled	Displacement:	4735 cu. In. (18.98 liters)
Compression Ratio:	15.5:1		
Emission Control Device:	Turbocharger and Aftercooled.		

	1/4	1/2	3/4	Full	Full	Full
PERFORMANCE DATA	Standby	Standby	Standby	Standby	Prime	Continuous
BHP @ 1800 RPM (60 Hz)	1015	2030	3045	4060	3670	3045
Fuel Consumption (gal/Hr)	59.6	107.0	145.5	186.6	169.1	145.5
Exhaust Gas Flow (CFM)	8409	13364	16965	20134	18784	16965
Exhaust Gas Temperature (°F)	762	811	827	879	851	827
EXHAUST EMISSION DATA						
HC (Total Unburned Hydrocarbons)	0.52	0.26	0.18	0.14	0.16	0.18
NOx (Oxides of Nitrogen as NO2)	3.60	3.40	4.40	6.40	5.60	4.60
CO (carbon Monoxide)	0.57	0.27	0.24	0.43	0.30	0.23
PM (Particular Matter)	0.11	0.05	0.05	0.04	0.04	0.05
SO2 (Sulfur Dioxide)	0.13	0.12	0.11	0.10	0.11	0.11
Smoke (Bosch)	0.4	0.3	0.3	0.3	0.3	0.3

All Values are Grams/HP-Hour, Smoke is Bosch #

TEST CONDITIONS

Data is representative of steady-state engine speed (± 36 RPM) at designated genset loads. Pressures, temperatures, and emission rates were stabilized.

Fuel Specification:	ASTM D975 No. 2-D diesel fuel with 0.03-0.05% sulfur content (by weight), and 40-60 cetane number.
Fuel Temperature:	104 \pm 9 °F (at fuel pump inlet)
Intake Air Temperature:	77 \pm 9 °F
Barometric Pressure:	29.6 \pm 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air
Reference Standard:	ISO 8178

The NOx, HC, CO and PM emission data tabulated here are representative of test data taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.



Application & Performance Data

Project Information

Site Location: Reno, NV
 Project Name: Reno QSK78 Retrofits
 Application: Standby Power
 Number Of Engines: 12
 Operating Hours per Year: 100

Engine Specifications

Engine Manufacturer: Cummins
 Model Number: QSK78-G12
 Rated Speed: 1800 RPM
 Type of Fuel: Ultra-Low Sulfur Diesel (ULSD)
 Type of Lube Oil: 1 wt% sulfated ash or less
 Lube Oil Consumption: 0.1 % Fuel Consumption
 Number of Exhaust Manifolds: 1

Engine Data

Load	Power	Exhaust Flow	Exhaust Temp.	O2	H2O
%	bhp	acfm	F	%	%
100	4,060	20,134	879	10.0	12.5
75	3,045	16,965	827	10.0	12.5
50	2,030	13,364	811	10.0	12.5
25	1,015	8,409	762	10.0	12.5

Emission Data

Load (ekW)	Species	Raw Engine Emissions		Tier 4F Emissions Targets ⁴		Estimated Actual Emissions ⁴	
		g/bhp-hr	ppmvd	g/bhp-hr	ppmvd	g/bhp-hr	ppmvd
2750	NOx*	6.40	1144	0.50	89	0.500	90
	CO	0.43	126	2.60	768	0.100	30
	NMHC**†	0.14	72	0.14	72	0.020	10
	PM ₁₀ [†]	0.04	28	0.02	14	< 0.01	-
2062	NOx*	4.40	677	-	-	0.500	77
	CO	0.24	61	-	-	0.060	15
	NMHC**†	0.18	79	-	-	0.036	16
	PM ₁₀ [†]	0.05	29	-	-	< 0.01	-
1375	NOx*	3.40	437	-	-	1.000	129
	CO	0.27	57	-	-	0.065	14
	NMHC**†	0.26	96	-	-	0.065	24
	PM ₁₀ [†]	0.05	25	-	-	< 0.01	-
688	NOx*	3.60	354	-	-	1.500	147
	CO	0.57	92	-	-	0.100	16
	NMHC**†	0.52	140	-	-	0.130	37
	PM ₁₀ [†]	0.11	26	-	-	< 0.01	-

* MW referenced as NO₂

** MW referenced as CH₄. Propane in the exhaust shall not exceed 15% by volume of the NMHC compounds in the exhaust, excluding aldehydes. The 15% (vol.) shall be established on a wet basis, reported on a methane molecular weight basis. The measurement of exhaust NMHC composition shall be based upon EPA method 320 (FTIR), and shall exclude formaldehyde.

† NMHC and PM are not measured during commissioning by MIRATECH

In-field testing of particulate (PM) with use of a MIRATECH DPF should be conducted with a certified and calibrated Opacity meter, (such as the Red Mountain Smoke Check 1667). The engine should be tested at idle after an initial warm up period. Test samples should be below 5% measured at the atmospheric outlet of the exhaust.

System Specifications

DOC/SCR/DPF System Specifications (M3Z-72-63-J-23100006-R4, RCHDZ-2600-2-23100056, ACIS-3, Commissioning & Startup, FACINS-M3Z-72-63-23100006)

SCR Catalyst Space Velocity:	10,395 1/hr
Sound Target:	75 dBA @ 50 ft
Reactant:	Urea
Percent Concentration:	32.5%
Design Exhaust Flow Rate:	20,134 acfm (cfm)
Design Exhaust Temperature ¹ :	879° F
Exhaust Temperature Limits:	572° F – 977° F
Minimum Regeneration Temperature ² :	500° F
SCR Catalyst Volume:	45 ft ³
System Dosing Capacity:	115 L/hr
System Pressure Loss:	16.0 inH ₂ O (Clean)
Estimated Reactant Consumption:	16.0 gal/hr (61 L/hr) / Per Engine

Sound Data

	Octave Band Center Frequency (OBCF)											Receiver	
	Hz	31.5	63	125	250	500	1000	2000	4000	8000	dBA	Angle	Distance
Raw Engine Exhaust Sound Levels													
Sound Power A-Weighted	dBA		93.0	114.0	119.0	122.0	121.0	125.0	123.0	114.0	129.7		
Calculated Sound Power	dB		119.2	130.2	127.7	125.2	121.0	123.8	122.0	115.1	129.7		
Calculated Sound Pressure	dB		111.2	122.1	119.6	117.2	112.9	115.7	114.0	107.1	121.6	90°	3.3 ft
Requested Sound Target													
Overall Sound Pressure											75.0	90°	50 ft
Calculated Target Overall Sound Pressure											98.6	90°	3.3 ft
Sound Performance Estimations (M3Z-72-63-J-23100006-R4)													
Estimated Sound Attenuation	dB	12.0	17.5	24.5	31.8	37.5	45.3	56.5	66.8	70.3	37.2		
Estimated Sound Power	dB		101.7	105.7	95.9	87.7	75.7	67.3	55.2	44.8	92.5		
Estimated Sound Pressure	dB		70.0	74.0	64.2	56.1	44.0	35.6	23.6	13.2	60.8	90°	50 ft
Estimated Sound Pressure	dB		93.7	97.6	87.8	79.7	67.6	59.2	47.2	36.8	84.4	90°	3.3 ft

- The stated values are based on the data given by the engine manufacturer (as referenced in table above) according to the unsilenced exhaust noise, exhaust gas flow, and temperature.
- The length of the exhaust piping before and after the silencer must be free of resonance in terms of the ignition frequency of the combustion engine.
- If the engine manufacturer sound data is missing any octave bands, it will affect the estimation calculation in the table above.
- Computed noise levels at each distance and frequency are based on a free field condition; site conditions have not been considered in acoustic predictions.
- For all distance noise propagation, free field dispersion rule of 6 dB is used every time distance is doubled.
- Product shall be installed in accordance with standard industry practices, local codes/standards, and manufacturer requirements.
- The acoustic performance shown is an estimate only; the performance is not guaranteed.

**APPENDIX D.3 GROUP RMR03 AND RMR04
GENERATORS ENGINE
MANUFACTURER SPECIFICATIONS**

DIESEL GENERATOR SET

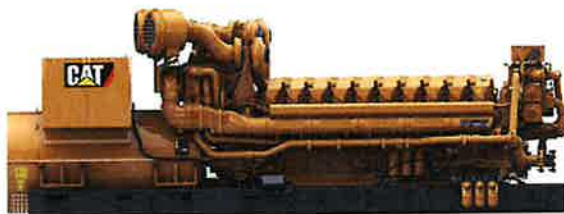


Image shown may not reflect actual package

STANDBY 4000 ekW 5000 kVA 60 Hz 1800 rpm 12470 Volts

Caterpillar is leading the power generation Market place with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

FUEL/EMISSIONS STRATEGY

- EPA Certified for Stationary Emergency Applications (EPA Tier 2 emissions level)

DESIGN CRITERIA

- The generator set accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response.

FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested
- Flexible packaging options for easy and cost effective installation

SINGLE-SOURCE SUPPLIER

- Fully prototype tested with certified torsional vibration analysis available

WORLDWIDE PRODUCT SUPPORT

- Cat® dealers provide extensive post sale support including maintenance and repair agreements
- Cat dealers have over 1,800 dealer branch stores operating in 200 countries.
- The Cat S•O•SSM program effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by products.

CAT C175-20 DIESEL ENGINE

- Reliable, rugged, durable design
- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight

CAT SR5 GENERATOR

- Designed to match performance and output characteristics of Cat diesel engines
- Single point access to accessory connections

CAT EMCP 4 CONTROL PANELS

- Simple user friendly interface and navigation
- Scalable system to meet a wide range of customer needs
- Integrated Control System and Communications Gateway

SEISMIC CERTIFICATION*

- Seismic Certification available
- Anchoring details are site specific, and are dependent on many factors such as generator set size, weight, and concrete strength. IBC Certification requires that the anchoring system used is reviewed and approved by a Professional Engineer
- Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, IBC 2012, CBC 2007, CBC 2010

*Not available with some options – Consult with your Cat dealer.

STANDBY 4000 eKW 5000 kVA

60 Hz 1800 rpm 12470 Volts



FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	<ul style="list-style-type: none">• Air cleaner, 4 x single element canister with service indicator(s)• Plug group for air inlet shut-off	<ul style="list-style-type: none"><input type="checkbox"/> Air cleaner, 4 x dual element with service indicator(s)<input type="checkbox"/> Air inlet adapters
Cooling	<ul style="list-style-type: none">• SCAC cooling• Jacket water and AC inlet/outlet flanges	<ul style="list-style-type: none"><input type="checkbox"/> Remote horizontal SCAC radiator<input type="checkbox"/> Remote fuel cooler<input type="checkbox"/> Low coolant level sensor (for remote radiators)
Exhaust	<ul style="list-style-type: none">• Dry exhaust manifold• Bolted flange (ANSI 8" & DIN 200) with bellow for each turbo (qty 4)	<ul style="list-style-type: none"><input type="checkbox"/> Engine exhaust temperature module<input type="checkbox"/> Mufflers (15 dBA, 25 dBA, or 40 dBA)<input type="checkbox"/> Dual 20" or single 24" vertical exhaust collector<input type="checkbox"/> Weld flanges: ANSI 20" and ANSI 24"
Crankcase Systems	<ul style="list-style-type: none">• Open crankcase ventilation	<ul style="list-style-type: none"><input type="checkbox"/> Crankcase explosion relief valve
Fuel	<ul style="list-style-type: none">• Primary fuel filter with water separator• Secondary fuel filters (engine mounted)	
Generator SR5	<ul style="list-style-type: none">• 3 phase brushless, salient pole• Space heater kit• IEC platinum stator RTD's	<ul style="list-style-type: none"><input type="checkbox"/> Oversize generators<input type="checkbox"/> Power connection arrangement
Governor	<ul style="list-style-type: none">• ADEM™ A4	<ul style="list-style-type: none"><input type="checkbox"/> Redundant shutdown
Control Panels	<ul style="list-style-type: none">• Shipp loose EMCP 4 control panel	<ul style="list-style-type: none"><input type="checkbox"/> EMCP 4.2<input type="checkbox"/> EMCP 4.3<input type="checkbox"/> Local & remote annunciator modules<input type="checkbox"/> Discrete I/O module<input type="checkbox"/> Generator temperature monitoring & protection<input type="checkbox"/> Remote monitoring<input type="checkbox"/> Load share module
Lube	<ul style="list-style-type: none">• Lubricating oil• Oil filter, filler and dipstick• Oil drain line with valves• Fumes disposal• Gear type lube oil pump• Integral lube oil cooler• Electric prelube pumps	
Mounting	<ul style="list-style-type: none">• Rails-engine / generator• Rubber anti-vibration mounts (shipped loose)	<ul style="list-style-type: none"><input type="checkbox"/> Spring type linear vibration isolators<input type="checkbox"/> IBC vibration isolators
Starting / Charging	<ul style="list-style-type: none">• Dual 24 volt electric starting motors• Batteries with rack and cables• Battery disconnect switch	<ul style="list-style-type: none"><input type="checkbox"/> Oversized battery set<input type="checkbox"/> 75 amp charging alternator<input type="checkbox"/> Battery chargers (20, 35 or 50 Amp)<input type="checkbox"/> Jacket water heater<input type="checkbox"/> Redundant Electric Starter
General	<ul style="list-style-type: none">• RH service (Except LH Service Oil Filter)• Paint - Caterpillar Yellow with high gloss black rails• SAE standard rotation• Flywheel and flywheel housing - SAE No. 00	<ul style="list-style-type: none"><input type="checkbox"/> Barring group- manual or air powered<input type="checkbox"/> Factory test reports

SPECIFICATIONS

CAT GENERATOR

Frame	3055
Excitation	PM
Pitch.....	0.6667
Number of poles.....	4
Number of bearings	2
Number of Leads.....	6
Insulation	Class H
IP rating	Drip proof IP23
Over speed capability - % of rated.....	125%
Wave form deviation.....	3 %
Voltage regulator.....	3 phase sensing with selectable V/Hz regulation

CAT DIESEL ENGINE

C175-20 SCAC, V-20, 4 stroke, water-cooled diesel

Bore	175.00 mm (6.89 in)
Stroke	220.00 mm (8.66 in)
Displacement	105.8 L (6456.31 in ³)
Compression ratio.....	15.3:1
Aspiration.....	TA
Fuel system.....	Common Rail
Governor Type.....	ADEM™ A4

CAT EMCP 4 CONTROL PANELS

EMCP 4 controls including:

- Run / Auto / Stop Control
- Speed Adjust
- Voltage Adjust
- Engine Cycle Crank
- Emergency stop pushbutton

EMCP 4.2 controller features:

- 24-volt DC operation
- Environmental sealed front face
- Text alarm/event descriptions
- True RMS AC metering, 3-phase, ±1% accuracy.

Digital indication for:

- RPM
- DC volts
- Operating hours
- Oil pressure (psi, kPa or bar)
- Coolant temperature
- Volts (L-L & L-N), frequency (Hz)
- Amps (per phase & average)
- Power Factor (per phase & average)
- kW (per phase, average & percent)
- kVA (per phase, average & percent)
- kVAr (per phase, average & percent)
- kW-hr (total)
- kVAr-hr (total)

Warning/shutdown with common LED indication of shutdowns for:

- Low oil pressure
- High coolant temperature
- Overspeed
- Emergency stop
- Failure to start (overcrank)
- Low coolant temperature
- Low coolant level

Programmable protective relaying functions:

- Generator phase sequence
- Over/Under voltage (27/59)
- Over/Under Frequency (81 o/u)
- Reverse Power (kW) (32)
- Reverse Reactive Power (kVAr) (32RV)
- Overcurrent (50/51)

Communications

- Customer data link (Modbus RTU)
- Accessory module data link
- Serial annunciator module data link
- 6 programmable digital inputs
- 6 programmable relay outputs (Form A)
- 2 programmable relay outputs (Form C)
- 2 programmable digital outputs

STANDBY 4000 ekW 5000 kVA

60 Hz 1800 rpm 12470 Volts



Technical Data

Open Generator Set - 1800 rpm/60 Hz/12 470 Volts		DM8854-01	
EPA Certified for Stationary Emergency Applications (EPA Tier 2 emissions levels)			
Generator Set Package Performance Genset Power rating @ 0.8 pf Genset Power Rating without fan		5000 kVA 4000 ekW	
Fuel Consumption 100% Load with fan 75% Load with fan 50% Load with fan		1039.3 L/hr 770.6 L/hr 615.0 L/hr	274.6 Gal/hr 203.6 Gal/hr 162.5 Gal/hr
Inlet Air Combustion air inlet flow rate		339.1 m ³ /min	11975 cfm
Exhaust System Exhaust stack gas temperature (engine out) Exhaust gas flow rate Exhaust system backpressure (maximum allowable)		473.9 °C 871.4 m ³ /min 6.7 kPa	885 °F 30771 cfm 26.9 in water
Heat Rejection Heat rejection to coolant Heat rejection to exhaust (total) Heat rejection to aftercooler Heat rejection to atmosphere from engine Heat rejection to atmosphere from generator		2148 kW 3928 kW 448 kW 206 kW 197 kW	122108 Btu/min 223338 Btu/min 25446 Btu/min 11729 Btu/min 11213 Btu/min
Alternator Motor starting capability @30% voltage dip Frame Temperature Rise		10728 skVA 3055 130 °C	234 °F
Lube System Sump refill with filter		675 L	178.3 gal
Emissions (Nominal)² NOx g/hp-hr CO g/hp-hr HC g/hp-hr PM g/hp-hr		5.67 g/hp-hr 0.36 g/hp-hr 0.05 g/hp-hr 0.04 g/hp-hr	

Note: This generator set is not offered with an engine driven radiator. Addition of an engine driven fan will reduce the output below the nameplate rating.

¹ Some packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40 degree C ambient per NEMA MG1-32.

² Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77°F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 btu/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle. Emissions values are tailpipe out with aftertreatment installed. Values shown as zero may be greater than zero but were below the detection level of the equipment used at the time of measurement.

STANDBY 4000 ekW 5000 kVA

60 Hz 1800 rpm 12470 Volts



RATING DEFINITIONS AND CONDITIONS

Applicable Codes and Standards:

AS1359, CSAC22.2 No100-04, UL142, UL489, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG1-22, NEMA MG1-33, 72/23/EEC, 98/37/EC, 2004/108/EC

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.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions

Fuel Rates are based on fuel oil of 35° API [16° C (60° F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.). Additional ratings may be available for specific customer requirements, contact your Caterpillar representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

STANDBY 4000 e kW 5000 kVA

60 Hz 1800 rpm 12470 Volts



DIMENSIONS

Package Dimensions		
Length	6642 mm	261.5 in
Width	2336 mm	92.0 in
Height	2555 mm	100.6 in
Weight	23400 kg	51588 lbs

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions.

Performance No: DM8854-01

Feature Code: 175DR1J

Gen. Arr. Number: 331-3046

Sourced: U.S. Sourced

LEHE0592-00 (06/14)

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Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication.

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PERFORMANCE DATA[EM0374]

November 4, 2015

Performance Number: EM0374

Change Level: 00

SALES MODEL: C175-20
ENGINE POWER (BHP): 5,647
GEN POWER W/O FAN (EKW): 4,000.0
COMPRESSION RATIO: 15.3
RATING LEVEL: MISSION CRITICAL STANDBY
PUMP QUANTITY: 2
FUEL TYPE: DIESEL
MANIFOLD TYPE: DRY
GOVERNOR TYPE: ADEM4
ELECTRONICS TYPE: ADEM4
CAMSHAFT TYPE: STANDARD
IGNITION TYPE: CI
INJECTOR TYPE: CR
FUEL INJECTOR: 3492522
REF EXH STACK DIAMETER (IN): 14

COMBUSTION: DI
ENGINE SPEED (RPM): 1,800
HERTZ: 60
ASPIRATION: TA
AFTERCOOLER TYPE: SCAC
AFTERCOOLER CIRCUIT TYPE: JW+OC+1AC, 2AC
AFTERCOOLER TEMP (F): 115
JACKET WATER TEMP (F): 210.2
TURBO CONFIGURATION: PARALLEL
TURBO QUANTITY: 4
TURBOCHARGER MODEL: GTB6772BLN-48T-1.56
CERTIFICATION YEAR: 2012
CRANKCASE BLOWBY RATE (FT3/HR): 2,693.6
FUEL RATE (RATED RPM) NO LOAD (GAL/HR): 17.7
PISTON SPD @ RATED ENG SPD (FT/MIN): 2,598.4

INDUSTRY	SUBINDUSTRY	APPLICATION
ELECTRIC POWER	STANDARD	GENERATOR SET

General Performance Data

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP
EKW	%	BHP	PSI	LB/BHP-HR	GAL/HR	IN-HG	DEG F	DEG F	IN-HG	DEG F
4,000.0	100	5,646	385	0.340	274.6	91.5	121.4	1,223.6	63.8	885.0
3,600.0	90	5,082	346	0.333	241.5	78.7	122.1	1,170.0	53.3	863.5
3,200.0	80	4,517	308	0.331	213.7	68.9	122.7	1,130.4	45.4	848.5
3,000.0	75	4,235	289	0.334	201.9	65.4	123.0	1,116.3	42.6	843.6
2,800.0	70	3,952	269	0.342	193.2	63.8	123.1	1,109.6	41.1	841.9
2,400.0	60	3,388	231	0.367	177.6	61.6	123.3	1,102.0	39.3	841.5
2,000.0	50	2,823	192	0.400	161.5	58.1	123.3	1,094.3	37.0	841.9
1,600.0	40	2,259	154	0.427	137.9	46.7	123.3	1,070.3	29.9	836.6
1,200.0	30	1,694	115	0.457	110.6	34.4	123.3	1,038.0	22.7	828.7
1,000.0	25	1,412	96	0.474	95.5	27.9	123.3	1,016.8	19.0	821.8
800.0	20	1,129	77	0.494	79.6	21.5	123.4	936.8	15.4	755.2
400.0	10	565	38	0.561	45.3	8.2	123.6	713.3	8.1	560.2

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP	WET INLET AIR VOL FLOW RATE	ENGINE OUTLET WET EXH GAS VOL FLOW RATE	WET INLET AIR MASS FLOW RATE	WET EXH GAS MASS FLOW RATE	WET EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)	DRY EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)
EKW	%	BHP	IN-HG	DEG F	CFM	CFM	LB/HR	LB/HR	FT3/MIN	FT3/MIN
4,000.0	100	5,646	95	447.1	11,975.3	30,771.1	52,034.6	53,956.7	11,251.4	10,278.3
3,600.0	90	5,082	82	403.6	10,801.6	27,127.7	46,559.5	48,251.0	10,080.4	9,219.1
3,200.0	80	4,517	72	370.5	9,903.4	24,372.9	42,392.4	43,889.9	9,160.7	8,393.9
3,000.0	75	4,235	68	358.2	9,570.5	23,364.4	40,857.5	42,273.1	8,814.7	8,086.9
2,800.0	70	3,952	66	352.8	9,419.4	22,890.7	40,159.9	41,514.4	8,647.0	7,946.3
2,400.0	60	3,388	63	344.5	9,188.1	22,234.1	39,132.6	40,378.2	8,401.6	7,748.8
2,000.0	50	2,823	59	331.6	8,823.4	21,356.0	37,561.8	38,694.4	8,067.5	7,466.6
1,600.0	40	2,259	48	296.1	7,735.7	18,946.6	32,739.5	33,713.0	7,186.6	6,657.9
1,200.0	30	1,694	35	249.5	6,513.0	15,777.1	27,435.9	28,214.7	6,020.9	5,591.4
1,000.0	25	1,412	29	222.1	5,852.3	13,909.3	24,608.5	25,276.7	5,336.5	4,967.4
800.0	20	1,129	22	193.0	5,196.1	11,910.5	21,805.8	22,363.0	4,820.2	4,503.8
400.0	10	565	9	127.6	3,821.2	7,403.1	15,986.8	16,303.9	3,569.0	3,368.8

Heat Rejection Data

PUMP POWER IS INCLUDED IN HEAT REJECTION BALANCE, BUT IS NOT SHOWN.

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXHAUST RECOVERY TO 350F	FROM OIL COOLER	FROM 2ND STAGE AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BHP	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN
4,000.0	100	5,646	122,108	11,726	222,737	122,328	31,385	25,446	239,449	589,255	627,705
3,600.0	90	5,082	104,836	11,134	193,893	104,781	27,604	20,627	215,503	518,261	552,078
3,200.0	80	4,517	91,416	10,700	171,775	92,328	24,425	17,046	191,559	458,583	488,506
3,000.0	75	4,235	86,283	10,546	163,492	87,958	23,084	15,758	179,586	433,393	461,673
2,800.0	70	3,952	83,272	10,473	159,109	85,999	22,083	15,118	167,614	414,598	441,651
2,400.0	60	3,388	78,745	10,396	152,721	83,413	20,304	14,359	143,669	381,209	406,084
2,000.0	50	2,823	73,903	10,333	145,244	79,853	18,456	13,630	119,724	346,506	369,116
1,600.0	40	2,259	63,130	10,155	128,220	68,706	15,763	11,279	95,779	295,951	315,262
1,200.0	30	1,694	51,301	9,853	104,918	56,477	12,639	8,672	71,835	237,298	252,782
1,000.0	25	1,412	45,000	9,648	90,893	49,820	10,916	7,397	59,862	204,947	218,320
800.0	20	1,129	38,728	9,170	74,758	37,590	9,104	6,291	47,890	170,923	182,076
400.0	10	565	25,687	7,877	37,226	13,953	5,175	4,217	23,945	97,156	103,495

Sound Data

SOUND DATA REPRESENTATIVE OF NOISE PRODUCED BY THE "ENGINE ONLY"

EXHAUST: Sound Power (1/3 Octave Frequencies)

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	OVERALL SOUND	100 HZ	125 HZ	160 HZ	200 HZ	250 HZ	315 HZ	400 HZ	500 HZ	630 HZ	800 HZ
EKW	%	BHP	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
4,000.0	100	5,646	130.3	98.3	103.0	109.5	113.8	113.3	112.2	115.0	114.7	117.0	117.2
3,600.0	90	5,082	129.0	98.1	102.0	113.7	112.5	112.7	111.7	114.2	113.8	116.1	115.9
3,200.0	80	4,517	127.9	93.2	100.0	116.3	112.7	110.4	112.9	114.4	112.7	115.7	115.2
3,000.0	75	4,235	127.2	91.7	99.2	116.4	113.8	108.6	112.0	113.9	112.4	115.5	115.2
2,800.0	70	3,952	126.7	90.3	98.7	116.1	114.5	108.0	112.1	113.7	112.1	115.2	114.9
2,400.0	60	3,388	126.2	88.8	98.6	114.8	114.5	107.3	112.2	113.0	111.7	114.8	114.6
2,000.0	50	2,823	125.9	90.5	99.2	113.0	112.4	105.9	110.5	111.5	111.4	114.6	114.9
1,600.0	40	2,259	124.9	88.8	99.9	113.1	110.5	108.0	111.6	111.8	111.2	114.4	113.9
1,200.0	30	1,694	123.7	88.7	99.7	113.0	109.7	106.7	111.6	111.7	111.6	113.8	111.5
1,000.0	25	1,412	122.9	88.4	99.0	112.7	109.6	105.7	110.6	111.2	111.6	112.9	109.7
800.0	20	1,129	121.3	87.0	97.8	110.6	109.2	104.5	107.5	109.5	111.2	110.9	107.6
400.0	10	565	118.4	84.4	95.9	107.6	106.3	104.0	107.9	106.6	107.8	107.4	104.2

EXHAUST: Sound Power (1/3 Octave Frequencies)

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	1000 HZ	1250 HZ	1600 HZ	2000 HZ	2500 HZ	3150 HZ	4000 HZ	5000 HZ	6300 HZ	8000 HZ	10000 HZ
EKW	%	BHP	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
4,000.0	100	5,646	119.0	120.3	124.4	121.0	120.4	117.1	114.5	110.8	107.9	106.4	117.6
3,600.0	90	5,082	117.8	119.2	122.5	119.8	118.6	114.8	112.5	109.0	106.2	105.9	114.3
3,200.0	80	4,517	116.1	118.3	120.1	118.8	117.5	113.3	111.1	107.3	104.9	108.2	108.0
3,000.0	75	4,235	115.4	117.6	118.2	117.7	116.7	112.7	110.2	106.6	104.5	111.2	104.8
2,800.0	70	3,952	114.7	117.0	117.1	117.0	116.0	112.3	109.5	105.9	104.1	111.9	102.6
2,400.0	60	3,388	113.9	116.6	116.5	116.3	115.5	111.9	109.2	105.3	103.5	111.8	100.8
2,000.0	50	2,823	114.1	116.8	116.7	116.6	115.7	111.8	109.6	105.7	103.8	110.2	101.5
1,600.0	40	2,259	112.7	115.6	114.8	115.4	114.4	110.6	107.5	103.8	103.0	105.1	98.8
1,200.0	30	1,694	111.5	114.0	112.7	114.1	112.7	109.0	106.1	102.3	102.4	100.4	96.8
1,000.0	25	1,412	110.9	113.0	111.6	113.3	111.5	108.0	105.0	101.9	102.1	98.5	95.5
800.0	20	1,129	110.1	110.8	110.1	111.6	109.2	106.0	103.1	101.9	98.8	96.9	93.3
400.0	10	565	109.3	107.2	107.0	107.1	104.9	103.2	100.8	98.6	94.1	93.7	89.5

PERFORMANCE DATA[EM0374]

Sound Data (Continued)

MECHANICAL: Sound Power (1/3 Octave Frequencies)

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	OVERALL SOUND	100 HZ	125 HZ	160 HZ	200 HZ	250 HZ	315 HZ	400 HZ	500 HZ	630 HZ	800 HZ
EKW	%	BHP	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
4,000.0	100	5,646	127.0	81.1	95.8	100.1	100.1	103.1	107.6	111.8	112.9	112.1	112.9
3,600.0	90	5,082	126.3	80.7	95.1	99.4	99.4	102.6	106.8	111.1	112.2	111.4	112.8
3,200.0	80	4,517	125.3	81.4	94.5	99.6	99.6	103.1	107.0	110.8	111.9	111.1	112.7
3,000.0	75	4,235	124.8	81.9	94.0	99.7	99.8	103.3	107.0	110.4	111.7	111.2	112.6
2,800.0	70	3,952	124.5	82.4	93.3	99.4	99.4	103.1	107.2	110.0	111.3	111.3	112.4
2,400.0	60	3,388	124.2	83.0	92.5	98.8	99.1	103.5	107.3	109.5	110.7	111.3	111.9
2,000.0	50	2,823	124.2	83.1	92.6	99.1	100.6	105.8	108.8	109.9	110.8	111.3	111.7
1,600.0	40	2,259	123.5	83.2	90.9	99.0	100.0	105.8	107.1	109.0	110.8	111.1	112.2
1,200.0	30	1,694	122.8	81.7	89.4	98.8	99.6	105.1	106.7	109.5	110.9	111.1	112.2
1,000.0	25	1,412	122.5	81.0	88.9	98.7	99.4	104.4	106.5	109.8	111.1	111.1	112.0
800.0	20	1,129	122.3	81.1	88.8	97.7	99.0	103.4	106.6	109.6	112.1	111.5	111.7
400.0	10	565	121.7	80.7	89.1	96.4	96.3	99.7	105.8	108.5	109.9	110.5	110.6

MECHANICAL: Sound Power (1/3 Octave Frequencies)

GENSET POWER WITHOUT FAN	PERCENT LOAD	ENGINE POWER	1000 HZ	1250 HZ	1600 HZ	2000 HZ	2500 HZ	3150 HZ	4000 HZ	5000 HZ	6300 HZ	8000 HZ	10000 HZ
EKW	%	BHP	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
4,000.0	100	5,646	115.4	114.6	115.2	115.3	115.3	114.7	114.7	113.8	113.6	112.5	121.3
3,600.0	90	5,082	114.7	114.3	114.5	114.7	114.6	113.3	113.1	112.4	112.6	112.3	120.7
3,200.0	80	4,517	115.6	114.0	113.9	113.9	114.0	112.7	111.8	111.5	112.0	114.0	116.5
3,000.0	75	4,235	115.6	113.7	113.5	112.8	113.5	112.5	111.3	111.0	111.6	115.5	112.3
2,800.0	70	3,952	115.3	113.5	113.1	112.3	113.1	112.4	111.0	110.6	111.2	115.7	110.5
2,400.0	60	3,388	114.8	113.3	112.7	111.8	112.8	112.4	110.9	110.3	111.0	115.7	109.6
2,000.0	50	2,823	115.0	113.3	112.8	111.5	112.8	112.1	111.1	110.4	111.2	115.4	110.3
1,600.0	40	2,259	114.5	113.2	112.1	111.0	112.2	111.2	110.0	109.3	110.3	112.9	108.2
1,200.0	30	1,694	114.1	112.8	111.4	110.3	111.2	110.1	109.3	108.2	109.8	108.9	106.2
1,000.0	25	1,412	114.0	112.6	111.2	110.1	110.8	109.6	108.8	107.7	109.6	106.8	105.2
800.0	20	1,129	114.2	112.4	111.4	110.2	110.4	109.2	107.7	107.3	106.5	105.0	103.1
400.0	10	565	114.9	112.6	111.4	109.8	110.0	109.5	106.5	105.1	102.2	102.1	99.1

Emissions Data

RATED SPEED POTENTIAL SITE VARIATION: 1800 RPM

GENSET POWER WITHOUT FAN	EKW	4,000.0	3,000.0	2,000.0	1,000.0	400.0
PERCENT LOAD	%	100	75	50	25	10
ENGINE POWER	BHP	5,646	4,235	2,823	1,412	565
TOTAL NOX (AS NO2)	G/HR	37,883	30,174	9,805	4,345	2,813
TOTAL CO	G/HR	3,618	4,269	9,139	2,336	3,033
TOTAL HC	G/HR	354	324	616	823	697
PART MATTER	G/HR	310.9	244.0	179.6	155.5	179.2
TOTAL NOX (AS NO2)	(CORR 5% O2) MG/NM3	3,184.5	3,387.7	1,381.5	1,120.0	1,500.5
TOTAL CO	(CORR 5% O2) MG/NM3	269.1	461.0	1,200.4	573.3	1,513.1
TOTAL HC	(CORR 5% O2) MG/NM3	23.1	29.5	71.0	172.7	302.7
PART MATTER	(CORR 5% O2) MG/NM3	20.7	22.2	20.9	33.4	81.0
TOTAL NOX (AS NO2)	(CORR 5% O2) PPM	1,551	1,650	673	546	731
TOTAL CO	(CORR 5% O2) PPM	215	369	960	459	1,210
TOTAL HC	(CORR 5% O2) PPM	43	55	132	322	565
TOTAL NOX (AS NO2)	G/HP-HR	6.81	7.18	3.48	3.08	4.99
TOTAL CO	G/HP-HR	0.65	1.02	3.25	1.66	5.38
TOTAL HC	G/HP-HR	0.06	0.08	0.22	0.58	1.24
PART MATTER	G/HP-HR	0.06	0.06	0.06	0.11	0.32
TOTAL NOX (AS NO2)	LB/HR	83.52	66.52	21.62	9.58	6.20
TOTAL CO	LB/HR	7.98	9.41	20.15	5.15	6.69
TOTAL HC	LB/HR	0.78	0.72	1.36	1.81	1.54
PART MATTER	LB/HR	0.69	0.54	0.40	0.34	0.40

PERFORMANCE DATA[EM0374]

November 4, 2015

RATED SPEED NOMINAL DATA: 1800 RPM

GENSET POWER WITHOUT FAN		EKW	4,000.0	3,000.0	2,000.0	1,000.0	400.0
PERCENT LOAD		%	100	75	50	25	10
ENGINE POWER		BHP	5,646	4,235	2,823	1,412	565
TOTAL NOX (AS NO2)		G/HR	31,569	25,145	8,170	3,621	2,344
TOTAL CO		G/HR	2,010	2,371	5,077	1,298	1,685
TOTAL HC		G/HR	266	244	463	619	524
TOTAL CO2		KG/HR	2,976	2,167	1,717	949	461
PART MATTER		G/HR	222.1	174.3	128.3	111.1	128.0
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,653.8	2,823.0	1,151.3	933.3	1,250.4
TOTAL CO	(CORR 5% O2)	MG/NM3	149.5	256.1	666.9	318.5	840.6
TOTAL HC	(CORR 5% O2)	MG/NM3	17.4	22.2	53.3	129.9	227.6
PART MATTER	(CORR 5% O2)	MG/NM3	14.8	15.9	14.9	23.8	57.9
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,293	1,375	561	455	609
TOTAL CO	(CORR 5% O2)	PPM	120	205	534	255	672
TOTAL HC	(CORR 5% O2)	PPM	32	41	100	242	425
TOTAL NOX (AS NO2)		G/HP-HR	5.67	5.99	2.90	2.57	4.16
TOTAL CO		G/HP-HR	0.36	0.56	1.80	0.92	2.99
TOTAL HC		G/HP-HR	0.05	0.06	0.16	0.44	0.93
PART MATTER		G/HP-HR	0.04	0.04	0.05	0.08	0.23
TOTAL NOX (AS NO2)		LB/HR	69.60	55.43	18.01	7.98	5.17
TOTAL CO		LB/HR	4.43	5.23	11.19	2.86	3.71
TOTAL HC		LB/HR	0.59	0.54	1.02	1.36	1.15
TOTAL CO2		LB/HR	6,561	4,777	3,785	2,093	1,016
PART MATTER		LB/HR	0.49	0.38	0.28	0.24	0.28
OXYGEN IN EXH		%	10.0	10.7	12.1	13.1	15.2
DRY SMOKE OPACITY		%	1.5	1.5	0.6	0.5	2.3
BOSCH SMOKE NUMBER			0.53	0.51	0.24	0.19	0.74

PERFORMANCE DATA[EM0374]

Regulatory Information

EPA EMERGENCY STATIONARY					2011 - ----
GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 60 SUBPART IIII AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE EMERGENCY STATIONARY REGULATIONS.					
Locality	Agency	Regulation	Tier/Stage	Max Limits - G/BKW - HR	
U.S. (INCL CALIF)	EPA	STATIONARY	EMERGENCY STATIONARY	CO: 3.5 NOx + HC: 6.4 PM: 0.20	

Altitude Derate Data

ALTITUDE DERATE DATA IS BASED ON THE ASSUMPTION OF A 20 DEGREES CELSIUS(36 DEGREES FAHRENHEIT) DIFFERENCE BETWEEN AMBIENT OPERATING TEMPERATURE AND ENGINE INLET MANIFOLD TEMPERATURE (IMAT). AMBIENT OPERATING TEMPERATURE IS DEFINED AS THE AIR TEMPERATURE MEASURED AT THE TURBOCHARGER COMPRESSOR INLET.

ALTITUDE CORRECTED POWER CAPABILITY (BHP)

AMBIENT OPERATING TEMP (F)	30	40	50	60	70	80	90	100	110	120	130	140	NORMAL
ALTITUDE (FT)													
0	5,647	5,647	5,647	5,647	5,647	5,647	5,647	5,647	5,647	5,647	5,647	5,647	5,647
1,000	5,647	5,647	5,647	5,647	5,647	5,647	5,647	5,647	5,647	5,617	5,420	5,140	5,647
2,000	5,647	5,647	5,647	5,647	5,647	5,647	5,647	5,647	5,647	5,517	5,232	4,923	5,647
3,000	5,647	5,647	5,647	5,647	5,647	5,647	5,647	5,632	5,606	5,379	5,056	4,730	5,647
4,000	5,628	5,628	5,628	5,628	5,628	5,628	5,625	5,571	5,488	5,264	4,977	4,689	5,628
5,000	5,503	5,503	5,503	5,503	5,503	5,503	5,479	5,414	5,348	5,151	4,900	4,649	5,503
6,000	5,360	5,360	5,360	5,360	5,360	5,360	5,336	5,275	5,214	5,031	4,796	4,560	5,360
7,000	5,215	5,215	5,215	5,215	5,215	5,215	5,193	5,138	5,082	4,910	4,688	4,466	5,215
8,000	5,070	5,070	5,070	5,070	5,070	5,070	5,050	5,000	4,950	4,789	4,581	4,372	5,070
9,000	4,934	4,934	4,934	4,934	4,934	4,934	4,916	4,871	4,827	4,674	4,476	4,271	4,934
10,000	4,805	4,805	4,805	4,805	4,805	4,805	4,789	4,749	4,709	4,564	4,372	4,166	4,805
11,000	4,675	4,675	4,675	4,675	4,675	4,675	4,661	4,627	4,592	4,453	4,269	4,061	4,675
12,000	4,546	4,546	4,546	4,546	4,546	4,546	4,534	4,504	4,474	4,342	4,166	3,956	4,546
13,000	4,427	4,427	4,427	4,427	4,427	4,427	4,417	4,391	4,365	4,232	4,053	3,846	4,427
14,000	4,311	4,311	4,311	4,311	4,311	4,311	4,302	4,280	4,257	4,122	3,939	3,736	4,311
15,000	4,194	4,194	4,194	4,194	4,194	4,194	4,187	4,168	4,149	4,012	3,825	3,626	4,194

Cross Reference

Engine Arrangement			
Arrangement Number	Effective Serial Number	Engineering Model	Engineering Model Version
2643120	BXR00001	GS269	-
3442955	BXR00001	GS269	-

			Test Specification Data			
Test Spec	Setting	Effective Serial Number	Engine Arrangement	Governor Type	Default Low Idle Speed	Default High Idle Speed
4183088	LL6404	BXR00001	3442955			

Performance Parameter Reference

Parameters Reference:DM9600-08

PERFORMANCE DEFINITIONS

PERFORMANCE DEFINITIONS DM9600

APPLICATION:

Engine performance tolerance values below are representative of a typical production engine tested in a calibrated dynamometer test cell at SAE J1995 standard reference conditions. Caterpillar maintains ISO9001:2000 certified quality management systems for engine test facilities to assure accurate calibration of test equipment. Engine test data is corrected in accordance with SAE J1995. Additional reference material SAE J1228, J1349, ISO 8665, 3046-1:2002E, 3046-3:1989, 1585, 2534, 2288, and 9249 may apply in part or are similar to SAE J1995. Special engine rating request (SERR) test data shall be noted.



Application & Performance Data

Project Information

Site Location: Reno, NV
 Project Name: Red Tail
 Application: Standby Power
 Number Of Engines: 6
 Operating Hours per Year: 200

Engine Specifications

Engine Manufacturer: CATERPILLAR
 Model Number: C175-20
 Rated Speed: 1800 RPM
 Type of Fuel: Ultra-Low Sulfur Diesel (ULSD)
 Type of Lube Oil: 1 wt% sulfated ash or less
 Lube Oil Consumption: 0.1 % Fuel Consumption
 Number of Exhaust Manifolds: 1

Engine Data

Load	Power	Exhaust Flow	Exhaust Temp.	O2	H2O
%	bhp	acfm	F	%	%
100	5,646	30,771	885	10.0	10
90	5,110	27,287	864	10.2	10
75	4,280	23,480	844	10.7	10
50	2,853	21,448	842	12.1	10
25	1,427	14,012	824	13.1	10

Emission Data

Load (ekW)	Species	Raw Engine Emissions		Tier 4F Emissions Targets ⁴		Estimated Actual Emissions ⁴	
		g/bhp-hr	ppmvd	g/bhp-hr	ppmvd	g/bhp-hr	ppmvd
4000	NOx*	6.81	1088	0.50	80	0.497	79
	CO	0.65	171	2.60	682	0.127	33
	NMNEHC**†	0.06	27	0.14	64	0.010	5
	PM ₁₀ †	0.06	37	0.02	12	< 0.01	-
3600	NOx*	7.27	1167	-	-	0.500	80
	CO	0.64	169	-	-	0.128	34
	NMNEHC**†	0.06	28	-	-	0.010	5
	PM ₁₀ †	0.06	37	-	-	<.01	-
3000	NOx*	7.25	1109	-	-	0.500	77
	CO	0.96	241	-	-	0.200	50
	NMNEHC**†	0.07	31	-	-	0.014	7
	PM ₁₀ †	0.06	35	-	-	< 0.01	-
2000	NOx*	3.51	391	-	-	1.000	111
	CO	3.25	595	-	-	0.650	119
	NMNEHC**†	0.21	67	-	-	0.040	29
	PM ₁₀ †	0.06	26	-	-	< 0.01	-
1000	NOx*	3.08	260	-	-	1.540	130
	CO	1.65	228	-	-	0.330	46
	NMNEHC**†	0.58	140	-	-	0.120	29
	PM ₁₀ †	0.11	36	-	-	0.017	5

* MW referenced as NO₂

** MW referenced as CH₄. Propane in the exhaust shall not exceed 15% by volume of the NMHC compounds in the exhaust, excluding aldehydes. The 15% (vol.) shall be established on a wet basis, reported on a methane molecular weight basis. The measurement of exhaust NMHC composition shall be based upon EPA method 320 (FTIR), and shall exclude formaldehyde.

† NMNEHC and PM are not measured during commissioning by MIRATECH

In-field testing of particulate (PM) with use of a MIRATECH DPF should be conducted with a certified and calibrated Opacity meter, (such as the Red Mountain Smoke Check 1667). The engine should be tested at idle after an initial warm up period. Test samples should be below 5% measured at the atmospheric outlet of the exhaust.

**APPENDIX D.4 WELL 2 AND WELL 3 GENERATOR
ENGINE MANUFACTURER
SPECIFICATIONS**

SD250 | 8.7L | 250 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

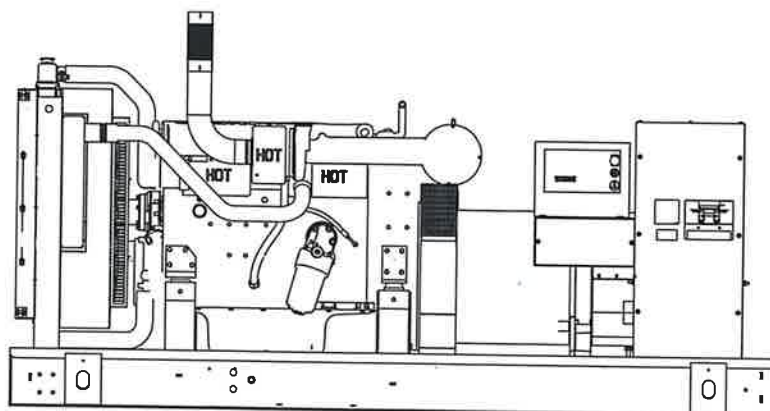
GENERAC | **INDUSTRIAL
POWER**

STANDBY POWER RATING

250 kW, 313 kVA, 60 Hz

PRIME POWER RATING*

225 kW, 281 kVA, 60 Hz



*Built in the USA using domestic and foreign parts

*EPA Certified Prime ratings are not available in the U.S. or its Territories.

**Certain options or customization may not hold certification valid.

Image used for illustration purposes only

CODES AND STANDARDS

Generac products are designed to the following standards:



UL2200, UL508, UL142, UL498



NFPA70, 99, 110, 37



NEC700, 701, 702, 708



ISO9001, 8528, 3046, 7637,
Pluses #2b, 4



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 50 years, Generac has led the industry with 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's 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 application under adverse conditions.

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

SD250 | 8.7L | 250 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

STANDARD FEATURES

ENGINE SYSTEM

General

- Oil Drain Extension
- Air Cleaner
- Fan Guard
- Stainless Steel flexible exhaust connection
- Critical Exhaust Silencer (enclosed only)
- Factory Filled Oil
- Radiator Duct Adapter (open set only)

Fuel System

- Fuel lockoff solenoid
- Primary fuel filter

Cooling System

- Closed Coolant Recovery System
- UV/Ozone resistant hoses
- Factory-Installed Radiator
- Radiator Drain Extension
- 50/50 Ethylene glycol antifreeze
- 120 VAC Coolant Heater

Engine Electrical System

- Battery charging alternator
- Battery cables
- Battery tray
- Solenoid activated starter motor
- Rubber-booted engine electrical connections

ALTERNATOR SYSTEM

- UL2200 GENprotect™
- 12 leads (3-phase, non 600 V)
- Class H insulation material
- Vented rotor
- 2/3 pitch
- Skewed stator
- Auxiliary voltage regulator power winding
- Amortisseur winding
- Brushless Excitation
- Sealed Bearings
- Automated manufacturing (winding, insertion, lacing, varnishing)
- Rotor dynamically spin balanced
- Full load capacity alternator
- Protective thermal switch

GENERATOR SET

- Internal Genset Vibration Isolation
- Separation of circuits - high/low voltage
- Separation of circuits - multiple breakers
- Silencer Heat Shield
- Wrapped Exhaust Piping
- Silencer housed in discharge hood (enclosed only)
- Standard Factory Testing
- 2 Year Limited Warranty (Standby rated Units)
- 1 Year Limited Warranty (Prime rated Units)

ENCLOSURE (IF SELECTED)

- Rust-proof fasteners with nylon washers to protect finish
- High performance sound-absorbing material
- Gasketed doors
- Stamped air-intake louvers
- Air discharge hoods for radiator-upward pointing
- Stainless steel lift off door hinges
- Stainless steel lockable handles
- Rhino Coat™ - Textured polyester powder coat

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
- Rhino Coat™ - Textured polyester powder coat
- Stainless hardware

CONTROL SYSTEM



Control Panel

- Digital H Control Panel - Dual 4x20 Display
- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable PLC
- RS-232/485
- All-Phase Sensing DVR
- Full System Status
- Utility Monitoring
- Low Fuel Pressure Indication
- 2-Wire Start Compatible
- Power Output (kW)

- Power Factor
- kW Hours, Total & Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents
- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage
- Frequency
- Date/Time Fault History (Event Log)
- Isochronous Governor Control
- Waterproof/sealed Connectors
- Audible Alarms and Shutdowns
- Not in Auto (Flashing Light)
- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type)
- NFPA110 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus protocol
- Predictive Maintenance algorithm
- Sealed Boards
- Password parameter adjustment protection

- Single point ground
- 15 channel data logging
- 0.2 msec high speed data logging
- Alarm information automatically comes up on the display

Alarms

- Oil Pressure (Pre-programmable Low Pressure Shutdown)
- Coolant Temperature (Pre-programmed High Temp Shutdown)
- Coolant Level (Pre-programmed Low Level Shutdown)
- Engine Speed (Pre-programmed Over speed Shutdown)
- Battery Voltage Warning
- Alarms & warnings time and date stamped
- Alarms & warnings for transient and steady state conditions
- Snap shots of key operation parameters during alarms & warnings
- Alarms and warnings spelled out (no alarm codes)

CONFIGURABLE OPTIONS**ENGINE SYSTEM****General**

- ☐ Oil Heater
- ☐ Industrial Exhaust Silencer

Fuel System

- ☐ Flexible fuel lines
- ☐ Primary fuel filter

Engine Electrical System

- ☐ 10A UL battery charger
- ☐ 2.5A UL battery charger
- ☐ Battery Warmer

ALTERNATOR SYSTEM

- ☐ Alternator Upsizing
- ☐ Anti-Condensation Heater
- ☐ Tropical coating
- ☐ Permanent Magnet Excitation

CIRCUIT BREAKER OPTIONS

- ☐ Main Line Circuit Breaker
- ☐ 2nd Main Line Circuit Breaker
- ☐ Shunt Trip and Auxiliary Contact
- ☐ Electronic Trip Breaker

GENERATOR SET

- ☐ Gen-Link Communications Software (English Only)
- ☐ IBC Seismic Certification
- ☐ 8 Position Load Center
- ☐ 2 Year Extended Warranty
- ☐ 5 Year Warranty
- ☐ 5 Year Extended Warranty

ENCLOSURE

- ☐ Weather Protected
- ☐ Level 1 Sound Attenuation
- ☐ Level 2 Sound Attenuation
- ☐ Steel Enclosure
- ☐ Aluminum Enclosure
- ☐ 150 MPH Wind Kit
- ☐ 12 VDC Enclosure Lighting Kit
- ☐ 120 VAC Enclosure Lighting Kit
- ☐ AC/DC Enclosure Lighting Kit
- ☐ Door Alarm Switch

TANKS (Size on last page)

- ☐ Electrical Fuel Level
- ☐ Mechanical Fuel Level
- ☐ 8" Fill Extension
- ☐ 13" Fill Extension

CONTROL SYSTEM

- ☐ 21-Light Remote Annunciator
- ☐ Remote Relay Panel (8 or 16)
- ☐ Oil Temperature Sender with Indication 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)
- ☐ Remote Communication - Modem
- ☐ Remote Communication - Ethernet
- ☐ 10A Run Relay
- ☐ Ground Fault Indication and Protection Functions

ENGINEERED OPTIONS**ENGINE SYSTEM**

- ☐ Coolant heater ball valves
- ☐ Block Heaters
- ☐ Fluid containment pans

ALTERNATOR SYSTEM

- ☐ 3rd Breaker Systems

CONTROL SYSTEM

- ☐ Spare inputs (x4) / outputs (x4) - H Panel Only
- ☐ Battery Disconnect Switch

GENERATOR SET

- ☐ Special Testing

ENCLOSURE

- ☐ Motorized Dampers
- ☐ Door switches for intrusion alert
- ☐ Enclosure ambient heaters

TANKS

- ☐ Overfill Protection Valve
- ☐ UL2085 Tank
- ☐ ULC S-601 Tank
- ☐ Stainless Steel Tank
- ☐ Special Fuel Tanks (MIDEQ and FL DEP/DERM, etc.)
- ☐ Vent Extensions

RATING DEFINITIONS

Standby - Applicable for a varying emergency load for the duration of a utility power outage with no overload capability.

Prime - Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. A 10% overload capacity is available for 1 out of every 12 hours. The Prime Power option is only available on International applications. Power ratings in accordance with ISO 8528-1, Second Edition

SD250 | 8.7L | 250 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 Emissions Data Sheet
Cylinder #	6
Type	In-Line
Displacement - L (cu In)	8.7 (530.91)
Bore - mm (in)	117 (4.61)
Stroke - mm (in)	135 (5.31)
Compression Ratio	16.5:1
Intake Air Method	Turbocharged/Aftercooled
Cylinder Head Type	4 Valve
Piston Type	Alloy Aluminum
Crankshaft Type	Drop Forged Steel

Engine Governing

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	+/- 0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full Flow
Crankcase Capacity - L (qts)	28 (29.57)

Cooling System

Cooling System Type	Closed Recovery
Water Pump	Pre-Lubed, Self Sealing
Fan Type	Pusher
Fan Speed (rpm)	2538
Fan Diameter mm (in)	762 (30.0)
Coolant Heater Wattage	2000
Coolant Heater Standard Voltage	120 V /240 V

Fuel System

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

Engine Electrical System

System Voltage	24 VDC
Battery Charging Alternator	Std
Battery Size	See Battery Index 0161970SBY
Battery Voltage	12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	520
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, Flexible Disc
Load Capacity - Standby	100%
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	±0.25%

SD250 | 8.7L | 250 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

OPERATING DATA

POWER RATINGS

		Standby
Single-Phase 120/240 VAC @1.0pf	250 kW	Amps: 1042
Three-Phase 120/208 VAC @0.8pf	250 kW	Amps: 867
Three-Phase 120/240 VAC @0.8pf	250 kW	Amps: 752
Three-Phase 277/480 VAC @0.8pf	250 kW	Amps: 376
Three-Phase 346/600 VAC @0.8pf	250 kW	Amps: 301

STARTING CAPABILITIES (sKVA)

		sKVA vs. Voltage Dip											
		480 VAC						208/240 VAC					
Alternator	kW	10%	15%	20%	25%	30%	35%	10%	15%	20%	25%	30%	35%
Standard	250	263	395	527	658	790	922	197	296	395	494	593	692
Upsize 1	300	303	454	605	757	908	1059	227	341	454	568	681	794
Upsize 2	350	383	575	767	958	1150	1342	280	410	535	640	770	900

FUEL CONSUMPTION RATES*

		Diesel - gal/hr (l/hr)	
Fuel Pump Lift - ft (m)		Percent Load	Standby
3 (1)		25%	5.5 (20.8)
		50%	10.4 (39.4)
Total Fuel Pump Flow (Combustion + Return)		75%	14.8 (56.0)
26 gal/hr		100%	18.5 (70.0)

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

COOLING

		Standby
Coolant Flow per Minute	g/min (l/min)	63.3 (240)
Coolant System Capacity	gal (L)	12.7 (49.2)
Heat Rejection to Coolant	BTU/hr	682,058
Inlet Air	cfm (m³/hr)	8872 (251)
Max. Operating Radiator Air Temp	F° (C°)	122 (50)
Max. Ambient Temperature (before derate)	F° (C°)	104 (40)
Maximum Radiator Backpressure	in H ₂ O	0.5

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power cfm (m³/min)	720 (20.39)

ENGINE

		Standby
Rated Engine Speed	rpm	1800
Horsepower at Rated kW**	hp	389
Piston Speed	ft/min (m/min)	1593 (486)
BMEP	psi	332

** Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes.

EXHAUST

		Standby
Exhaust Flow (Rated Output)	cfm (m³/min)	1940 (54.94)
Max. Backpressure (Post Silencer)	inHg (Kpa)	1.5 (5.1)
Exhaust Temp (Rated Output)	°F (°C)	1000 (538)
Exhaust Outlet Size (Open Set)	mm (in)	101.6 (4)

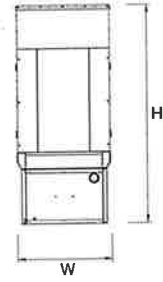
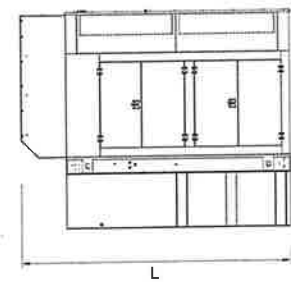
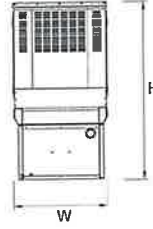
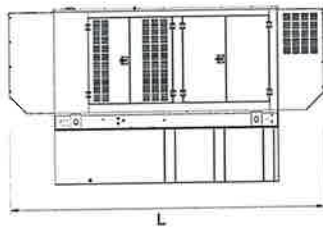
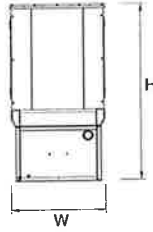
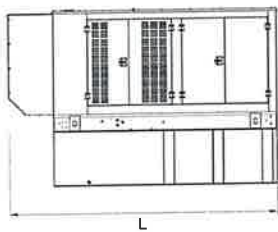
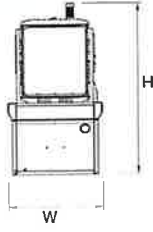
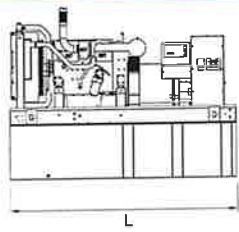
Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

SD250 | 8.7L | 250 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

DIMENSIONS AND WEIGHTS*



YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

OPEN SET

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H in (mm)	WT lbs (kg) - Tank & Open Set	
NO TANK	-	128 (3251) x 54 (1372) x 58 (1473)	4465 (2025)	
8	153 (579.2)	128 (3251) x 54 (1372) x 71 (1803)	5470 (2481)	
20	372 (1407)	128 (3251) x 54 (1372) x 83 (2108)	5892 (2673)	
32	589 (2227)	128 (3251) x 54 (1372) x 95 (2413)	6309 (2862)	
37	693 (2623.3)	136 (3454) x 54 (1372) x 95 (2413)	6060 (2749)	
51	946 (3581)	208 (5283) x 54 (1372) x 99 (2515)	7490 (3397)	
72	1325 (5015.7)	278 (7061) x 54 (1372) x 99 (2515)	8505 (3858)	

STANDARD ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H in (mm)	WT lbs (kg) - Enclosure Only	
			Steel	Aluminum
NO TANK	-	155 (3937) x 54 (1372) x 70 (1778)	821 (372)	279 (127)
8	153 (579.2)	155 (3937) x 54 (1372) x 83 (2108)		
20	372 (1407)	155 (3937) x 54 (1372) x 95 (2413)		
32	589 (2227)	155 (3937) x 54 (1372) x 107 (2718)		
37	693 (2623.3)	155 (3937) x 54 (1372) x 107 (2718)		
51	946 (3581)	208 (5283) x 54 (1372) x 111 (2819)		
72	1325 (5015.7)	278 (7061) x 54 (1372) x 111 (2819)		

LEVEL 1 ACOUSTIC ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H in (mm)	WT lbs (kg) - Enclosure Only	
			Steel	Aluminum
NO TANK	-	180 (4572) x 54 (1372) x 70 (1778)	1255 (569)	615 (279)
8	153 (579.2)	180 (4572) x 54 (1372) x 83 (2108)		
20	372 (1407)	180 (4572) x 54 (1372) x 95 (2413)		
32	589 (2227)	180 (4572) x 54 (1372) x 107 (2718)		
37	693 (2623.3)	180 (4572) x 54 (1372) x 107 (2718)		
51	946 (3581)	234 (5944) x 54 (1372) x 111 (2819)		
72	1325 (5015.7)	304 (7722) x 54 (1372) x 111 (2819)		

LEVEL 2 ACOUSTIC ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H in (mm)	WT lbs (kg) - Enclosure Only	
			Steel	Aluminum
NO TANK	-	155 (3937) x 54 (1372) x 93 (2362)	1482 (672)	708 (321)
8	153 (579.2)	155 (3937) x 54 (1372) x 106 (2692)		
20	372 (1407)	155 (3937) x 54 (1372) x 118 (2997)		
32	589 (2227)	155 (3937) x 54 (1372) x 130 (3302)		
37	693 (2623.3)	155 (3937) x 54 (1372) x 130 (3302)		
51	946 (3581)	208 (5283) x 54 (1372) x 132 (3353)		
72	1325 (5015.7)	278 (7061) x 54 (1372) x 132 (3353)		

*All measurements are approximate and for estimation purposes only. Sound dBA can be found on the sound data sheet. Enclosure Only weight is added to Tank & Open Set weight to determine total weight.

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

**APPENDIX D.5 WELL 4 GENERATOR ENGINE
MANUFACTURER SPECIFICATIONS**

Standby & Prime: 60Hz



Image shown might not reflect actual configuration

Engine Model	Cat® C9 ACERT™ In-line 6, 4-cycle diesel
Bore x Stroke	112mm x 149mm (4.4in x 5.9in)
Displacement	8.8 L (538 in³)
Compression Ratio	16.1:1
Aspiration	Turbocharged Air-to-Air Aftercooled
Fuel Injection System	HEUI
Governor	Electronic ADEM™ A4

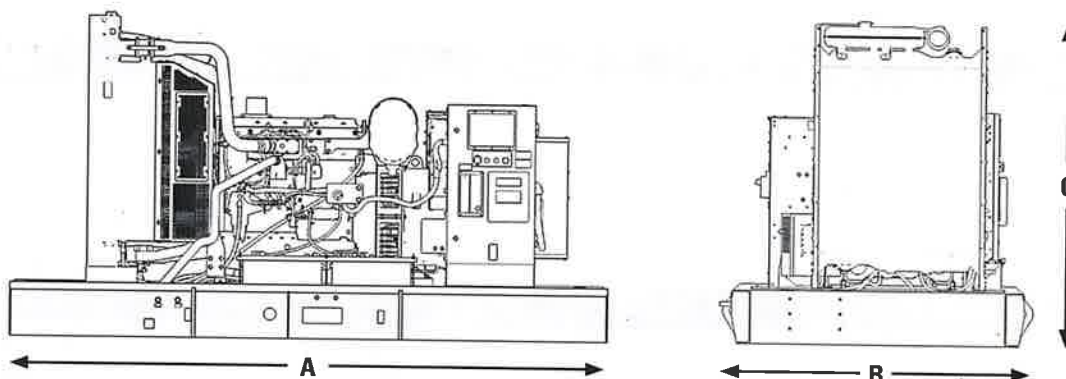
Model	Standby	Prime	Emission Strategy
C9	300 ekW, 375 kVA	275 ekW, 344 kVA	TIER III Non-Road

PACKAGE PERFORMANCE

Performance	Standby	Prime
Frequency	60 Hz	
Genset Power Rating	375 kVA	344 kVA
Genset power rating with fan @ 0.8 power factor	300 ekW	275 ekW
Emissions	TIER III Non-Road	
Performance Number	DM8168-04	DM8500-05
Fuel Consumption		
100% load with fan, L/hr (gal/hr)	86.0 (22.7)	80.5 (21.3)
75% load with fan, L/hr (gal/hr)	66.8 (17.6)	64.0 (16.9)
50% load with fan, L/hr (gal/hr)	51.5 (13.6)	50.5 (13.3)
25% load with fan, L/hr (gal/hr)	33.1 (8.7)	32.8 (8.7)
Cooling System¹		
Radiator air flow restriction (system), kPa (in. Water)	0.12 (0.48)	0.12 (0.48)
Radiator air flow, m³/min (cfm)	497 (17551)	497 (17551)
Engine coolant capacity, L (gal)	13.9 (3.7)	13.9 (3.7)
Radiator coolant capacity, L (gal)	43 (11.5)	43 (11.5)
Total coolant capacity, L (gal)	57 (15)	57 (15)
Inlet Air		
Combustion air inlet flow rate, m³/min (cfm)	26.0 (916.6)	25.3 (891.8)
Max. Allowable Combustion Air Inlet Temp, °C (°F)	50 (123)	51 (124)
Exhaust System		
Exhaust stack gas temperature, °C (°F)	497.3 (927.2)	495.7 (924.2)
Exhaust gas flow rate, m³/min (cfm)	69.7 (2460.9)	67.4 (2379.6)
Exhaust system backpressure (maximum allowable) kPa (in. water)	10.0 (40.0)	10.0 (40.0)
Heat Rejection		
Heat rejection to jacket water, kW (Btu/min)	120 (6838)	113 (6431)
Heat rejection to exhaust (total) kW (Btu/min)	320 (18223)	307 (17454)
Heat rejection to aftercooler, kW (Btu/min)	92 (5239)	83 (4726)
Heat rejection to atmosphere from engine, kW (Btu/min)	23 (1312)	18 (1009)

Emissions (Nominal) ²		Standby		Prime	
NOx, mg/Nm³ (g/hp-hr)		2196.0 (4.0)		1975.0 (3.6)	
CO, mg/Nm³ (g/hp-hr)		115.5 (0.2)		103.9 (0.2)	
HC, mg/Nm³ (g/hp-hr)		23.1 (0.06)		23.2 (0.06)	
PM, mg/Nm³ (g/hp-hr)		12.7 (0.03)		10.5 (0.03)	
Alternator ³					
Voltages		480V	600V	480V	600V
Motor starting capability @ 30% Voltage Dip		683 skVA	754 skVA	683 skVA	754 skVA
Current		451 amps	361 amps	414 amps	331 amps
Frame Size		LC5014J	LC5024J	LC5014J	LC5024J
Excitation		SE	AR	SE	AR
Temperature Rise		150 ° C	150 ° C	125 ° C	125 ° C

WEIGHTS & DIMENSIONS



Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight kg (lb)
3091 (122)	1622 (64)	2066 (82)	2313 (5100)

APPLICABLE CODES AND STANDARDS:

AS1359, CSA C22.2 No100-04, UL142, UL489, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG1-22, NEMA MG1-33, 2006/95/EC, 2006/42/EC, 2004/108/EC.

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

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.

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

RATINGS: Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

DEFINITIONS AND CONDITIONS

¹ For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

² Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77° F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 BTU/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

³ UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG1-32.

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LEHE1568-02 (05/20)

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Cold Weather Package

Cold weather events are often the cause for a utility power outage. For that reason, generator set preparedness is especially important in low temperature environments.

The Cold Weather Package enables the generator set to start easier during cold temperatures, increasing reliability under harsh, wintery conditions.

The factory installed Cold Weather Package, available with our Sound Attenuated enclosures, means your generator set will arrive on-site ready for operation.

Features:

- Door Inlet Actuator (for Damper control)

- Canopy Air Inlet Actuator (for Damper control)

- Gravity and Air Inlet Dampers

- Pump Style Jacket Water Heater

- Horizontal/Downflow Space Heaters

- UL 10 Amp Battery Charger

- 125A Load Center

**Door Inlet Actuator**

Image shown may not reflect actual package.

Operation

The actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight dampers. The spring return system provides consistent torque to the damper with, and without, power applied to the actuator.

TECHNICAL DATA

Power supply		24 VAC ± 20% 50/60 Hz 24 VDC ± 10%
Power consumption	running	5 W
	holding	2.5 W
Running time (nominal)	motor	< 40 to 75 sec
	spring	< 25 sec @-4°F to 122°F [-20°C to 50°C] < 60 sec @-22°F [-30°C]
Humidity		5 to 95% RH non-condensing
Ambient temperature		-22°F to 122°F [-30°C to 50°C]
Housing		NEMA type 2 / IP54
Housing material		zinc coated steel
Agency listings		cULus acc. to UL 873 and CAN/CSA C22.2 No. 24-93

**Canopy Air Inlet Actuator**

Image shown may not reflect actual package.

Operation

The actuators provide true spring return operation for reliable failsafe application and positive close off on air tight dampers. The spring return system provides constant torque to the damper with, and without, power applied to the actuator.

TECHNICAL DATA

TECHNICAL DATA	
Power supply	24 VAC \pm 20% 50/60 Hz 24 VDC +20% / -10%
Power consumption	running 6 W holding 2.5 W
Running time (nominal)	motor < 40 to 75 sec spring < 25 sec @-4°F to 122°F [-20°C to 50°C] < 60 sec @-22°F [-30°C]
Humidity	max. 95% RH non-condensing
Ambient temperature	-22°F to 122°F [-30°C to 50°C]
Housing	Nema 2, IP54, Enclosure Type2
Housing material	zinc coated metal and plastic casing
Agency listings	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC & 2006/95/EC



Gravity and Inlet Dampers

Image shown may not reflect actual package.

Gravity Damper

- Wide operating range – velocities up to 3000 fpm
- Corrosion resistant galvanized steel construction standard
- Mechanically locked blade seals

Air Inlet Dampers

- Blades constructed of AA5052 aluminum
- Shafts constructed of AA6061 aluminum.



Pump Style Jacket Water Heater

Image shown may not reflect actual package.

Single Phase 2500 Watts Pump style jacket water heater is a complete coolant preheater. It features an integrated pump that combines the benefits of forced circulation with a compact design that can mount to a variety of small engine applications. Forced circulation of the coolant delivers uniform heating throughout the entire engine, extends element life and offers a significant reduction in electrical consumption.

UL Listed , ULc Listed

240V

Installation provided with shut-off valves



Horizontal/Downflow Space Heaters

Image shown may not reflect actual package.

FEATURES

- Horizontal and downflow capability
 - One unit mounts either horizontally or vertically.
 - Louvers adjust up and down for control of throw direction.
 - Louvers have stops to prevent complete closing of the discharge area.
- 5 kW
- UL Listed & ULc Listed

Elements

- Aluminum-finned, copper clad steel sheath heating element has longer useful life, because of cooler sheath temperature and faster heat dissipation.
- Pull-through air flow design draws air across heating element for more even air distribution and cooler element operation.

Thermal cutout

Automatic reset linear thermal cut-out capillary type, provides protection over entire length of element area.

Volts	KW	Amps	PH	2-Stage Element	Std. Control Volts	Air Delivery CFM	FPM	T (F)	Motor RPM	HP	Horiz. Air Throw	Ship. WT)
208/240	3.7/5.0	18.0/21.0	1-3	5A	208/240	350	800	45	1600	1/100	12	24

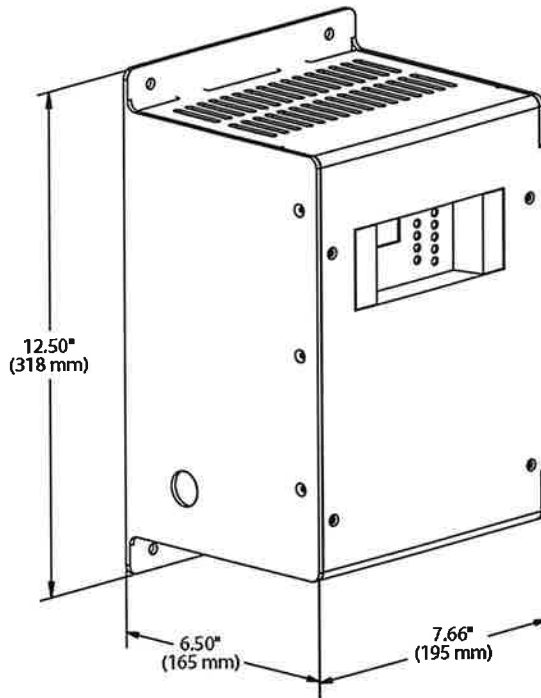


Image Shown may not Reflect Actual Package

UL 10 Amp Battery Charger

Output		Input	
Amps	Volts	Hz	Volts
10	24	50/60	110-120 208-240
Width	Depth	Height	Weight
195 mm (7.66")	165 mm (6.50")	318 mm (12.50")	10.4 kg (23 lb)

FEATURES

- Electronically current limited at 105% of rated output
- Alarm system
- Digital Display
- Lightning and voltage transient protection
- Protection of connected equipment
- Constant voltage, current limited, 4-rate automatic equalization
- IP 20 housing
- AC isolated from DC
- Temperature Compensation
 - On board temperature sensor with remote port
- Auto AC line compensation
- Output regulated by sensed battery voltage

SPECIFICATION

Input Supply	110-120 V 208-240 V
AC and DC Fuses	2 input and 2 output)
Output voltage	24V
Frequency	50/60 Hz
Operating temperature	-20°C (-4°F) to +60°C (140°F)

Housing constructed of rustproof anodized aluminum.

STANDARDS

- C-UL listed to UL 1236
- NFPA 70, NFPA 110
- CSA 22.2 No 107 certified
- UL 1564
- CE DOC to EN 60335
- IBC Seismic Certification

OPTIONS

NFPA 110 alarm package as follows:

- AC on Green led (indication)
- AC fail Red led and form C contact (2A)
- Float mode LED
- Fast charge LED
- Temp comp active LED
- Low battery volts Red LED & Form C contact
- High Battery Volts Red LED & Form C contact
- Charger fail Red LED & Form C contact
- Battery fault Red LED & Form C contact
 - Battery disconnected
 - Battery polarity reversed
 - Mismatched charger battery voltage
 - Open or high resistance charger to battery connection
 - Open battery cell or excessive internal resistance

125A Load Center

Image shown may not reflect actual package.

SPECIFICATION

Line Rated Current	125 A
Number of spaces	8
Number of circuits	16
Number of tandem circuit breakers	8
System Voltage	120/240 V AC
NEMA degree of protection	NEMA 3R outdoor
Electrical connection	Lugs
Wiring configuration	3-wire
Material	Tin plated aluminium busbar
Enclosure material	Galvannealed steel
Cover finish	Gray baked enamel
Product certifications	UL Listed

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Picture shown may not reflect actual configuration

C9 ACERT™ Sound Attenuated and Weather Protective Enclosures

U.S. Sourced

180 – 300 kW 60 Hz

Features

Robust/Highly Corrosion Resistant Construction

- Factory-installed on skid base
- Environmentally friendly, polyester powder baked paint
- Zinc plated or stainless steel fasteners
- Internally mounted-critical exhaust silencing system (sound attenuated only)
- Externally front-mounted enclosed exhaust silencing system (weather protective only)
- Designed and tested to comply with UL 2200 listed generator set package
- Compression door latches providing solid door seal

Excellent Access

- Large cable entry area for installation ease
- Accommodates side-mounted single or multiple breakers
- Two doors on both sides
- Vertically hinged allow 180° opening rotation and retention with door stays
- Lube oil and coolant drains routed to the exterior of the enclosure base

Transportability

- These enclosures are of extremely rugged construction to withstand outdoor exposure and rough handling common on many construction sites

Security and Safety

- Lockable access doors which give full access to control panel and breaker
- Cooling fan and battery charging alternator fully guarded
- Fuel fill, oil fill, and battery can only be reached via lockable access

- Externally mounted emergency stop button
- Designed for spreader bar lifting to ensure safety
- Stub-up area is rodent proof

Options

- Caterpillar yellow* or white paint
- Weather protective enclosure constructed with 14-gauge steel
- Sound attenuated Level 1 constructed with 14-gauge steel
- Sound attenuated Level 2 constructed with 14-gauge steel
- Sound attenuated enclosure constructed with 12-gauge aluminum (5052 grade)
- UL Listed 203 gallon integral fuel tank
- UL Listed 660 or 1002 gallon sub base fuel tanks
- Seismic certification per applicable building codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, IBC 2012, CBC 2007, CBC 2010
- IBC certification for 150 mph wind loading
- Anchoring details are site specific and are dependent on many factors such as generator set size, weight and concrete strength. IBC certification requires that the anchoring system used is reviewed and approved by a professional engineer.
- Control panel viewing window**
- Cold weather bundle. Available with SA Level 2 and Aluminum SA enclosures only

**Not available with aluminum enclosures

**Steel sound attenuated only

Enclosure Sound Pressure Levels at Standby Ratings

Enclosure Type	Standby eKW	Cooling Air Flow Rate		Ambient Capability*		(dBA) @ 7m (23 ft) at 100% Load
		m³/s	cfm	°C	°F	
Sound Attenuated Level 2	300	351	12395	46	115	71
	250	351	12395	53	127	71
	200	351	12395	59	138	71
Sound Attenuated Level 1	300	351	12395	46	115	75
	250	351	12395	53	127	74
	200	351	12395	59	138	74
Weather Protective	300	516	18222	49	120	82
	250	516	18222	55	131	82
	200	516	18222	60	140	82
Aluminum Sound Attenuated	300	351	12395	46	115	73
	250	351	12395	53	127	72
	200	351	12395	59	138	72

*Cooling system performance at sea level. Consult your Cat® dealer for site specific ambient and altitude capabilities.

Enclosure Sound Pressure Levels at Prime Ratings

Enclosure Type	Prime eKW	Cooling Air Flow Rate		Ambient Capability*		(dBA) @ 7m (23 ft) at 100% Load
		m³/s	cfm	°C	°F	
Sound Attenuated Level 2	275	351	12395	50	122	71
	225	351	12395	56	133	71
	180	351	12395	60	140	71
Sound Attenuated Level 1	275	351	12395	50	122	75
	225	351	12395	56	133	74
	180	351	12395	60	140	73
Weather Protective	275	516	18222	52	126	82
	225	516	18222	59	138	82
	180	516	18222	60	140	82
Aluminum Sound Attenuated	275	351	12395	46	115	72
	225	351	12395	56	133	72
	180	351	12395	60	140	72

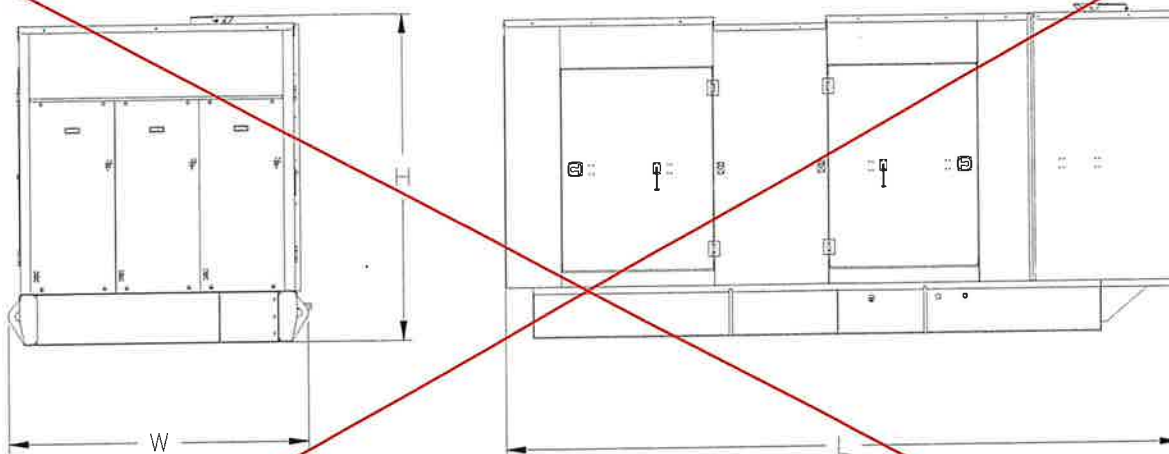
*Cooling system performance at sea level. Consult your Cat dealer for site specific ambient and altitude capabilities. The sound pressure level data shown in the tables above is quoted as free field and is for guidance only. Actual levels produced may vary according to site conditions.

Component Weights to Calculate Package Weight

				Steel Enclosures						Aluminum Enclosure	
Narrow Skid		Wide Skid		Weather Protective		Sound Attenuated Level 1		Sound Attenuated Level 2		Sound Attenuated	
kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb
219	483	468	1032	660	1455	1062	2341	1062	2341	629	1387

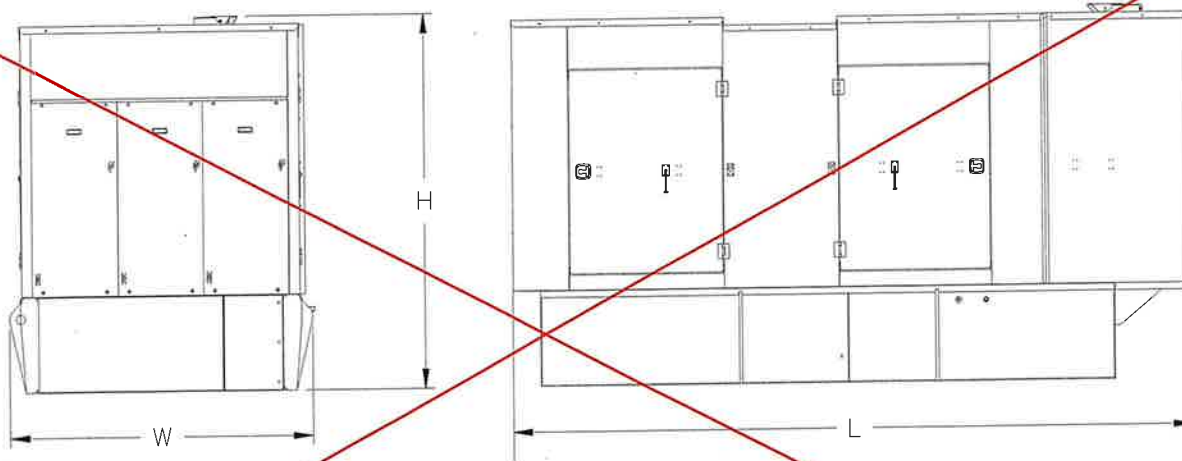
Enclosure Weights and Dimensions

Enclosure on Skid Base



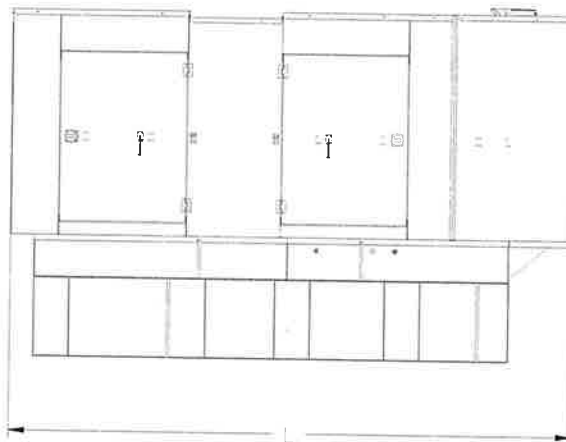
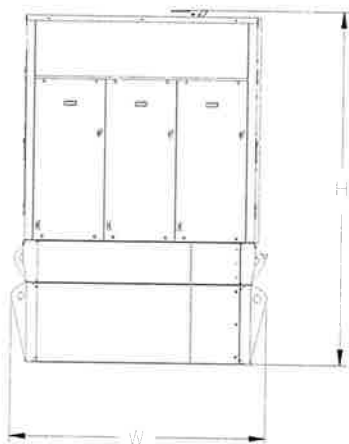
Enclosure Type	Length "L"		Width "W"		Height "H"	
	mm	in	mm	in	mm	in
Sound Attenuated	4515	177.8	2037	80.2	2196	86.5
Weather Protective	4035	158.9	2037	80.2	2142	84.3

Enclosure on a UL Listed 203 Gallon Integral Fuel Tank Base



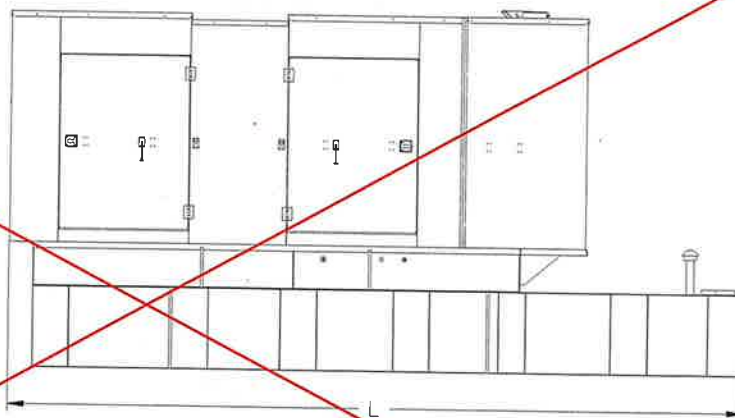
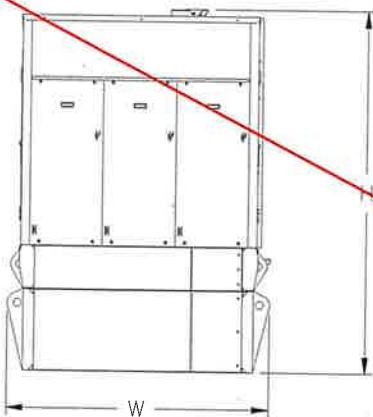
Enclosure Type	Length "L"		Width "W"		Height "H"	
	mm	in	mm	in	mm	in
Sound Attenuated	4515	177.8	2014	79.3	2492	98.1
Weather Protective	4035	158.9	2014	79.3	2438	96.0

Enclosure on a UL Listed 660 Gallon Sub-base Fuel Tank Base



Enclosure Type	Length "L"		Width "W"		Height "H"	
	mm	in	mm	in	mm	in
Sound Attenuated	4515	177.8	2056	80.9	2831	111.5
Weather Protective	4035	158.9	2056	80.9	2777	109.3

Enclosure on a UL Listed 1002 Gallon Sub-base Fuel Tank Base



Enclosure Type	Length "L"		Width "W"		Height "H"	
	mm	in	mm	in	mm	in
Sound Attenuated	5739	225.9	2056	80.9	2831	111.5
Weather Protective	5739	225.9	2056	80.9	2777	109.3

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LEHE0494-05 (06/20)

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APPENDIX E EMERGENCY EPISODE PLAN

**Emergency Episode Plan for
Apple Reno Facility
21505 Reno Technology Parkway
Sparks, Nevada**

Washoe County District Board of Health (WCDBOH) Regulation 050.001 requires that facilities with the potential to emit more than 50 tons per year (tpy) of a contaminant prepare and submit an Emergency Episode Plan (Plan). The Apple Reno Facility located at 21505 Reno Technology Parkway, Sparks, Nevada (the Facility) has the potential to emit over 50 tpy nitrogen oxides (NO_x), a known contributor to ozone formation. The purpose of this Plan is to provide guidelines to the Facility when emission curtailment measures should be initiated.

In the event that the WCDBOH notifies Apple that an air quality episode is occurring, as defined in DBOH Regulation 050.001 (Sections C and D) and summarized in Table 1 below, Apple may respond by delaying planned emergency generator use as follows:

- Stage 1 Episode (Alert Level) - The Facility may defer any planned operations other than Maintenance and Testing on its generators, any safety-critical maintenance, or testing required for regulatory compliance until the episode has ended, to the extent feasible.
- Stage 2 Episode (Warning Level) - In addition to the actions listed above, the Facility may defer any maintenance and/or testing of uncontrolled engines until the episode has ended, for single-day events, to the extent possible. For multi-day events, the Facility will assess required operations on a daily basis and defer maintenance and testing for as long as reasonably and safely possible. The Facility will not defer any safety-critical maintenance or testing required for regulatory compliance during a Stage 2 episode.
- Stage 3 Episode (Emergency Level) - In addition to the actions listed above, the Facility may also defer any maintenance and/or testing of engines equipped with controls until the episode has ended, to the extent possible. For multi-day events, the Facility will assess required operations on a daily basis and will defer maintenance and testing for as long as reasonably and safely possible. The Facility will not defer any safety-critical maintenance or testing required for regulatory compliance during a Stage 3 episode.

The curtailment of emergency generators described above is dependent on the type of operation that is required, the parties involved, and other factors deemed relevant by the Facility. Curtailment, if any, would be limited to planned maintenance and testing, and would not include any unplanned operation that may be required, such as critical equipment repairs or to respond to emergency power events. To facilitate the actions described in this Plan, the Facility may refer to the AirNow¹ website for information about air quality episodes in the area.

¹ AirNow website for Sparks Nevada: <https://www.airnow.gov/?city=Sparks&state=NV&country=USA>

Table 1: Episode Criteria Levels

Pollutant	Averaging Time	Stage 1 - Alert (AQI 100 to 199)	Stage 2 - Warning (AQI 200 to 299)	Stage 3 - Emergency (AQI 300 or more)
Carbon Monoxide	8 Hour	9.4 ppm	15.4 ppm	30.4 ppm
Particulates (PM ₁₀)	24 Hour	154 µg/m ³	354 µg/m ³	424 µg/m ³
Particulates (PM _{2.5})	24 Hour	65.4 µg/m ³ (above AQI 150)	150.4 µg/m ³	250.4 µg/m ³
Ozone	8 Hour	0.084 ppm	0.124 ppm	0.404 ppm
Notes and Abbreviations: AQI = Air Quality Index ppm = parts per million µg/m ³ = micrograms per cubic meter PM ₁₀ = particulate matter with diameter 10 micrometers or smaller PM _{2.5} = particulate matter with diameter 10 micrometers or smaller				

APPENDIX F ADDITIONAL NNPH DATA

Submitted Electronically

