

DOCKETED

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| Docket Number: | 86-AFC-01C |
| Project Title: | Compliance - Application for Certification for the (ACE) Argus Cogeneration Expansion AFC |
| TN #: | 220956 |
| Document Title: | Mojave Desert Air Quality Management District - Engineering Evaluation |
| Description: | N/A |
| Filer: | Mineka Foggie |
| Organization: | ACE Cogeneration Company |
| Submitter Role: | Applicant |
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MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

14306 Park Avenue, Victorville, CA 92392-2310
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ENGINEERING EVALUATION

DIESEL IC ENGINE, GENERATOR

PERMIT: B012765

APPLICATION: MD1000002039

PREPARED BY : Samuel Oktay *on 05/16/2017*

COMPANY : ACE Cogeneration Company (500)
 12801 S Mariposa Street
 Trona, CA 93562

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MAILING ADDRESS : ACE Cogeneration Company (1051)
 12801 S Mariposa Street
 Trona, CA 93562

EQUIPMENT LOCATION : ACE Cogeneration Company
 12801 S Mariposa Street
 Trona, CA 93562

NATURE OF BUSINESS : Previously a Electric & Steam Generation facility; currently in the process of dismantling and selling assets

PROPOSAL : Install and operate a new stationary 168 Bhp Tier 4i Diesel Engine powering a 125 kW Prime Generator to power the facility while they effect dismantling operations. The engine is not located near any sensitive receptors. The emissions associated with this engine will have a HARP Prioritization Score of 3.75 based on the engine operating at 24 hrs/day, 7days/wk, 52 Wks/yr for a total of 8,760 hours per year. Risk is considered "Intermediate Priority" pursuant to Rule 1320, therefore a Health Risk Assessment is not required.

EQUIPMENT DESCRIPTION : A certified Tier 4i diesel engine, EPA Family EJDXL06.8210, Engine Code 4045HFG93A, EPA Certificate # EJDXL06.8210-020, CARB Executive Order EO# U-R-004-0487, 2014 model year with factory installed emission control devices/systems: Electronic/Electric EGR - Cooled, Non-standard Non-After Treatment Device installed, Electronic Control, Smoke Puff Limiter, After Treatment Devices: PTOX-DFP-Active, Diesel Oxidation Catalyst installed.

One John Deere, Diesel fired internal combustion engine Model No. 4045HFG93A and Serial No. PE4045R080158, Turbo Charged, After Cooled, Diesel Particulate Filter, Selective Catalytic Reduction, producing 168 bhp with 4 cylinders at 1800 rpm while consuming a maximum of 5 gal/hr. This equipment powers a John Deere Generator Model No. DB-1381J3 and Serial No. V021452, rated at 125KVA.

EMISSIONS RATES

| Emission Type | Est. Max Load | Unit |
|---------------|---------------|-----------|
| CO | 0.075 | gm/bhp-hr |
| GHG | 286.050 | gm/bhp-hr |
| NOx | 2.312 | gm/bhp-hr |
| PM10 | 0.007 | gm/bhp-hr |

| Emission Type | Est. Max Load | Unit |
|---------------|---------------|-----------|
| PM2.5 | 0.007 | gm/bhp-hr |
| SOx | 0.003 | gm/bhp-hr |
| VOC | 0.0001 | gm/bhp-hr |

OPERATION DESCRIPTION : Engine will provide primary power to the site's rotary kiln, the main office and support systems such as air conditioning/cooling, lighting, etc. as grid-supplied power is currently not available at this section of the facility.

OPERATING SCHEDULE : 24 hours/day, 365 days/year

PROCESS RATE : Maximum fuel consumption is 5.0 gallons of ULSD per hour. Engine operation is not limited by the NSPS, the Stationary Diesel ATCM, or by permit condition.

EXPECTED EMISSIONS:

Emissions data was obtained from CARBs Off-Road Certification Database (U-R-004-0487). All quantities listed are in POUNDS:

| Pollutant | 24 Hrs | 1 Year |
|-----------|--------|--------|
| NOX | 20 | 7477 |
| VOC | 0 | 0 |
| SOX | 0 | 9 |
| CO | 1 | 241 |
| PM10 | 0 | 24 |
| PM2.5 | 0 | 24 |

The 24 Hrs values are for continuous running for the entire period. The 1 Year values are for the maximum possible 8,760 hours of constant; See attached spreadsheet also

APPLICABLE RULES:

- NSPS IIII - Stationary Comp Ignition IC Engines - 60 4I
- ATCM - Stationary Compression Ignition Engines - 93115
- Particulate Matter - Concentration Rule - M 0404
- Sulfur Content of Fuels - M 0431
- Requirements (NSR) Rule - M 1303
- NSR for Toxic Air Contaminants Rule - M 1320

RECOMMENDATION:

Approve this permit application as requested and as restricted by the proposed permit conditions.

CONDITIONS:

1. This certified stationary compression-ignited internal combustion engine and its associated emission control systems shall be installed, operated and maintained in strict accordance with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of air contaminants. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application for this permit. [40 CFR 60.4211(a)]

2.

This engine shall not be operated unless all of the following emission control systems are properly functioning:

- a. Diesel Oxidation Catalyst
- b. Electronic Control Module
- c. Exhaust Gas Recirculation System

Furthermore, no changes shall be made to any of the above systems unless done so by a factory certified technician. [40 CFR 60.4211, MDAQMD Rule 1302]

3. This equipment shall only be fired on diesel fuel that meets the following requirements, or an alternative fuel approved by the ATCM for Stationary CI Engines:

- a. Ultra-low sulfur concentration of 0.0015% (15 ppm) or less, on a weight per weight basis; and,
- b. A cetane index or aromatic content, as follows:
 1. A minimum cetane index of 40; or,
 2. A maximum aromatic content of 35 volume percent.

[17 CCR 93115.5(a), 40 CFR 80.510, and 40 CFR 60.4207(b)]

Note: Use of CARB certified ULSD fuel satisfies the above requirements.

4. The owner/operator shall maintain an operations log for this engine current and on-site (or at a central location) for a minimum of three (3) years, and this log shall be provided to District, State and Federal personnel upon request. The log shall include, at a minimum, the following information:

- a. Date of each maintenance action or repair;
- b. Description of each maintenance action or repair;
- c. Fuel sulfur concentration as required by condition #3 (the owner/operator may use the supplier's certification of sulfur content if it is maintained as part of this log); and,
- d. Results of any source testing conducted on the engine.
- e. Calendar year operation in terms of total hours. [17 CCR 93115.10(a)(3)(D)]

[17 CCR 93115.10(f), MDAQMD Rule 1302]

5. This engine is subject to the requirements of Title 17 CCR 93115, the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines and 40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS). In the event of a conflict between these conditions and the ATCM or NSPS, the more stringent requirements shall govern. [District Rule 1302]

6. A non-resettable four-digit (9,999) hour timer shall be installed and maintained on this unit to indicate elapsed engine operating time. [17 CCR 93115.10(d)(1)]

7. A facility wide Comprehensive Emission Inventory (CEI) for all emitted criteria and toxic air pollutants must be submitted to the District, in a format approved by the District, upon District request. [District Rule 107(b), H&S Code 39607 & 44341-44342, and 40 CFR 51, Subpart A]

COMMENTS:

As required by MDAQMD Rules 1302 and 1303, the following New Source Review was conducted:

Major Source Review: The facility is not currently a Major Source. Addition of this engine does not trigger any Major Source threshold.

PSD Review: The engine does not produce enough emissions to trigger any PSD threshold, therefore PSD is not applicable.

BACT Determination: This engine is a Tier 4 interim certified Compression-Ignition (Diesel) engine that meets all emission standards of both 40 CFR 60 Subpart IIII and 17 CCR 93115.

Federal NSPS Compliance: This Certified Tier 4i DICE complies with the provisions of the NSPS for Compression-Ignition

engines (40 CFR 60 subpart IIII).

Federal MACT/NESHAPS Compliance: This DICE complies with the RICE NESHAPS (40 CFR 63 subpart ZZZZ) by virtue of complying with the provisions of the NSPS for Compression-Ignition engines (40 CFR 60 subpart IIII)

NAAQS Review: This engine must be operated in accordance with Federal New Source Performance Standards, a California State ATCM, and SIP-Approved District rules, therefore minimizing any negative impact on the District's ability to attain/maintain compliance with NAAQS.

CA State ATCM Compliance: Emissions from this EPA Certified Tier 4i Compression-Ignition (Diesel) engine fully complies with the emission requirements of 17 CCR 93115.

District Rule Compliance:

- MDAQMD Rule 404: The certified PM10/PM2.5 + SOx emission level of TBD lbs/hour = .0019 gr/dscf based on an exhaust flow rate of TBD acfm, below the Rule's allowable limit of 0.1960 gr/dscf.

- MDAQMD Rule 431: The permit requirement to use Ultra-Low Sulfur Diesel (ULSD) fuel containing no more than .0015 percent by weight is below the Rule's allowable limit of 0.5 percent by weight.

- MDAQMD Rule 1320: The Hazardous Air Pollutants (HAPs) emitted from this engine do not meet the Federal T-NSR thresholds. The engine's Toxic Air Contaminants (TACs) are governed by a CA State Airborne Toxic Control Measure (ATCM): 17 CCR 93115. A Prioritization Score analysis was conducted and a score of TBD was obtained for this engine.

PERMIT FEES/RATING:

| Fee Schedule | Rating | Permit |
|------------------|---------|---------|
| Motor Horsepower | 168 bhp | B012765 |