DRAFT ENGINEERING EVALUATION

Facility ID No. 22746
Fox Television Stations, Inc
2 Jack London Square, Oakland, CA 94607
Application No. 714026

BACKGROUND

Fox Television Stations, Inc intends to use this generator to provide emergency electricity during power outages. This project is a replacement engine (S-2) for an existing engine (S-1) at this facility permitted under application 24623.

Fox Television Stations, Inc has applied for an Authority to Construct/Permit to Operate for the following equipment:

S-2 Emergency Backup Diesel engine – Generator
Make: Cummins, Model: QST30-G5 NR2, Family: RCEXL030.AAD; Year: 2024
1490 bhp; 9.85 MMBtu/hour (71.9 gal/hour); Tier 4 compliant
With integrated Cummins CA451 after treatment with DEF and DPF

S-2 is a Tier 4 compliant engine i.e., it meets the Environmental Protection Agency (US EPA) Tier 2 Off-road standards and is retrofitted by Cummins CA451 with a Particulate Filter (DPF) and Diesel Exhaust Fluid (DEF) to meet Tier 4 Final Off-road standards. The engine will burn commercially available California low sulfur diesel fuel. The sulfur content of the diesel fuel will not exceed 0.0015% by weight.

EMISSIONS

Table 1. Annual and Daily Emissions for S-2

Pollutant	Emission Factors (g/bhp-hour)	Abated Emission Factor (g/bhp-hour)	Max Daily Emissions (pounds/ day)	Annual Emissions (pounds/ year)	Annual Emissions (tons/ year)
NOx	4.23	0.39	30.72	64.06	0.032
POC	0.18	0.02	1.58	3.28	0.002
CO	0.52	1.04	81.92	170.82	0.085
**PM_{10}	010	0.02	1.58	3.28	0.002
$PM_{2.5}$	0.10	0.02	1.58	3.28	0.002
*SO_2	0.006	0.006	0.47	0.99	0.00049

Basis:

- Annual emissions: Reliability-related activity set at 50 hours
- For the purposes of quantifying emissions in this report, PM is assumed to be equal to PM_{10} and $PM_{2.5}$.
- Maximum daily emissions: 24-hour operation
- Emission factors as per engine family name and abated emission factors as provided by Cummins' specifications for this engine model aftertreatment retrofit.
- ** PM_{10} emission factor was obtained from engine family emissions were reduced by 85% after DPF as per CARB guidance. The 0 g/bhp-hr from the manufacturer is unverified by CARB. The emissions were limited to a minimum of 0.02g/bhp-hr. The engine family name listed, i.e. RCEXL030.AAD.
- *SO_2 emission factor from AP-42 Table 3.4-1 assuming the complete conversion of sulfur in fuel to SO2 and a maximum sulfur content of 15 ppm as shown below.

$$SO_2 Emission\ Factor\ (\frac{g\ SO_2}{bhp-hr}) = \frac{[\{8.09x10^{-3}\ x0.0015\}\ \frac{\cancel{lbs}}{bhp-hr}]}{454\ \frac{g}{\cancel{lbs}}} = 0.006\ \frac{g\ SO_2}{bhp-hr}$$

CUMULATIVE INCREASE

In accordance with the Air District's Policy for Calculating Potential to Emit of Emergency Generators, Table 2 summarizes the cumulative increase in criteria pollutant emissions that will result from this application 714026 assuming S-2 will operate for 50 hours/year for reliability related testing. Existing emissions from S-1 from application 24623 in 2012. S-2 will replace S-1 at this facility.

Table 2. Cumulative Emissions Increase, Post 4/5/91

Pollutant	Existing Emissions Post 4/5/91 (tons/year)		S-1 Emissions (tons/year)		S-2 Emissions (tons/year)		Cumulative Emissions* (tons/year)
NOx	0.364	-	0.364	+	0.032	=	0.032
POC	0.019	-	0.019	+	0.002	=	0.002
CO	0.044	-	0.044	+	0.085	=	0.085
PM_{10}	0.007	-	0.007	+	0.002	=	0.002
$PM_{2.5}$	0	-	0	+	0.002	=	0.002
SO_2	0.0004	-	0.0004	+	0.00049	=	0.00049

HEALTH RISK ASSESSMENT (HRA)

In accordance with the District's Policy for Calculating Potential to Emit for Emergency Generators, Table 3 summarizes the calculated emissions and the acute and chronic trigger levels for the Regulation 2-5 toxic air contaminants emitted by S-2, assuming they will operate for 50 hours/year for reliability related testing.

Table 3. Hourly and Annual Project TAC Emissions

Pollutant	Hourly	Annual	Acute Trigger (lbs/hr)	Chronic Trigger (lbs/yr)	Exceeds Acute Trigger?	Exceeds Chronic Trigger?
	lbs/hr	lbs/year				
Ammonia[1]	0.078	3.90	7.1	7700	NO	NO
Diesel PM	0.066	3.28	None	0.26	NO	YES

- [1]Ammonia emissions calculated based on the following and the ideal gas law:
  7,540 cfm @ 890-degree F
  - Ammonia slip concentration at 10 ppm.
  - $Ammonia, E_{NH_3} = \left(\frac{10}{1.0E{+}06\ scf\ exhaust}\right)(7{,}540\ scfm\ exhaust)\left(\frac{1\ lb{-}mol}{(890{+}458.67){*}0.7302}\right)\left(17\frac{lb}{lb{-}mol}\right)\left(60\frac{minutes}{hour}\right)$
    $= 0.078$ pounds per hour x 50 hours/year
    = 3.9 pounds per year

It can be seen from Table 3 that the ammonia emissions, stemming from potential ammonia slip from the selective catalytic reduction systems, do not exceed the acute and/or chronic trigger levels in Regulation 2, Rule 5. The diesel exhaust particulate matter emissions from S-2, estimated at 3.28 pounds/year, assuming the engine operates for 50 hours/year, is greater than the Regulation 2, Rule 5 chronic toxic trigger level of 0.26 pounds/year. Hence an HRA was required.

HRA Results

This analysis estimates the incremental health risk resulting from toxic air contaminant (TAC) emissions from non-emergency operation of standby generator diesel engines at this facility. Results from this HRA indicate that the maximum project cancer risk is estimated at **0.21 in a million**, and the maximum project chronic hazard index is estimated at **0.000065** while the project acute HI is estimated at **0.00085**. See HRA Report for more details.

Table 4. Risk Screening Results

Maximally Exposed Receptor	Maximum Cancer Risk	Maximum Chronic Hazard Index
Residential	0.21 chances in a million	0.000059
Off-Site Worker	0.084 chances in a million	0.000067

BACT for toxics (TBACT)

In accordance with the District's Regulation 2-5-301, this source does not require TBACT because the estimated source cancer risk is less than 1.0 in a million. BACT and TBACT determinations for compression ignition engines with a rated capacity greater than 1,000 bhp are described in BAAQMD BACT/TBACT Workbook for IC Engines – Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump, Document #96.1.5, Revision 0, dated 12/22/2020 (see Attachment 1).

Project Risk Limits

Since the proposed engine, operating at 50 hours/year for reliability related testing, does not require TBACT, and the estimated project cancer risk does not exceed 6.0 in a million and the chronic hazard index does not exceed 1.0, this project complies with the District's Regulation 2-5-302 project risk requirements. No additional operating hour restrictions were necessary for this project.

BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

Per Regulation 2-2-301, an Authority to Construct and/or Permit to Operate for a new source shall require BACT to control emissions of a District BACT pollutant as defined in Regulation 2-2-210 if the source will have the potential to emit that pollutant in an amount of 10.0 or more pounds on any day, as defined in Regulation 2-2-301.1. Per Table 1, S-2 triggers BACT for NOx and POC.

BACT for S-2 is presented in the current BAAQMD BACT/TBACT Workbook for IC Engine – Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump, for engines greater than or equal to 1,000 bhp: *Document #96.1.5, Revision 0. dated 12/22/2020*. For NOx, POC, and CO, BACT (2) is 0.5 g/bhp-hour, 0.14 g/bhp-hour, and 2.6 g/bhp-hour, respectively. The more restrictive BACT (1) standards are not applicable to S-1 because it will be limited to operate as an emergency standby engine.

S-1 satisfies the current BACT (2) standards for NOx and POC as shown in Table 4.

Table 4. BACT check

Pollutant	Emission Factor	BACT (2) Standard
NOx	0.39 g/bhp-hour	0.50 g/bhp-hour
POC	0.02 g/bhp-hour	0.14 g/bhp-hour
CO	1.04 g/bhp-hour	2.6 g/bhp-hour

The proposed permit conditions will require Fox Television Stations, Inc to perform Air District approved source testing to verify initial and subsequent compliance with the NOx/POC emission rate listed in Table 1. S-2 is a Tier 4 compliant engine (retrofitted Tier 2 engine) with NOx emission rate close to the BACT standard of 0.50 g/bhp-hour.

OFFSETS

In accordance with the District's Policy for Calculating Potential to Emit (PTE) of Emergency Generators, the Potential to Emit for S-2, the subject of this application, was estimated assuming 150 hours of operation/year as shown in Table 5. The existing PTE is also assumed to be at 150 hours of operation for S-1.

Table 5. Potential to Emit for FID 22746

Pollutant	Existing Annual Emissions (tons/year)		S-1 Emissions (tons/year)		S-2 Emissions (tons/year)		Current Facility Annual Emissions* (tons/year)	Offset Requirement (TPY)	Offset Required
NOx	1.092	-	1.092	+	0.096	=	0.096	>10	N
POC	0.057	-	0.057	+	0.005	=	0.005	>10	N
CO	0.132	-	0.132	+	0.256	=	0.256	-	N
PM_{10}	0.021	-	0.021	+	0.005	=	0.005	≥100	N
$PM_{2.5}$	0.000	-	0.000	+	0.005	=	0.005		
SO_2	0.0012	-	0.0012	+	0.0013	=	0.0013	≥100	N

**Annual emissions: Reliability-related activity of 50 hours and emergency operation of 100 hours for S-2.*

Since the facility's potential to emit is below the offsets trigger levels specified in Regulation 2-2, offsets are not required.

STATEMENT OF COMPLIANCE

The owner/operator is expected to comply with all applicable requirements. Key requirements are listed below:

Regulation 6-1 (*Particulate Matter – General Requirements*)

S-2 is subject to Regulation 6, Rule 1. Opacity and visible emissions from S-2 are limited by Regulation 6-1-303.2 (engine used solely as a standby source of motive power) to Ringelmann 2.

Regulation 6-1-305 prohibits emission of particles from any operation in sufficient number to cause annoyance to any other person where the particles are large enough to be visible as individual particles at the emission point, or of such size and nature as to be visible individually as incandescent particles. S-2 is not expected to produce visible emissions or fallout in violation of this regulation and will be assumed to be in compliance with Regulation 6-1-305.

Regulation 6-1-310 limits emissions from any source of particulate matter in excess of 343 mg per dscm (0.15 gr. per dscf) of exhaust gas volume. S-2 is expected to comply with this requirement.

S-2's compliance with Regulation 6, Rule 1 will be confirmed by the District's Compliance & Enforcement staff during their routine inspections.

Regulation 9-1-301 (*Limitations on Ground Level Concentrations*)

S-2 is subject to and is expected to comply with the applicable SO_2 limitations in Regulation 9, Rule 1 ("Inorganic Gaseous Pollutants – Sulfur Dioxide") because the sulfur content of the diesel fuel is 15 ppm.

Regulation 9-8 (*Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines*)

S-2 will be operated as an emergency standby engine and therefore is not subject to the emission rate limits in Regulation 9, Rule 8 ("Inorganic Gaseous Pollutants – NOx and CO from Stationary Internal Combustion Engines"). S-2 is exempt from the requirements of Sections 9-8-301 through 305, 501, and 503 per Reg. 9-8-110.5 (Emergency Standby Engines). S-2 is subject to and expected to comply with 9-8-330.3 (Emergency Standby Engines, Hours of Operation) since non-emergency hours of operation will be limited in the permit conditions to 50 hours per year. S-2 is also subject to and expected to comply with monitoring and record keeping requirements of Regulations 9-8-502.1 and 9-8-530, which are incorporated into the proposed permit conditions.

Airborne Toxic Control Measure (ATCM) for Emergency Standby Diesel-Fueled CI Engines (>50 bhp)

The Air District is charged with enforcing the requirements of California's Air Toxic Control Measure for Stationary Compression Ignition Engines in Title 17, California Code of Regulations, Sections 93115 *et seq*. (ATCM).

Subsection 93115.6(a)(3)(A)(1)(a) requires S-2 to meet the emissions standards specified in Table 6 below. The generator will have emission rates that comply with these requirements as indicated in Table 6.

Table 6. ATCM Emission Standards for engines >750hp (g/bhp-hour)

Pollutant	ATCM Emission Standards
PM	0.15
NMHC + NO_x	4.8
CO	2.6

Subsection 93115.6(a)(3)(A)(1)(b) requires that the generator be certified to meet EPA's Tier 2 emission standards as required under the NSPS discussed below. The generator is certified to meet EPA Tier 2 standards and will go beyond Tier 2 with the Cummins' CA451 aftertreatment that uses Diesel Exhaust Fluid (DEF) and Diesel Particulate Filter (DPF) to achieve Tier 4 standards.

Subsection 93115.6(a)(3)(A)(1)(c) limits the non-emergency operation of the engine to 50 hours/year for maintenance and testing. Permit Conditions 100072 and 100073 will limit non-emergency operation of S-2 to 50 hours/year and hence will comply with this subsection.

California Environmental Quality Act (*CEQA*)

Pursuant to Regulation 2-1-311, an application for a proposed new or modified source will be classified as ministerial and will accordingly be exempt from the California Environmental Quality Act (CEQA) requirement of Regulation 2-1-310 if the District's engineering evaluation and basis for approval or denial of the permit application for the project is limited to the criteria set forth in Regulation 2-1-428 and to the specific procedures, fixed standards, and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook. This project triggers Best Available Control Technology (BACT) for NOx and POC but does not require BACT for toxics (TBACT), therefore the permit approval is not a ministerial action.

This project, however, is categorically exempt from CEQA as per CEQA Article 18 section 15301 and section 15303 since the project is a new and small installation at an existing facility involving negligible or no expansion of use. In fact, this engine, S-2 is replacing an existing engine S-1 with a similar heat rating of about 10.7 MMBTU/hr and will be used for the same purpose.

The state CEQA exemptions were written primarily for land use planners and this project does not involve additional floorspace at the facility once S-2 is installed. As required under Regulation 2-1-426.1, Form appendix H has also been completed and provided to the District by the applicant. The project satisfies the CEQA requirements.

New Source Performance Standards (*NSPS*)

40 CFR 60, Subpart IIII (NSPS IIII), Standards of Performance for Stationary Compression Ignition Internal Combustion Engines applies to non-fire pump engines such as S-2 that are manufactured after April 1, 2006. Per §60.4205(b), S-2 is subject to the Tier 2 emissions standards in 40 CFR 1039, Appendix I for all pollutants.

Applicable emission standards found in Appendix I of 40 CFR 1039 that apply to S-2 are: NMHC + NOx = 6.4 gram/kW-hour (4.77 gram/bhp-hour); CO = 3.5 gram/kW-hour (2.61 gram/bhp-hour); and PM = 0.20 gram/kW-hour (0.15 gram/bhp-hour).

The smoke opacity standards in 40 CFR 89.113 were migrated by the EPA into 40 CFR 1039. Per §1039.105 (a) (3), S-2 is not subject to the above standards since its emissions are certified to be compliant a PM emission standard lower than 0.07gram /Kw-hr (0.052 gram/bhp-hr). Instead, S-2 is subject to the opacity standards in Regulation 6, Rule 1, which was discussed above.

Per §60.4207(b), S-2 is subject to the following diesel fuel requirements in 40 CFR 80.510(c):

- Sulfur content ≤ 15 ppm
- Minimum Cetane index = 40 or maximum aromatic content of 35% by volume

Diesel fuel sold in California meets the above standards. Therefore, S-2 will comply with the diesel fuel requirements in NSPS IIII.

National Emissions Standards for Hazardous Air Pollutants (*NESHAP*)

S-2 is subject to 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines because the engine will be constructed (~installed) on/after June 12, 2006. Per §63.6590(c)(1), "new" sources such as S-2 are required to meet the requirements in Subpart ZZZZ by meeting the requirements in NSPS IIII. As previously discussed, S-2 complies with NSPS IIII and therefore, will comply with MACT ZZZZ as well.

Prevention of Significant Deterioration (*PSD*)

This application is not part of a PSD project as defined in Regulation 2-2. Therefore, PSD does not apply to this application.

Public Notice, Schools & Over-Burdened Communities (Regulation 2-1-412)

This project is over 1,000 feet from the nearest K-12 school, therefore Regulation 2-1-412(i) does not apply. However, this project is located within an overburdened community and an HRA was required because PM emissions exceed the trigger limit set forth in Table 2-5-1 of Regulation 2-5. Therefore, this project is subject to the public notification requirements of Regulation 2-1-412(ii).

A 30-day public notice will be sent to all residents and businesses within 1,000 feet of the facility.

PERMIT CONDITIONS

Permit Condition #100072

1. The owner or operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, state or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, state or Federal emission limits is not limited. [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

2. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.
   [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

3. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location and made immediately available to the District staff upon request.
   a. Hours of operation for reliability-related activities (maintenance and testing).
   b. Hours of operation for emission testing to show compliance with emission limits.
   c. Hours of operation (emergency).

d. I For each emergency, the nature of the emergency condition. Fuel usage for each engine(s).
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

4. At School and Near-School Operation: If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall apply: The owner or operator shall not operate each stationary emergency standby diesel-fueled engine for non-emergency use, including maintenance and testing, during the following periods:
   a. Whenever there is a school sponsored activity (if the engine is located on school grounds)
   b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session.

   'School' or 'School Grounds' means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s). 'School' or 'School Grounds' includes any building or structure, playground, athletic field, or other areas of school property but does not include unimproved school property.
   [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

Permit Condition #100073

The owner/operator shall not exceed the following limits per year per engine for reliability-related activities:

- 50 Hours of Diesel fuel (Diesel fuel)
  [Basis: Cumulative Increase; Regulation 2-5; Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

Permit Condition # 100509

Tier 2 Engines, equipped with add-on DEF and DPF; ST for NOx/CO & PM.

1. The owner/operator shall ensure the engine is abated at all times of operation by a Diesel Exhaust Fluid (DEF) system and Diesel Particulate Filter (DPF) equipped with a backpressure monitor or other approved Diesel Exhaust Particulate Matter Abatement System. The engine, DEF System, and DPF with backpressure monitor or other approved system shall be installed, maintained, and operated in accordance with the manufacturer specifications and/or best modern practices. [Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR1039.101, BACT, TBACT]

2. The owner/operator shall take all corrective actions recommended by the manufacturer in response to backpressure monitor notifications. [Basis:

Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR 1039.101, BACT, TBACT]

3. The owner/operator shall ensure urea concentration, delivery rate and tank levels are maintained as specified by the manufacturer to ensure proper function of aftertreatment system. [Basis: Cumulative Increase, Title 17 CCR Section 93115.6(a)(3), 40 CFR 1039.101, BACT, TBACT]

4. The owner/operator shall ensure engine emissions do not exceed an ammonia (NH_3) slip of 10 ppmv, dry @15% O2 from the DEF system. If deemed necessary to demonstrate compliance with Regulation 2, Rule 5, the Air District may require A source test to determine compliance with this emission limit. [Basis: Regulation 2, Rule 5]

5. The owner/operator shall ensure engine emissions do not exceed the following limits:
   NOx: 0.50 g/bhp-hour
   PM: 0.02 g/bhp-hour
   CO: 2.60 g/bhp-hour
   [Basis: BACT and Cumulative Increase]

6. To demonstrate compliance with Part 5, the owner/operator shall conduct an initial Air District-approved source test on the engine within 60 days of startup and once every three years thereafter at the normal or expected load during emergency operation using Air District approved source test methods. The owner/operator shall document urea usage (gallon per minute) and average kW during all tests, preferable as digital records. The owner/operator shall submit the source test results to the Air District's Source Test Section no later than 60 days after source test completion.
   [Basis: BACT and Cumulative Increase]

7. The owner/operator shall comply with all applicable testing, sampling port location and safe access requirements as specified in Volume IV of the Air District's Manual of Procedures. The owner/operator shall notify the Air District's Source Test Section, in writing, of the source test protocols, sampling port locations, layout, access and projected test dates at least 30 days prior to testing. The following test methods shall be used for each pollutant:
   PM (filterable) EPA Method 5 or Air District- approved equivalent
   NOx EPA Method 7E or Air District- approved Equivalent
   CO EPA Method 10 or Air District- approved equivalent
   [Basis: Regulation 2-1-403]

8. To determine compliance with the above conditions, the owner/operator shall maintain the following records in a Air District- approved log and shall make these records available to Air District staff upon request. All records shall be retained for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or Synthetic Minor Operating Permit). These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable Air District or state regulations.
   a. Source Test Notifications
   b. All source test reports
   c. Engine serial number and source number for each source test
   d. Engine load percentage
   e. Engine, DEF, and DPF maintenance records
   f. DEF system owner's manual or manufacturer's specifications
   g. DPF owner's manual or manufacturer's specifications
   h. All backpressure monitor notifications and corrective actions
   i. DEF urea injection rate (gpm)
   j. Urea concentration

   [Basis: BACT, Cumulative Increase, Recordkeeping]

End of Conditions

RECOMMENDATION

The District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state and federal air quality-related regulations. The preliminary recommendation is to issue an Authority to Construct for the equipment listed below. However, the proposed source will be located within an Overburdened Community which triggers the public notification requirements of District Regulation 2-1-412. After the comments are received and reviewed, the District will make a final determination on the permit.

I recommend that the District initiate a public notice and consider any comments received prior to taking any final action on issuance of an Authority to Construct for the following:

S-2 Emergency Backup Diesel engine – Generator
Make: Cummins, Model: QST30-G5 NR2, Family: RCEXL030.AAD; Year: 2024
1490 bhp; 9.85 MMBtu/hour (71.9 gal/hour); Tier 4 compliant
With integrated Cummins CA451 after treatment with DEF and DPF

Permit Condition No 100509, 100072 and 100073

_____ Date: _____

Mark Kiffe
AQ Engineer

Attachment 1

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guideline

Source Category

Source:	**IC Engine-Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump**	**Revision:**	**0**
		Document #:	**96.1.5**
Class:	**≥ 1000 BHP Output**	**Date:**	**12/22/2020***

Determination

Pollutant	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice 3. TBACT	TYPICAL TECHNOLOGY
POC (NMHC)	1. n/s[a] 2. 0.14 g/bhp-hr[b]	1. n/s[a] 2. Any engine certified or verified to achieve the applicable standard
NOx	1. n/s[a] 2. 0.5 g/bhp-hr[b]	1. n/s[a] 2. Any engine certified or verified to achieve the applicable standard
SO_2	1. n/s[a] 2. Fuel sulfur content not to exceed 0.0015% (wt) or 15 ppm (wt)	1. n/s[a] 2. CARB Diesel Fuel (Ultra Low Sulfur Diesel)
CO	1. n/s[a] 2. 2.6 g/bhp-hr[b]	1. n/s[a] 2. Any engine certified or verified to achieve the applicable standard
PM_{10}	1. n/s[a] 2. 0.02 g/bhp-hr[b] 3. 0.02 g/bhp-hr	1. n/s[a] 2. Any engine or technology demonstrated, certified or verified to achieve the applicable standard 3. Any engine or technology demonstrated, certified or verified to achieve the applicable standard
NPOC	1. n/s 2. n/s	1. n/s 2. n/s

* Applies to open permit applications with a complete date on or after 1/1/2020.

References

a. Cost effectiveness analysis must be based on lesser of 50 hr/yr or non-emergency operation as limited by District health risk screen analysis.

b. 1. BAAQMD Application 27020 San Jose/Santa Clara Water Pollution Control
2. BAAQMD Application 25115 Sutro Tower, Inc.
3. Microsoft MWH Data Center, Quincy, Washington
Tier 4-Compliant (Tier 2 engines abated by catalyzed diesel particulate filter and selective catalytic reduction)
https://ecology.wa.gov/Air-Climate/Air-quality/Data-Centers
4. Comments by the California Air Resources Board on the California Energy Commission's Proposed Decision for the Proposed Sequoia Data Center project (19-SPPE-03), Attachment 2: Tier 4 Diesel Emergency Generator Engines