

**ENGINEERING EVALUATION  
NEW CINGULAR WIRELESS, LLC, DBA AT&T MOBILITY  
APPLICATION 26657  
PLANT 22708**

**BACKGROUND**

The applicant is applying for an Authority to Construct for a new Emergency Stand-By Diesel Power Generator Set. The applicant is requesting an Authority to Construct for the following equipment:

**S-1 Emergency Stand-By Diesel Generator Set; Kukje Machinery Model D3400-T, 85 BHP**

The equipment will be located at 100 Main Gate Road, Novato, CA 94949.

**CRITERIA POLLUTANT EMISSIONS CALCULATIONS**

The proposed engine has not been certified by the California Air Resources Board. Emission factors based on the manufacturer's ISO 8178-D2 5-mode weighted cycle testing data were used for all criteria emissions except SO<sub>2</sub>. The emission factors used are as follows:

Source(s)	S-1
EPA Certificate Number	EKMCL3.41D43-004
PM <sub>10</sub>	0.112
POC	0.159
NO <sub>x</sub>	3.025
SO <sub>2</sub> <sup>1</sup>	0.005
CO	2.617

The applicant requested operation at 50 hours per year, which is consistent with the California Air Resources Board Air Toxic Control Measure for Stationary Compression Ignition Engines, 17 CFR 93115, (May 19, 2011). At a 50 hours per year testing and maintenance limitation, criteria emissions are as follows:

**TABLE 1 – CRITERIA POLLUTANT EMISSIONS**

SOURCE	BHP	PM10 G/BHP-HR	POC G/BHP-HR	NOX G/BHP-HR	SO2 G/BHP-HR	CO G/BHP-HR
S-1	85	0.112	0.159	3.025	0.005	2.617
BACT (Tier 3 ATCM limits)		0.15	0.18	3.33	NA	3.70
Meets BACT?		YES	YES	YES	NA	YES
TOTAL G/HR		10	14	257	0.42	222
TOTAL LB/HR		0.02	0.03	0.57	0.001	0.49
TOTAL LB/DAY		0.50	0.72	13.60	0.022	11.77
TOTAL LB/50 HR		1.05	1.5	28.3	0.046	24.5
TOTAL TPY		0.001	0.001	0.014	0.000	0.012

<sup>1</sup> SO<sub>2</sub> emission factor calculated from manufacturer's fuel consumption rate for specific engine  
 $SO_2 \text{ g/bhp-hr} = (4.32 \text{ gal/hr}) * (7.1 \text{ lb/gal}) * (0.0015 \text{ lb S/100 lb}) * (64.06 \text{ lb } SO_2/\text{lb mol}/32.06 \text{ lb S/lb mol}) * (453.6 \text{ g/lb}) * (1/85 \text{ BHP}) = 0.005 \text{ g/bhp/hr}$

This engine triggers BACT for NO<sub>x</sub> and CO, and triggers TBACT for PM<sub>10</sub>.

### **OLD SOURCES: EMISSION REDUCTIONS**

The applicant is not planning to shut down any existing sources on start-up of the new engine, therefore no contemporaneous on-site emission reductions were calculated for this application.

### **OFFSETS**

The total Potential to Emit for the facility after start-up of the new engine will be less than 100 TPY for each criteria pollutant and less than 10 TPY for each ozone precursor (NO<sub>x</sub> and POC).

Since the facility does not have the potential to emit more than 10 tons per year of nitrogen oxide or precursor organic compounds emissions on a pollutant-specific basis, the facility is not subject to NO<sub>x</sub> or POC offsets under Regulation 2-2-302.

Since the facility will not have the potential to emit more than 100 tons per year of any criteria pollutant, the facility is not a "Major Facility" as defined in Regulation 2-1-203, and is not subject to PM<sub>10</sub> or SO<sub>2</sub> offsets under Regulation 2-2-303.

### **CUMULATIVE EMISSIONS INCREASE**

Changes to the cumulative emissions inventory will be as follows:

**TABLE 2 - CUMULATIVE EMISSION INCREASE INVENTORY**

<b>Pollutant</b>	<b>Current Emissions (TPY)</b>	<b>Application Emissions Increase (TPY)</b>	<b>Onsite Emissions Reductions Credits (TPY)</b>	<b>Offsets From DSFB (TPY)</b>	<b>Final Emissions (TPY)</b>
<b>PM<sub>10</sub></b>	<b>0.000</b>	<b>0.001</b>	<b>0.000</b>	<b>0.000</b>	<b>0.001</b>
<b>POC</b>	<b>0.000</b>	<b>0.001</b>	<b>0.000</b>	<b>0.000</b>	<b>0.001</b>
<b>NO<sub>x</sub></b>	<b>0.000</b>	<b>0.014</b>	<b>0.000</b>	<b>0.000</b>	<b>0.014</b>
<b>SO<sub>2</sub></b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
<b>CO</b>	<b>0.000</b>	<b>0.012</b>	<b>0.000</b>	<b>0.000</b>	<b>0.012</b>

### **TOXIC RISK MODELING**

The District uses PM<sub>10</sub> emissions as a proxy for toxic emission exposure to surrounding residential and industrial populations. A PM<sub>10</sub> emissions level of 0.34 lbs/year automatically triggers a health risk screening assessment pursuant to Regulation 2, Rule 5. At 50 hours per year maximum permitted operation, the application exceeds a PM<sub>10</sub> emission level of 0.34 lbs/year and so requires that a health risk screening assessment be performed.

A streamlined health risk screening analysis was performed for this application. The analysis estimates the worst case incremental health risk resulting from toxic air contaminant (TAC) emissions from operation of the proposed engine based on default meteorological and terrain data. Results from the streamlined health risk screening analysis indicate that the maximum cancer risk is estimated at 9.7 in a million, and the maximum chronic hazard index is estimated at 0.0034.

The maximum calculated carcinogenic risk is below 10 in a million and the maximum calculated chronic hazard index is less than 1.0, and so the engine as proposed is in compliance with TBACT and project risk requirements as set out in Regulation 2, Rule 5.

### **BACT/TBACT REVIEW**

Under Regulation 2, Rule 2, any new source which results in an increase of more than 10 lbs per day of any criteria pollutant must be evaluated for adherence to BACT and TBACT control technologies. This engine triggers BACT for NO<sub>x</sub> and CO. For compression ignition I.C. engines with firing rates greater than 50 BHP, this means the engine must be fired on ultra-low sulfur diesel fuel (fuel oil with less than 0.0015% by weight sulfur content). BACT/TBACT also requires that the engine meet current Tier standards for POC, NO<sub>x</sub>, and CO emissions, and meet a PM<sub>10</sub> emission limitation of no more than 0.15 g/bhp-hr. The proposed engine complies with the applicable Tier standards and meets BACT/TBACT.

### **PUBLIC NOTIFICATION REQUIREMENTS**

The proposed engine is located within 1,000 feet of one or more schools providing educational services to students enrolled in kindergarten or grades 1 through 12. Under §42301.6 of the California Health and Safety Code and District Regulation 2-1-412, notification of the proposed new source must be mailed to the parents or guardians of all children enrolled in any school within one-quarter mile of the sources, and to each address within a radius of 1,000 feet of the sources, in order to give these parties an opportunity to provide public comment on the proposed actions. All comments received within 30 days of the publication of this notice will be reviewed and considered in the final evaluation and approval or denial of the application.

### **CEQA REVIEW**

This application is considered to be ministerial under Regulation 2-1-311, and is therefore not subject to CEQA review.

### **PSD REVIEW**

Since the facility will not have the potential to emit more than 100 tons per year of any criteria pollutant, the facility is not a "Major Facility" as defined in Regulation 2-1-203, and is not subject to PSD permitting requirements under Regulation 2-2-304.

### **TITLE V REVIEW**

Since the facility will not have the potential to emit more than 100 tons per year of any criteria pollutant, the facility is not a "Major Facility" as defined in Regulation 2-1-203, and is not subject to Title V permitting requirements under Regulation 2-6-301.

### **COMPLIANCE DETERMINATION**

This engine is covered under ministerial exemption, Chapter 2.3.1 of the BAAQMD Permit Handbook. CEQA is not triggered for small engines under this provision.

The engine is governed by and will comply with the **California Air Resources Board's Air Toxic Control Measure for Stationary Compression Ignition Engines, CCR Title 17, Section 93115**. The explicit annual equipment usage limitation of 50 hours per year except for operations under emergency conditions will be included as part of the permit conditions.

The engine is governed by and will comply with the provisions of **Regulation 2, Rule 5, “New Source Review for Toxic Air Contaminants.”**

The engine is exempt from the emission limitations of **Regulation 9, Rule 8-305, 8-501, and 8-503**, since it meet the provisions of **Regulation 9, Rule 8-110.5, "Exemptions: Emergency Standby Engines."**

The engine is required to meet NSPS requirements as set out in 40 CFR Part 60, Subpart IIIIG, **Standards of Performance for Stationary Compression-Ignition Internal Combustion Engines, Set G, 2007 and Later Model Non-Fire Pump Emergency Less than 10L per Cylinder**, since the rated engine power is greater than 25 BHP. Under 40 CFR 60.4211(c), the applicant may show compliance by buying and operating engines certified to the emission standards for new non-road CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 (PM<sub>10</sub> emissions less than 0.2 g/kW-hr, NMHC+NO<sub>x</sub> emissions less than 6.4 g/kW-hr, and CO emissions less than 3.5 g/kW-hr). The engine proposed in this application is certified to these emission levels.

Visible emissions will be required to meet Ringelmann 2 limitation per **Regulation 6-303.1**.

Sulfur emissions will be controlled by the requirement that any fuel used in the engine meet California Clean Air fuel content of 0.0015% bw sulfur, as required by the **California Air Resources Board’s Air Toxic Control Measure for Stationary Compression Ignition Engines, CCR Title 17, Section 93115**.

**CONDITIONS**

Condition #22850, setting out the operating conditions and recordkeeping requirements for operations at Source S-1 shall be made part of the source's authority to construct/permit to operate.

**RECOMMENDATION**

The proposed 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 1000 feet of a school, which triggers the public notification requirements of Regulation 2-1-412.

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

**S-1 Emergency Stand-By Diesel Generator Set; Kukje Machinery Model D3400-T, 85 BHP**

subject to Condition #22850.

By \_\_\_\_\_ Date \_\_\_\_\_  
*Catherine S. Fortney*

1. The owner/operator shall not exceed 50 hours per year per engine for reliability-related testing.  
[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(3) or (e)(2)(B)(3)]
2. The owner/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: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(3) or (e)(2)(B)(3)]
3. 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: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection(e)(4)(G)(1)]
4. 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. For each emergency, the nature of the emergency condition.
  - e. Fuel usage for each engine(s).  
[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(4)(I), (or, Regulation 2-6-501)]
5. 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/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, athletic field, or other areas of school property but does not include unimproved school property.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(1)] or (e)(2)(B)(2)]