

PUBLIC NOTICE

Issue Date: October 19, 2024

Proposal:

Modifications to Existing Equipment, Use Type, and Best Available Control Technology (BACT) Determination for Humboldt Creamery (Facility 533-12)

The North Coast Unified Air Quality Management District (District) is the local agency that regulates stationary sources of air pollution within the California counties of Humboldt, Del Norte, and Trinity. This public notice is issued by the District's Air Pollution Control Officer (APCO) in accordance with District Regulation I, Rule 110(H)(4)(a)(i).

Crystal Creamery, Inc. DBA Humboldt Creamery has applied for a modification to their existing Permit to Operate (PTO) for equipment located at the Humboldt Creamery, 572 State Highway 1, Fortuna, CA 95540.

Approval of the PTO modification would allow Humboldt Creamery to enroll the device in the California Independent System Operator (CAISO) demand response programs. This would modify the existing authorization to allow for operation during periods of declared grid emergency. The current authorization only allows for operation when power is unavailable from the grid due to outage and related maintenance/testing. Operation under the CAISO enrollment would be limited to 500 hours per year.

The existing device will have a diesel particulate filter (DPF) and diesel oxidation catalyst (DOC) installed to comply with the EPA Reciprocating Internal Combustion Engine (RICE) National Emission Standards for Hazardous Air Pollutants (NESHAP) as per 40 CFR 63 Subpart ZZZZ.

No increases to the daily, hourly, and annual emission limits are proposed.

The District hereby gives notice of intent to take final action on the proposed PTO, after a 30-day public comment period beginning on the date of this notice. This public comment period allows interested members of the public to review the proposed permits and provide written comments. Written comments must be received prior to 4:00 p.m. on Monday, November 18, 2024. The APCO will review and consider all comments prior to taking final action on the application.

The application, proposed permits, and District analysis are available for inspection at the District offices during normal business hours - Monday through Friday 9:00 a.m. to 12:00 p.m. and 1:00 p.m. to 4:00 p.m. Information is also posted on the District website at www.ncuaqmd.org.

Should you have a question or require additional information contact Cameron Purchio at (707) 443-3093. Public comments concerning this permit should be submitted to:

North Coast Unified Air Quality Management District
ATTN: Humboldt Creamery PTO
707 L Street
Eureka, CA 95501



NORTH COAST UNIFIED AIR QUALITY MANAGEMENT DISTRICT

707 L Street, Eureka, CA 95501

Phone: (707) 443-3093

Fax: (707) 443-3099

**PERMIT TO OPERATE
NO. 001250-2**

IS HEREBY GRANTED TO:

Permittee: Crystal Creamery, Inc.
dba Humboldt Creamery
572 State Highway 1
Fortuna, CA 95540

Location: Humboldt Creamery
572 State Highway 1
Fortuna, CA 95540

Contact: Travis Victorine
Plant Manager
Phone: (707) 725-6182 x3005
Email: tvictornine@humboldtcreamery.com

Issued Date: **TO BE DETERMINED**

Issued by: NCUAQMD Air Pollution Control Officer

FOR THE SOURCE LISTED BELOW:

The source is a diesel engine that powers an emergency and limited prime generator for Humboldt Creamery.

SUBJECT TO THE FOLLOWING CONDITIONS:

This is your Permit to Operate. This permit is subject to the following terms and conditions.

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DEFINITIONS

As used in this Permit, the terms shall have the meaning set out herein.

- a. **acfm**: actual cubic feet per minute
- b. **APCO**: the NCUAQMD Air Pollution Control Officer
- c. **Calendar Day**: Any continuous 24-hour period beginning at 12:00 AM or 0000 hours
- d. **California Air Resources Board (CARB) Diesel Fuel**: Any diesel fuel that is commonly or commercially known, sold, or represented by the supplier as diesel fuel No. 1-D or No. 2-D, pursuant to the specifications in ASTM D975-81, "Standard Specification for Diesel Fuel Oils," as modified in May 1982, which is incorporated herein by reference, and that meets the specifications defined in Title 13 CCR, sections 2281, 2282 and 2284
- e. **CAM Plan**: Compliance Assurance Monitoring Plan, as defined in 40 CFR 64
- f. **CARB**: the California Air Resources Board
- g. **CEMS**: Continuous Emissions Monitoring System
- h. **CFR**: the Code of Federal Regulations
- i. **COMS**: Continuous Opacity Monitor
- j. **Diesel Particulate Matter (DPM)**: filterable particulate matter (PM) measured using EPA method 5
- k. **District**: North Coast Unified Air Quality Management District
- l. **dscfm**: dry standard cubic feet per minute
- m. **Emergency**: operation arising from a sudden and reasonably unforeseeable event beyond the control of the permittee (e.g., an act of God) which causes the excess of a limitation under this permit and requires immediate and corrective action. An "emergency" does not include noncompliance as a result of improperly designed or installed equipment, lack of preventative maintenance, careless or improper operation, or operator error.
- n. **EPA**: the United States Environmental Protection Agency
- o. **Facility**: the site of the equipment authorized for use by this permit
- p. **Heat Input**: the energy (heat) input of the fuel combusted at the higher heating value (HHV) of the fuel
- q. **HEPA filter**: means a High Efficiency Particulate Air filter used to remove particles less than one (1) micron in aerodynamic diameter and operates at removal efficiencies of 99.9 percent or better.
- r. **HHV**: Higher Heating Value
- s. **HSC**: California Health & Safety Code
- t. **hr**: one hour – a standard measurement of time
- u. **H₂S**: Hydrogen Sulfide
- v. **lb**: pound – an English unit of measurement of weight and mass being equivalent to 7000 grains, 16 ounces, and 0.453 kilograms
- w. **MMBtu**: million British thermal units
- x. **Natural Gas**: any mixture of gaseous hydrocarbons containing at least 80 percent methane by volume as determined by Standard Method ASTM D1945-64
- y. **NCUAQMD**: North Coast Unified Air Quality Management District
- z. **NFPA**: National Fire Protection Association

- aa. **Notice:** unless otherwise stated, shall be in writing, sent postage prepaid, to the APCO and include all information required. Notice shall be sent to the APCO at the following address: 2300 Myrtle Ave., Eureka, CA 95501. Hand delivery or facsimile are also acceptable.
- bb. **O₂:** Oxygen
- cc. **Permittee:** the owner or operator identified on the Permit title page
- dd. **PM:** Particulate Matter
- ee. **Ppmvd:** parts per million, volumetric dry
- ff. **Quarter:** calendar quarter, consisting of the following Q1 - January through March; Q2 - April through June; Q3 - July through September; Q4 - October through December
- gg. **Responsible Official:** person(s) who have direct authority or control to affect operations of the equipment authorized pursuant to this Permit, and who have the ability to certify that a source complies with all applicable federal requirements and federally enforceable permit conditions as generally defined in NCUAQMD Rule 101
- hh. **ROC:** reactive organic carbon consistent with NCUAQMD Rule 101 and HSC
- ii. **SO₂:** Sulfur Dioxide
- jj. **VEE:** Visible Emissions Evaluation
- kk. **Year:** Any consecutive twelve-month period of time

GENERAL CONDITIONS

Administration

1. This Permit is issued pursuant to NCUAQMD Rules and the California Health and Safety Code Section 42300. Commencement of any act or operation authorized by this Permit shall be conclusively deemed to be acceptance of all terms and conditions contained herein.
2. The Permittee shall comply with all conditions of this permit. Any violation of any condition of this Permit is a violation of NCUAQMD Rules and Regulations, and California State Law. [NCUAQMD Rule 105(A)]
3. The Permit Conditions shall be liberally construed for the protection of the health, safety and welfare of the people of the NCUAQMD. In the event that two or more conditions may apply, and such conditions cannot apply without conflict, the condition(s) most restrictive shall prevail. [NCUAQMD Rule 100(F)(3), Rule 102(E)]
4. The NCUAQMD Rules and Regulations may be revised by the NCUAQMD Board with notice as required by State law. It is Permittee's responsibility to stay current with Rules and Regulations governing its business. The Permittee is expected to, and shall, comply with all applicable Rules and Regulations. [NCUAQMD Rule 100(F), Rule 105(A)]
5. Permit requirements apply to the facility owner and/or operator(s) and any contractor(s) or subcontractor(s) performing any activity authorized under this Permit. Any person(s) including contractor(s), subcontractor(s), not in compliance with the applicable permit requirements are in violation of State and Local laws, and are subject to appropriate civil and criminal penalties. The facility owner and/operator, and all contractor(s) or subcontractor(s) are strictly liable for the actions and violations of their employee(s). A violation committed by a contractor(s) or subcontractor(s) shall be considered a violation by the facility owner(s) and/or operator(s), and is also a violation by the contractor(s) and/or any subcontractor(s). [NCUAQMD Rule 105(A)]
6. Changes in plans, specifications, or other representations to the documents and forms submitted as part of the application package, shall not be made if they will increase the discharge of emissions or cause a change in the method of control of emissions or in the character of emissions of the subject facility. No modification shall be made prior to issuance of a permit revision for such modification. [NCUAQMD Rule 102]
7. Knowing and willful misrepresentation of a material fact in the application for the Permit, or failure to comply with any condition of the Permit, or of the NCUAQMD Rules and Regulations, or any State or federal law, shall be grounds for revocation of this Permit. [NCUAQMD Rule 102]
8. Permittee shall not construct, erect, modify, operate, or use any equipment which conceals the emission of an air contaminant, which would otherwise constitute a violation of the limitations of this Permit. [NCUAQMD Rule 104(A)(2)]
9. This Permit does not convey any property rights of any sort, or any exclusive privilege.

10. The "Right of Entry", as delineated in *NCUAQMD* Rule 109(A) and California Health and Safety Code, Division 26, Section 41510 shall apply at all times. Failure to grant immediate access to District, CARB, or other authorized personnel shall be grounds for permit suspension or revocation.
11. The APCO reserves the right to amend this Permit in order to ensure compliance with all applicable Federal, State and Local laws, Rules and Regulations or to mitigate or abate any ambient air related public nuisance. Such amendments may include requirements for additional operating conditions, testing, data collection, reporting and other conditions deemed necessary by the APCO. [*NCUAQMD Rule 102(E)*]
12. If any provision or condition of this Permit is found invalid by a court of competent jurisdiction, such finding shall not affect the validity or enforcement of the remaining provisions. [*NCUAQMD Rule 102(E)*]
13. This Permit shall be posted in a conspicuous location at the site and shall be made available to *NCUAQMD* representatives upon request. [*NCUAQMD Rule 102(H)*]
14. The Permittee shall pay an annual permit fee and other fees as required in accordance with District Regulation IV. Failure to pay these fees will result in the forfeiture of this Permit. Operation without a permit subjects the source to potential enforcement action by the District. In the event of facility closure or change of ownership or responsibility, the new owner or operator shall be assessed and shall pay any unpaid fees. [*NCUAQMD Regulation IV - Fees*]
15. This Permit is not transferable from either one location to another, from one piece of equipment to another, or from one person to another, except as provided herein. In the event of any change in control or ownership of the subject facility, the Permittee shall notify the succeeding owner of this Permit and its conditions and shall notify the *NCUAQMD* of the change in control or ownership within thirty (30) days of that change. [*NCUAQMD Rule 102(E)*]
16. A request for Transfer of Ownership of this Permit shall be submitted to the APCO prior to commencing any operation of the subject equipment and/or operations by any owner(s) and/or operator(s) not otherwise identified in this Permit. Failure to file the Transfer of Ownership constitutes a separate and independent violation, and is cause for voiding this Permit. The burden of applying for a Transfer of Ownership is on the new owner(s) and/or operator(s). Any Permit transfer authorized pursuant to a transfer of ownership request shall contain the same conditions as this Permit. [*NCUAQMD Rule 102(E), Rule 102(E)*]
17. For purposes of this Permit, the terms identified in the Definition Section shall have the meaning set out in *NCUAQMD* Rule 101 and as defined in the definition section of this permit. In the event of any conflict between Rule 101 and the permit definitions, the definitions section of this permit shall prevail. [*NCUAQMD Rule 102(E)*]

Emissions & Operation

18. This Permit does not authorize the emission of air contaminants in excess of those allowed by the federal Clean Air Act, California Health and Safety Code or the Rules and Regulations of the NCUAQMD. This Permit shall not be considered as permission to violate existing laws, ordinances, regulation or statutes of other governmental agencies. [NCUAQMD Rule 102(E)]
19. Permittee shall not discharge such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health or safety of any such persons or the public; or which cause or have a natural tendency to cause injury or damage to business or property. [HSC §41700; NCUAQMD Rule 104(A)(1)]
20. Permittee shall not discharge into the atmosphere from any source whatsoever any air contaminant in excess of the applicable opacity limits of NCUAQMD Rule 104(B) [HSC §41701; NCUAQMD Rule 104(B)]
21. The handling, transporting, or open storage of material in such a manner which allows unnecessary amounts of particulate matter to become airborne shall not be permitted. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne. [NCUAQMD Rule 104(D)]
22. The Permittee shall not discharge into the atmosphere from any single source of emissions, sulfur oxides (calculated as sulfur dioxide (SO₂)) in excess of 1,000 ppm or in excess of the emission limitations of Federal New Source Performance Standards, as applicable. [NCUAQMD Rule 104(E)]
23. All equipment regulated by this Permit shall at all times be maintained in good working order, and shall be operated as efficiently as possible so as to ensure compliance with all applicable emission limits. For purposes of compliance with this requirement, good working order, efficient operation, and proper maintenance shall mean the implementation of all protocols, procedures, and activities recommended by the device manufacturer or those required by this Permit. [NCUAQMD Rule 102(E)]
24. The Permittee shall maintain the permitted equipment in compliance with the latest Cal-OSHA safety standards so as to ensure the health and safety of District representatives performing a site inspection. [NCUAQMD Rule 102(E)]

Records & Training

25. The Permittee shall provide training and instruction to all affected contractor(s), subcontractor(s), and employee(s). Training shall include the identification of all the requirements contained within this Permit, and the appropriate method to be used to comply with the permit conditions. Training shall occur prior to any of the contractor(s), subcontractor(s), or employee(s) constructing or operating equipment authorized by this permit. Records documenting the persons receiving instruction and the instruction materials shall be made available to the APCO upon request. [NCUAQMD Rule 102(E)]

26. Permittee shall furnish to the APCO, within a reasonable time, any information that the NCUAQMD may request to determine compliance with this Permit or whether cause exists for modifying, revoking and reissuing, or terminating this Permit. Upon request, Permittee shall also furnish to the NCUAQMD copies of records required to be kept by this Permit. [*HSC §42303; NCUAQMD Rule 103(F); NCUAQMD Rule 102(E)*]
27. The Permittee shall maintain a breakdown log that describes the breakdown, includes the date and time of the breakdown, the cause of the breakdown, corrective measures taken, and the date and time when the breakdown was corrected. [*NCUAQMD Rule 105(E)*]

Permit Term

28. This Permit to Operate is effective beginning on the date of signature by the Authorized District Representative and is valid through the remainder of the fiscal year. Thereafter, this Permit may be renewed by the APCO each year upon full payment of fees, and if requested, upon the submission of emission inventory information. The APCO may refuse to renew this Permit. The APCO may also reopen the permit at any time and may make modifications to the permit as necessary to ensure compliance with applicable rules and regulations. The District fiscal year begins July 1st and ends June 30th. [*HSC §42333, NCUAQMD Rule 102(G)*]

EQUIPMENT SPECIFIC CONDITIONS

AUTHORIZED EQUIPMENT

1. This permit authorizes the installation and operation of the following equipment:

Table 1.0 - Authorized Process Equipment

Device S-1	Diesel CI Engine powered Generator
Application	Standby Generator
SCC	20200102
Generator Model	Onan 2000 DQKC-2125
Engine Model	Cummins QSK6-G6
Engine Family	1CEXL060.ABA (Tier 1)
Size	2,922 Hp (2,180kW) @ 1800 rpm Standby; 60.2 L
Year	June 25, 2001
Serial Number	33149734 (engine) / G010262126 (generator)
Heat Input Rate	18.9 MMBtu/hr (137.3 gal/hr)
Location	Approx. 40.615918°, -124.202795° (Decimal Degrees)

2. The Permittee shall install and maintain a non-resettable hour meter with a minimum display capability of 9,999 hours upon the Emergency Diesel IC Engine authorized for use by this permit. [17 CCR §93115.10(d) effective May 19, 2011]

OPERATIONAL CONDITIONS

3. The Permittee shall only operate the Emergency Diesel CI Engine S-1 using one of the following fuels:
 - A. CARB Diesel Fuel, or
 - B. An alternative diesel fuel that meets the requirements of the Verification Procedure (as codified in CCR Title 13 Sections 2700-2710), or
 - C. CARB Diesel Fuel used with fuel additives that meets the requirements of the Verification Procedure (as codified in CCR Title 13 Sections 2700-2710), or
 - D. Any combination of a) through c) above.
4. The Emergency Diesel CI Engine S-1 is authorized the following maximum allowable annual hours of operation as listed below: [17 CCR §93115 effective May 19, 2011]

Table 2.0 Hours of Operation for Emergency Diesel CI Engine S-1

Emergency Use	Non-Emergency Use		
	Prime CAISO Use	Emission Testing to show compliance	Maintenance & Testing
Not Limited by the ATCM	500 hours/year	Not Limited by the ATCM	50 hours/year

5. The Permittee shall only operate the Emergency Diesel CI Engine in accordance with the most recent amendment of Title 17, California Code of Regulations section 93115.6(a)(3)(A), ATCM for Stationary CI Engines.
6. The Permittee shall maintain the permitted equipment in compliance with federal and State Occupational Safety and Health Administration requirements so as to ensure the health and safety of District representatives performing a site inspection. [NCAQMD Rule 102(E)]
7. The Permittee shall take immediate corrective action to restore compliant operation upon detection of an upset or breakdown condition that causes or may cause a violation of any emissions limitation, as established in this permit or in NCAQMD rules. [NCAQMD Rule 102(E)]
8. The Permittee shall not operate S-1 unless its exhaust is vented to a diesel particulate filter (DPF) system, which is in full operation and which is in good operating condition at all times.
9. The DPF system shall not be operated unless it is equipped with an operational exhaust temperature and engine backpressure monitor, data log, and alarm system to indicate to the owner or operator when the high back pressure limit is approached. The operator shall inspect the diesel particulate filter every (50) hours of operation and regenerate the filter as recommended by the manufacturer to ensure proper operation and to prevent the maximum backpressure of the engine from being exceeded.
10. The Permittee shall not operate S-1 unless its exhaust is vented to a diesel oxidation catalyst (DOC) system, which is in full operation and which is in good operating condition at all times.

EMISSION LIMITATIONS

11. The Permittee shall not discharge pollutants into the atmosphere from the Diesel CI Engine S-1 at rates in excess of the performance standards in Table 3.0 below. [17 CCR §93115.10(d) effective May 19, 2011]

Table 3.0 Diesel CI Engine S-1 Performance Standards

Pollutant	Performance Standards
	g/bhp-hr
HC	n/a
NOx	n/a
NMHC + NOx	7.9
CO	8.5
PM	0.15

12. The Permittee shall not discharge pollutants into the atmosphere from the Diesel CI Engine S-1 in excess of the following limits in Table 4.0 below. Emissions generated during an emergency event or during emission testing for compliance purposes shall not contribute towards the hourly or annual emission limits. [NCUAQMD Rule 102(E)]

Table 4.0 Diesel CI Engine S-1 Emission Limits

Pollutant	Emission Rate	
	lb/hr	tons/year
CO	16.427	4.11
NOx	44.448	11.11
PM ₁₀	0.145	3.62E-03
PM _{2.5}	0.145	3.62E-03
SOx	0.017	4.41E-03
VOC	6.442	1.61

13. The Permittee shall not operate the Diesel CI Engine S-1 such that any air contaminant is discharged in excess of twenty (20) percent opacity, or as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, calculated as a six (6) minute average. [NCUAQMD Rule 104(B)(3)]
14. The Permittee shall not discharge particulate matter into the atmosphere from any combustion source in excess of 0.20 grains per cubic foot of dry gas calculated to 12 percent CO₂ at standard conditions. [NCUAQMD Rule 104(C)(1)]

COMPLIANCE TESTING & MONITORING

15. The Permittee shall have the visible emissions from the Diesel CI Engines determined using EPA Reference Method 9 (Visible Emissions Evaluation) for opacity of exhaust gases within thirty (30) days after being directed by the APCO. [NCUAQMD Rule 102(E)]

RECORDKEEPING & REPORTING

16. The Permittee shall record the Diesel CI Engine S-1 operational parameters as listed in Table 5.0 below. [17 CCR §93115.10(g) effective May 19, 2011]

Table 5.0 Recordkeeping – S-5 (Emergency CI Engine)

Frequency	Information to be recorded
Upon Occurrence	A. Maintenance or repairs performed B. Equipment breakdown or malfunction C. Excessive emission events
Monthly	D. Emergency hours of operation E. Maintenance and testing hours of operation F. Prime hours of operation G. Emission testing hours of operation H. Quantity (gallons) of CARB Diesel combusted
Annually	I. Emergency hours of operation J. Maintenance and testing hours of operation K. Prime hours of operation L. Emission testing hours of operation M. Quantity (gallons) of CARB Diesel combusted

44. The permittee shall document the use of CARB Diesel through the retention of fuel purchase records indicating that the only fuel purchased for supply to S-1 (Diesel CI Engine) was CARB Diesel. [NCUAQMD Rule 102(E)]

45. The Permittee shall retain records required by this section for a minimum of 36 months. Records shall be retained on-site, either at a central location or at the engine’s location, and shall be made immediately available to the District staff upon request. [NCUAQMD Rule 102(E)]

46. The Permittee shall report to the NCUAQMD any deviations from the requirements of this permit, including those attributable to breakdown conditions, the probable cause of the deviations, and any corrective actions or preventive measures taken. Within ten (10) days after occurrence, the Permittee shall report the following information regarding the event: [NCUAQMD Rule 105(E)]

- A. Duration of excessive emissions,
- B. Estimation of the quantity of emissions,
- C. Statement of the cause of the occurrence, and
- D. Corrective measures taken to prevent recurrences.

47. The Permittee shall provide information requested by the NCUAQMD for emission inventory purposes within thirty (30) days of receiving the request. [NCUAQMD Rule 103(F)]

DRAFT

AUTHORIZING SIGNATURE

**NORTH COAST UNIFIED
AIR QUALITY
MANAGEMENT DISTRICT**

707 L STREET
EUREKA, CALIFORNIA 95501

PHONE (707) 443-3093
FAX (707) 443-3099

DATE: _____

BY: _____

Jason L. Davis
DEPUTY APCO
for
BRIAN M. WILSON
AIR POLLUTION CONTROL OFFICER

DRAFT

**North Coast Unified
Air Quality Management District**
707 L Street, Eureka, CA 95501
Telephone (707) 443-3093 FAX (707) 443-3099
www.ncuaqmd.org



ENGINEERING EVALUATION

Crystal Creamery, Inc.
DBA Humboldt Creamery

Emergency Standby Diesel Engine

APPLICATION NO.: PTO #001250-2, FID #533-12

EVALUATION DATE: October 15, 2024

EVALUATION BY: Cameron Purchio, Air Quality Engineer

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FACILITY INFORMATION

Permittee: Crystal Creamery, Inc. dba Humboldt Creamery
572 State Highway 1
Fortuna, CA 95540

Site: Humboldt Creamery
572 State Highway 1
Fortuna, CA 95540

SIC: 2023

INTRODUCTION & PROPOSAL

Crystal Creamery, Inc. dba Humboldt Creamery has submitted an application to modify existing Permit to Operate (PTO) #000525-2 rev. 2 to allow for enrollment of the device in the California Independent System Operator (CAISO) demand response programs. This would modify the existing authorization to allow for operation during periods of declared grid emergency. The current authorization only allows for operation when power is unavailable from the grid due to outage and related maintenance/testing. Device S-1 is a 2,922-horsepower diesel generator located at the Humboldt Creamery Facility, 572 State Highway 1, Fortuna.

EQUIPMENT DESCRIPTION

S-1 is a stationary generator powered by an attached diesel-fueled engine. S-1 meets the definition of "in-use CI engine" as described in the California Air Resources Board (CARB) Airborne Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) section 93115.4(a)(50).

Equipment Information

Device S-1	Diesel CI Engine powered Generator
Application	Standby Generator
SCC	20200102
Generator Model	Onan 2000 DQKC-2125
Engine Model	Cummins QSK6-G6
Engine Family	1CEXL060.ABA (Tier 1)
Size	2,922 Hp (2,180kW) @ 1800 rpm Standby; 60.2 L
Year	June 25, 2001
Serial Number	33149734 (engine) / G010262126 (generator)
Heat Input Rate	18.9 MMBtu/hr (137.3 gal/hr)
Location	Approx. 40.615918°, -124.202795° (Decimal Degrees)

PROCESS RATE

The emergency standby diesel-fueled fire pump (S-1) will use approximately 137.3 gal/hr (18.9 MMBtu/hr) of CARB Diesel Fuel in standby operation.

OPERATING SCHEDULE

Based on Stationary ATCM section 93115.6(a)(3)(A)(c), operation of the diesel-fueled generator (S-1) will be limited to 50 hours per year for maintenance and testing. Engine operation for emergency use is not limited by the ATCM.

The diesel-fueled generator (S-1) will be enrolled in Pacific Gas & Electric (PG&E) Base Interruptible Program (BIP) which is called pursuant to the California Independent System Operator (CAISO) Operating Procedure 4420. BIP can be called for transmission emergencies and at North American Electric Reliability Corporation (NERC) Energy Emergency Alert (EEA) Levels 1, 2 or 3. Use of the diesel-fueled generator (S-1) for Demand Response Operations will be limited to 500 hours per year during qualifying events. Demand Response Operations use of S-1 is classified as prime usage.

CONTROL EQUIPMENT

The diesel-fueled generator (S-1) utilizes various controls to help meet the emission standard category of Tier 1 for its rated power class. S-1 will have a diesel particulate filter (DPF) and diesel oxidation catalyst (DOC) installed to comply with the EPA Reciprocating Internal Combustion Engine (RICE) National Emission Standards for Hazardous Air Pollutants (NESHAP) as per 40 CFR 63 Subpart ZZZZ.

EMISSIONS CALCULATIONS

Consistent with ARB guidance, allowable and actual annual emissions for the emergency standby diesel-fueled fire pump (S-1) were calculated at a rate of 50 hours/year (see *“Risk Management Guidelines for the Permitting for New Stationary Diesel Fueled Engines”*, October 2000, Table 1, p.11). Potential to emit (PTE) for emergency use was calculated at a rate of 500 hours/year (see *U.S. EPA memo “Calculating Potential to Emit for Emergency Generators,” September 6, 1995*). PTE for Prime use shall be limited to 500 hours/year and was calculated at 500 hours/year as specified by the applicant. 40 CFR 63 Subpart ZZZZ and ATCM emission standards were used to calculate allowable emission rates. Application materials containing manufacturer certification and controls analysis were used to calculate actual emission rates (see *Attachment A, Emissions Calculations*). Sulfur oxide emission rates were calculated using a mass balance equation and are based on the use of CARB Diesel Fuel (in which the sulfur content, by weight, will not exceed 0.0015%, or 15 ppm).

Device Potential to Emit

Pollutant	Emission Rate	
	lb/hr	tons/year
CO	16.427	4.11
NOx	44.448	11.11
PM ₁₀	0.145	3.62E-03
PM _{2.5}	0.145	3.62E-03
SOx	0.017	4.41E-03
VOC	6.442	1.61

APPLICABLE RULES AND REGULATIONS

NCUAQMD Regulation I, Rule 104(B)(3) – Visible Emissions:

“No person shall discharge into the atmosphere from any source whatsoever any air contaminant which is in excess of twenty (20) percent opacity, or as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, calculated as a six (6) minute average.”

Because it is certified to a Tier 1 emissions standard and equipped with a diesel particulate filter, the diesel-fueled generator (S-1), if properly operated and maintained, is expected to comply with the requirements of the above rule.

NCUAQMD Regulation I, Rule 104(C)(1) – Particulate Matter, General Combustion Source:

“A person shall not discharge particulate matter into the atmosphere from any combustion source in excess of 0.46 grams per standard cubic meter (0.20 grains per standard cubic foot) of exhaust gas, calculated to 12 percent carbon dioxide...”

Based on emissions calculations, the diesel-fueled generator (S-1) is expected to comply with the requirements of the above rule (see Attachment A).

NCUAQMD Regulation I, Rule 104(E) – Sulfur Oxide Emissions:

“No person shall discharge into the atmosphere from any single source of emissions whatsoever sulfur oxides, calculated as sulfur dioxide (SO₂) in excess of 1,000 ppm...”

Based on emissions calculations, the diesel-fueled generator (S-1) is expected to comply with the requirements of the above rule (see Attachment A).

NCUAQMD Regulation I, Rule 104(K) – Federal New Source Performance Standards (NSPS):

“All new sources of air contaminants or modifications to existing sources shall comply with the rules, standards, criteria and requirements of Part 60, Chapter 1, Title 40, Code of Federal Regulations...”

Because S-1 is a diesel-fueled generator, and was manufactured prior to July 1, 2006, it is not subject to the provisions of 40 CFR 60 Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines).

Because S-1 is a diesel-fueled generator, is pre 2007 model year, and has an engine displacement of less than 10 liters per cylinder, Section 60.4205(a) requires that it comply with the emission standards in Table 1 to Subpart IIII Part 60. S-1 complies with these requirements, as shown in Humboldt Creamery’s ATC application.

Sections 60.4206 and 60.4211(a) require that the owner/operator operate and maintain the engine according to the manufacturer’s written instructions or procedures developed

by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine. Humboldt Creamery is expected to comply with this requirement.

Section 60.4207(a) requires that by October 1, 2007, the owner/operator must use fuel that complies with 40 CFR 80.150(a). Humboldt Creamery is expected to comply with this requirement because it will use CARB Diesel (see *ATCM Compliance, below*).

Section 60.4207(b) requires that by October 1, 2010, S-1 must use fuel that complies with 40 CFR 80.151(b). Humboldt Creamery is expected to comply with this requirement because S-1 will use CARB Diesel (see *ATCM Compliance, below*).

Section 60.4209(a) requires that a non-resettable hour meter is installed on S-1 prior to startup of the engine. This is also a requirement of the Stationary ATCM, and will be a condition of the Authority to Construct.

S-1 complies with the requirements of section 60.4211(b) because it is certified in accordance with 40 CFR Part 89.

Section 60.4211(f) requires that S-1 is run no more than 100 hours per year for maintenance checks and readiness testing. Humboldt Creamery is expected to comply with this requirement because the Stationary ATCM is more restrictive, in that it limits such activity to 50 hours per year (see *ATCM Compliance, below*).

Humboldt Creamery is not required to perform tests in accordance with Sections 60.4212 or 60.4213.

According to section 60.4214, because S-1 is certified, Humboldt Creamery is not required to submit an initial notification to EPA.

Because S-1 has a diesel particulate filter, it is subject to the provisions in Section 60.4214(c).

Humboldt Creamery is required to comply with certain sections of 40 CFR 60 Subpart A, General Provisions. Humboldt Creamery is expected to comply with these requirements.

NCUAQMD Regulation I, Rule 104(L) – National Emissions Standards for Hazardous Air Pollutants (NESHAPS):

According to 40 CFR 63 Subpart ZZZZ, the diesel-fueled generator (S-1) is considered to be part of an “area source” because the facility at which it exists does not emit any single hazardous air pollutant (HAP) at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year. Area sources are subject to the above regulations, however, the requirements of the CARB Stationary ATCM incorporate and/or are more restrictive than the federal conditions.

New Source Review (NSR) and Prevention of Significant Deterioration (PSD) Compliance

NCUAQMD Regulation I, Rule 110 – NSR:

“This rule shall apply to all new and modified stationary sources which are subject to AQMD permit requirements and, after construction, emit or may emit any affected pollutants.”

NSR is applicable because the diesel-fueled generator (S-1) is subject to AQMD permit requirements and emits affected pollutants. For NSR purposes, PTE for S-1 is calculated according to Reg I, Rule 110(F)(3), and by the definition for “Potential to Emit” in (D)(23) of the same rule. PTE was calculated at 100% load, at a rate of 24 hours/day, and 500 hours/year (see *Emissions Calculations* section).

According to Reg I, Rule 110(E)(1), an applicant shall apply BACT to any new emissions unit when its PTE exceeds the amounts listed therein. The PTE for S-1 exceeds the pounds per day threshold for NO_x (see *attachment A*). Therefore, BACT does apply.

A BACT analysis for NO_x was performed by the applicant and verified by District staff. BACT standards matching those of the Bay Area Air Quality Management District (BAAQMD) were utilized including the cost effectiveness threshold for NO_x identified by BAAQMD as \$17,500 per ton. There are two stages to a BACT analysis, referred to as BACT1 and BACT2. BACT1 determines if a given control is technologically feasible and cost effective. The BACT1 analysis determines the price per ton of pollutant reduction and compares the cost to the cost effectiveness threshold. In order to be required, the control analyzed must be considered technologically feasible and cost effective. In the event that a given control does not meet these criteria, BACT2 is analyzed. BACT2 is defined as “Achieved in Practice” BACT and varies based on the device being analyzed. In the case of device S-1, achieved in practice BACT is compliance with the California Air Toxic Control Measures for Diesel Engines (ATCM). Compliance with the ATCM for an in-use, stationary, prime, diesel fueled compression ignition engine greater than 50 brake horsepower for NO_x emissions is defined as “No increase in HC or NO_x emissions above 10% from baseline.”

The data provided analyzed the cost effectiveness of two scenarios, (1) adding selective catalytic reduction (SCR) to reduce the current NO_x below 85%, and (2) replacing the engine with a Tier 4 certified non-emergency engine. Both analyses are based on the requested annual cap of 500 hours per year of operation. As shown in the table below, neither of the BACT1 scenarios analyzed meet the cost effectiveness threshold of \$17,500 per ton.

BACT Scenario and Cost Effectiveness Summary

BACT Scenario	Cost per Ton NOx Reduction (USD)
SCR	\$17,849
Tier 4 Device	\$82,928
Cost Effectiveness Threshold	\$17,500

The applicant has proposed an annual limit of 500 hours of operation, which does not constitute a change from the original PTE and analysis for device S-1, and therefore does not constitute a change in PTE. Therefore, device S-1, when operated in this manner, will not cause to be an increase in HC or NOx emissions above 10% from baseline and BACT2 (Achieved in Practice) is met for device S-1. The operational limit of 500 hours per year of prime operations shall be included as a permit condition and shall be verified through recordkeeping and recording requirements.

According to Reg I, Rule 110(E)(2)(a), offsets shall not be required because the PTE for S-1 does not exceed 25 tons per year for any pollutant.

NCUAQMD Regulation I, Rule 110 – PSD:

The diesel-fueled generator (S-1) is not subject to Prevention of Significant Deterioration (PSD) review because PTE does not exceed 250 tons per year for any criteria pollutant.

ATCM Compliance

Airborne Toxic Control Measure for Stationary Compression Ignition Engines [CCR Title 17 Section 93115, effective May 19, 2011]:

The diesel-fueled generator (S-1) is subject to the CARB Stationary ATCM because it is a stationary compression ignition engine with a rated brake horsepower greater than 50, and it does not belong to any of the exemption categories listed under ATCM section 93115.3.

The engine model of S-1 is certified according to 40 CFR Part 89 Subpart D for compliance with EPA “Tier 1” emission standards, as specified in 40 CFR, PART 60, Subpart III.

S-1 is required to use either CARB Diesel Fuel or the alternative fuels listed in ATCM sections 93115.5(a)(2) through (6).

Stationary ATCM section 93115.6(a)(3)(A)(c) limits operation of the diesel-fueled generator (S-1) to 50 hours per year for maintenance and testing. Engine operation for CAISO Enrolled Demand Response is limited to 500 hours per year. Engine operation for emergency use is not limited by the ATCM.

Emission Standards and Exhaust Levels

Pollutant	Exhaust (g/bhp-hr)	
	Emission Standards	Exhaust Levels
HC	n/a	-
NOx	n/a	-
NMHC+NOx	7.9	7.9
CO	8.5	2.55
PM	0.15	0.0225

S-1 is subject to the recordkeeping and reporting requirements of ATCM sections 93115.10(a), (d)(1), and (f). The requirements of section (a) were met when the District accepted the application for S-1 submitted by Humboldt Creamery. The requirements of section (d)(1) and (f) will be met by permit conditions.

California Health and Safety Code Compliance

Public Notice, CH&SC §42301.6:

“Prior to approving an application for a permit to construct or modify a source which emits hazardous air emissions, which source is located within 1,000 feet from the outer boundary of a schoolsite, the air pollution control officer shall prepare a public notice in which the proposed project or modification for which the application for a permit is made is fully described.”

The requirements of the California Health and Safety Code §42301.6 do not apply because S-1 is not proposed to be permanently located within 1,000 feet of a K-12 school.

RECOMMENDATION

Operation of S-1 as described in this evaluation is expected to comply with all applicable State and Federal laws and District Rules and Regulations. Staff believes sufficient evidence exists for the APCO to make the determinations required under District Rule 102(A) and Rule 103(G). Thus, staff recommends that the conditional approval, in accordance with Rule 103(E), be granted to the applicant to operate the authorized equipment in accordance with a District Authority to Construct permit.

ATTACHMENT A

Emission Calculations

DRAFT

**Daily Emissions Analysis
Criteria and Hazardous Air Pollutants (HAPs)**

**Crystal Creamery, Inc. dba Humboldt Creamery
572 State Highway 1
Fortuna, CA 95540**

Source	Generator				Engine										Short Term							Daily								
	Make	Model	Size (kW)	Serial	Make	Model	Serial	Mfr Date	Size (kW)	Size (bhp)	Fuel	Max Fuel (gph)	Heat Input (mMBtu/hr)	CO	CO w/ DOC	NOx	PM/PM-10/PM-2.5	PM/PM-10/PM-2.5 w/DPF	SO2	VOC	HAPs	CO	CO w/ DOC	NOx	PM/PM-10/PM-2.5	PM/PM-10/PM-2.5 w/DPF	SO2	VOC	HAPs	
Source S-1 (Tier 1)	Cummins	2000 DQKC-2125	2,000	301026126	Cummins	QSK60-G6	33149734	6/25/01	2,180	2,922	Diesel	137.3	18.95	54.76	16.43	44.45	0.97	0.14	0.04	6.44	0.03	24	1314.16	394.25	1066.79	23.19	3.48	0.85	#####	0.68
Rule 110(E) Significance (lbs/day)																														

Engine Emission Factors:

Pollutant	AP-42 (> 600 hp)	EPA Tier 1 Limit	EPA Cert Test Data	Current Permit	With Controls	
CO	5.5E-03	8.5	1.0	0.75	8.5	2.55
NOx	0.024	6.9	7.5	5.59	6.9	w/DOC (assumes 70% reduction)
PM	0.0007	0.4	0.18	0.15	0.0225	85% reduction w/CARB Certified DPF as per ATCM for In-Use Stationary Prime
SO2	0.00012135					Diesel-Fueled CI Engines > 50 bhp
VOC	7.05E-04	1.0	0.25	0.19	1.0	EPA AP-42 w/ S = 0.0015% for > 600 hp
Emission Factor Used	EPA Engine Family 1CEXL060.ABA (Tier 1)					

Significance shown for PM 2.5
PM 10 Significance = 80

Hazardous/Toxic Pollutant Calculations (Conservative since does not account for 70% reduction in HAPs via DOC)

Source: EPA AP-42, Fifth Edition, October, 1996	Source S-1 (Tier 1)	
> 600 hp	lb/mmBtu	lb/hr
Benzene	7.76E-04	1.47E-02
Toluene	2.81E-04	5.32E-03
Xylenes	1.93E-04	3.66E-03
Formaldehyde	7.89E-05	1.49E-03
Acetaldehyde	2.52E-05	4.77E-04
Acrolein	7.88E-06	1.49E-04
Naphthalene	1.30E-04	2.46E-03
HAPs	1.49E-03	2.83E-02

For S-1 with DOC

CO Emissions @ 23 ppmvd @15% O2

Load	100%	Source
Power (BHP)	2922	Data Sheet
Power (kWm)	2180	Engine Nameplate
Power (kWe)	2,000	Generator Nameplate
CO (lb/hr)	1.17	Calculated (converting K Factor from NOx to CO by ratioing MW (28/46))
CO (g/bhp-hr)	0.18	Calculated
CO (ppm @ Actual)	17	Input to match 23 ppmvd @ 15% O2
CO (ppm @ 15% O2)	26	Calculated
EPA Method 19 Stack Gas Airflow (cfm)	15811.8	Calculated (Data Sheet = 15810 scf/min)
Fuel Flow Rate (Gal/Hr)	137.30	Data Sheet
Fuel Factor (dscf/min)	9190.0	EPA
Dry Basis Oxygen Correction Factor	5.45	Calculated
Heat Input Rate (mmBtu/hr)	18.95	Calculated
Exhaust O2 (%)	17.064	Typical Value (adjusted so that air flow matches data sheet)

MAX CO with DOC:	lb/hr
23 ppmvd @15% O2	1.17
70% Reduction	16.43
For Permitting	16.43

**Annual Emissions Analysis
Criteria and Hazardous Air Pollutants (HAPs)**

**Crystal Creamery, Inc. dba Humboldt Creamery
572 State Highway 1
Fortuna, CA 95540**

Source	Generator				Engine										Short Term							Capped Long Term							
	Make	Model	Size (kW)	Serial	Make	Model	Serial	Mfr Date	Size (kW)	Size (bhp)	Fuel	Max Fuel (gph)	Heat Input (mMBtu/hr)	CO	CO w/ DOC	NOx	PM /PM-10/PM 2.5	PM /PM-10/PM 2.5 w/DPF	SO2	VOC	HAPs	CO	CO w/ DOC	NOx	PM /PM-10/PM 2.5	PM /PM-10/PM 2.5 w/DPF	SO2	VOC	HAPs
Source S-1 (Tier 1)	Cummins	2000 DQKC-2125	2,000	301026126	Cummins	QSK60-G6	33149734	6/25/01	2,180	2,922	Diesel	137.3	18.95	54.76	16.43	44.45	0.97	0.14	0.04	6.44	0.03	13.69	4.11	11.11	0.24	0.04	0.01	1.61	0.01
Rule 110(E) Significance (tpv)																													

Engine Emission Factors:

Pollutant	AP-42 (> 600 hp)		EPA Tier 1 Limit		EPA Cert Test Data		Current Permit	With Controls	Notes
	(lb/hp-hr)	g/hp-hr	g/kW-hr	g/hp-hr	g/kW-hr	g/hp-hr	g/hp-hr	g/hp-hr	
CO	5.5E-03	8.5	1.0	0.75	8.5	2.55	w/DOC (assumes 70% reduction)		
NOx	0.024	6.9	7.5	5.59	6.9				
PM	0.0007	0.4	0.18	0.13	0.15	0.0225	85% reduction w/CARB Certified DPF as per ATCM for In-Use Stationary Prime Diesel-Fueled CI Engines > 50 bhp		
SO2	0.00012135						EPA AP-42 w/ S = 0.0015% for > 600 hp		
VOC	7.05E-04	1.0	0.25	0.19	1.0				
Emission Factor Used									
EPA Engine Family		1CEXL060.ABA (Tier 1)							

Significance shown for PM 2.5
PM 10 Significance = 15

Hazardous/Toxic Pollutant Calculations (Conservative since does not account for 70% reduction in HAPs via DOC)

Source: EPA AP-42, Fifth Edition, October, 1996	Source S-1 (Tier 1)	
> 600 hp	lb/mmBtu	lb/hr
Benzenes	7.76E-04	1.47E-02
Toluene	2.81E-04	5.32E-03
Xylenes	1.93E-04	3.66E-03
Formaldehyde	7.89E-05	1.49E-03
Acetaldehyde	2.52E-05	4.77E-04
Acrolein	7.88E-06	1.49E-04
Naphthalene	1.30E-04	2.46E-03
HAPs	1.49E-03	2.83E-02

For S-1 with DOC

CO Emissions @ 23 ppmvd @15% O2

Load	100%	Source
Power (BHP)	2922	Data Sheet
Power (kWm)	2180	Engine Nameplate
Power (kWe)	2,000	Generator Nameplate
CO (lb/hr)	1.17	Calculated (converting K Factor from NOx to CO by ratioing MW (28/46))
CO (g/bhp-hr)	0.18	Calculated
CO (ppm @ Actual)	17	Input to match 23 ppmvd @ 15% O2
CO (ppm @ 15% O2)	26	Calculated
EPA Method 19 Stack Gas Airflow (scfm)	15811.8	Calculated (Data Sheet = 15810 scf/min)
Fuel Flow Rate (Gal/Hr)	137.30	Data Sheet
Fuel Factor (dscf/min)	9190.0	EPA
Dry Basis Oxygen Correction Factor	5.45	Calculated
Heat Input Rate (mmBtu/hr)	18.95	Calculated
Exhaust O2 (%)	17.064	Typical Value (adjusted so that air flow matches data sheet)

MAX CO with DOC:	lb/hr
23 ppmvd @15% O2	1.17
70% Reduction	16.43
For Permitting	16.43