

NORTHWEST CLEAN AIR AGENCY

In the Matter of Additional Action Required by:)
)
) **PROPOSED** AGREED COMPLIANCE
) ORDER
 EDALEEN COW POWER, L.L.C.)
)
) 1990-2021-03
)
 TO: Scott Engels
 Chief Financial Officer
 9593 Guide Meridian
 Lynden, WA 98264

I.

Jurisdiction

This Agreed Compliance Order ("Order") is issued pursuant to the authority of RCW 70A.15.2040 and NWCAA Regulations 103 and 121.

II.

Findings of Fact

Northwest Clean Air Agency (NWCAA) makes the following Findings of Fact:

- A. Edaleen Cow Power, L.L.C. (ECP) owns an anaerobic digester for the purpose of treating dairy manure and also receives offsite wastes for treatment in the system.
- B. Regenix LLC performs daily operation and maintenance services of the ECP digester.
- C. The anaerobic digester at ECP is an in-ground, plug flow design, (GHD design) operating in the range of 100 degrees F.
- D. Biogas containing methane, carbon dioxide, hydrogen sulfide, and other gases is a byproduct of the anaerobic digester process.
- E. ECP recovers energy from the biogas through and engine. The engine is coupled with a generator providing power to the grid and waste heat is used to heat the digester.

- F. The system produces more biogas than the engine can recover. Excess biogas is sent to a flare for combustion prior to release to atmosphere.
- G. Order of Approval to Construct (OAC) 1112a Condition 1 limits biogas hydrogen sulfide concentration to 350 parts per million by volume, dry as a 30-day rolling average and 550 parts per million by volume, dry at all times.
- H. The ECP digester uses aeration to manage hydrogen sulfide in biogas. Biogas hydrogen sulfide content varies according to the biological state of the digester: Historical hydrogen sulfide measurements at the facility range from less than 100 ppm to greater than 2,300 ppm.
- I. ECP started up the anaerobic digester on or about October 8, 2020, after an extended facility shutdown to repair a collapsed roof.
- J. ECP provided regular updates to NWCAA regarding biogas quality, including hydrogen sulfide content and other operational details between October 2020 and February 2021.
- K. Initial measurements of hydrogen sulfide in the biogas were as high as 2300 ppm in October 2020 and remained in excess of permitted limits through February 2021.

III.

Regulatory Basis

- A. NWCAA 300.13
- B. NWCAA 300.25

IV.

Determinations

Based upon the foregoing Findings of Fact and Regulatory Basis, NWCAA makes the following Determinations:

- A. Between October 2020 and January 2021, the hydrogen sulfide in the biogas remained out of compliance with the limits in OAC 1112a Condition 1.
- B. The ECP anaerobic digester design and operating controls, including aeration, are insufficient to assure continuous compliance with applicable biogas hydrogen sulfide content limits, particularly during startup and upset events.

- C. Add-on control, in the form of a biological desulfurization reactor, will assure continuous compliance with the biogas hydrogen sulfide content limits at the ECP facility in the future, including startup and upset events.
- D. ECP is approved to install the biological desulfurization reactor under OAC 1112a but the permit did not required its installation.
- E. Because the equipment was approved under OAC 1112a, NWCAA 300.25 is not triggered by fulfillment of the terms of this order.

V.

Terms of Order: Actions to Be Taken

Based on the forgoing Facts, Regulatory Basis, and Determinations, it is hereby ordered that Edaleen Cow Power, L.L.C. take the following actions:

- A. Investigate and if successful, implement the use of additives to reduce hydrogen sulfide content in the biogas until compliance with the limits in OAC 1112a Condition 1 can be maintained without the additives.
- B. Construct and commence operation of the biological desulfurization reactor on or before June 30, 2021.
- C. Notify NWCAA of the biological desulfurization reactor operation commencement in writing within 7 days.
- D. Operate the biological desulfurization reactor to treat all biogas on a continuous basis and in accordance with OAC 1112a Condition 3 (or superseding provision) unless written approval has been granted by NWCAA to discontinue or replace the technology. This provision allows for the bypass of the biological desulfurization reactor for reasonable maintenance and repair activities with daily testing of biogas sulfur content and recordkeeping. This provision does not negate applicable limitations as permitted by the NWCAA or in regulation.

VI.

Terms and Definitions in Order

Unless otherwise specified, the definitions set forth in NWCAA Regulation 200, WAC 173-400, RCW 70A.15, shall control the meanings of the terms used in this Agreed Order.

VII.

Satisfaction of Order

The provisions of this Agreed Order, as amended by any modifications, shall be deemed satisfied upon Edaleen Cow Power, L.L.C. receipt of written notification of such satisfaction from Northwest Clean Air Agency and upon compliance with all provisions of this Agreed Order.

VIII.

Enforcement

Pursuant to RCW 70A.15.3150 and 3160, this Order may be enforced by the Northwest Clean Air Agency.

IX.

Order Not Subject to Appeal

The terms of this Order having been agreed to by both parties, it is further stipulated that the same shall be final and not be subject to appeal in accordance with RCW 43.21B.230 and NWCAA Regulation 122.

Effective date of this Order: _____

ORDERED BY:
NORTHWEST CLEAN AIR AGENCY

By: _____

Mark Buford,
Executive Director

AGREED BY:
EDALEEN COW POWER, L.L.C.

By: _____

Scott Engels
Chief Financial Officer