AGENDA: 4

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Davina Hurt and Members of the Finance and Administration Committee

From: Chairperson Valerie J. Armento, Esq., and Members of the Hearing Board

Date: October 22, 2024

Re: Hearing Board Quarterly Report: July – September 2024

RECOMMENDED ACTION

No action requested at this time.

DISCUSSION

This report covers the second calendar quarter (July - September) of 2024.

- Held two hearings;
- Processed one order: and
- Collected a total of $18,112.00 in Hearing Board filing fees

Below is a detail of Hearing Board activity during the same period *(activities for Docket No. 3755 extend into October 2024):*

Docket: 3752 – California State University at San Jose – Request for Regular Variance

Location: Santa Clara County; City of San Jose

Regulation(s): Regulation 9, Rule 9, Section 301.2 (Inorganic Gaseous Pollutants, Nitrogen Oxides From Stationary Gas Turbines, Emissions Limits); and Permit Condition 12140.3

Synopsis: San Jose State University (SJSU) is a public university in the California State University system. The campus operates a Cogeneration Plant to provide electricity and steam for heating campus buildings. Additionally, SJSU operates three auxiliary boilers that are operated as backup to the Cogeneration Plant for steam to heat buildings and serve process loads. This application is regarding the facility's cogeneration plant (6MW output, S1), the associated duct burner (44.44 MMBTU/hr, S2), and auxiliary boiler #3 rated at 37.5 MMBTU/hr (S7).

From Applicant:

The Cogen Plant is used for cost-effective electricity and steam generation. It is essential to the SJSU campus operations because it provides resilient power and heating energy at a cost savings

of approximately $2M/year compared to PG&E purchases of electricity. The auxiliary boilers are used for backup when the cogeneration system is not available. They are essential to the SJSU campus operations because cogeneration systems have planned and unplanned outages and steam service to campus must be maintained continuously to support campus operations.

Cogen Plant:

The District informed SJSU that it cannot retest S1 and S2 until the stack is reconfigured to comply with EPA Method 1. SJSU cannot complete this work, including the necessary permitting to do so, by the deadline to complete the re-test set forth in NOV-A63328 of May 23, 2024. SJSU became aware that S1 and S2 were not in compliance with the nitrogen oxides (NOx) emission limit of Rule 9-9-301 when it received NOV-A63328 from the District on April 8, 2024. SJSU has conducted portable testing of NOx emissions from S1 and S2 since the NOV was issued, and all sample results indicated the stack is in compliance with Rule 9-9-301.. SJSU intends to comply with NOV-A63328 by constructing the necessary scaffolding so that the source re-test can be completed consistent with EPA Method 1, as required by District staff (or, in the alternative, conducting the re-test consistent with ST-18 if approved by the District). Assuming the re-test indicates S1 and S2 meet the emission limits of Rule 9-9-301, the sources will be in compliance. If the re-test does not indicate compliance with the emission limits, SJSU will pursue installation of steam enhancement technology.

Boiler 3 (S7):

SJSU submitted an application for a Permit to Operate (PTO) on May 16, 2022 (A/N 31697). The PTO has not been issued by the District, and it is outside SJSU's reasonable control to obtain this permit. Once issued, SJSU will not need to limit this boiler to less than 10% of its annual maximum heat capacity, as required by Permit Condition 12140.3. SJSU requests that the District issue the PTO or in the alternative grant a variance from Permit Condition 12140.3. SJSU became aware that it was not in compliance with Rules 2-1-301 and 2-1-302 on or about April 15, 2022, and promptly submitted an application for an updated PTO on May 16, 2022. Based on available source tests, to SJSU's knowledge Boiler 3 (S7) is in compliance with the applicable NOx emission limits of Rule 9-7-307, and is merely awaiting issuance of the PTO.

Requested Period of Variance: May 23, 2024 to December 31, 2024.

Estimated Excess Emissions: None estimated by the Applicant.

Fees collected this quarter: $9,256.00 in filing fees. *(NOTE: This amount was included in the total for the Hearing Board Quarterly Report for April to June 2024, and is not included in the total for the Hearing Board Quarterly Report for July to September.)*

Status: Application for Regular Variance filed by Applicant on May 22, 2023. Hearing date to be determined. On July 9, 2024, SJSU contacted the Air District's Source Test Division to notify of possible retest dates for the Cogen Plant's gas turbine (S-1) and duct burner (S-2). SJSU will perform the retests of S-1 and S-2 on October 29, 2024, in accordance with test methods that were approved by Air District staff. SJSU will notify the Air District's Source Test Division of the planned retest date prior to the test. The parties have continued to hold the variance application and wait on setting a hearing date. SJSU and BAAQMD technical staff are continuing to address

the underlying issues and it is the parties' hope to negotiate a settlement agreement that will enable the Applicant to withdraw the variance application.

Docket: 3753 – Ameresco Keller Canyon RNG LLC – Request for Short Variance

Location: Contra Costa County; City of Pittsburg

Regulation(s): Regulation 8, Rule 34, Section 412 (Organic Compounds, Solid Waste Disposal Sites, Compliance Demonstration Test); Regulation 2, Rule 1, Section 307 (Permits, General Requirements, Failure to Meet Permit Conditions); and Permit Conditions 27707.12 and 27708.12

Synopsis: Ameresco Keller Canyon LLC operates a renewable natural gas (RNG) facility that processes landfill gas (LFG) from the Keller Canyon Landfill into pipeline quality natural gas (process S-1). Waste gas produced by this process is controlled by one Air Clear Thermal Oxidizer (A-1) rated at 25. 3 MM Btu/hr and one John Zink Enclosed Flare (A-2) rated at 35.8 MMBtu/hr. There are three main systems used to create RNG from LFG: a temperature swing adsorption system, a carbon dioxide (CO2) membrane system, and a nitrogen (N2) pressure swing adsorption system. Waste gases from the systems contain carbon dioxide, methane, oxygen, nitrogen, siloxanes, and hydrocarbons. These waste gases are sent to either the thermal oxidizer (TOX) (A-1) or the enclosed flare (A-2) for destruction. The TOX is the primary control device. The enclosed flare is used to control waste gases during transient or upset scenarios. The control devices use preprocessed RNG (minimally processed LFG with hydrogen sulfide removed) and natural gas as supplemental fuels to startup and/or maintain combustion temperature.

From Applicant:

Prior to injecting product RNG into the commercial pipeline, Ameresco must satisfy specific Pacific Gas & Electric (PG&E) pre-injection testing requirements. Ameresco began sampling for the PG&E gas testing program on June 19, 2024. Ameresco estimates that the PG&E gas test program will be completed by September 1, 2024. Following the start of injection into the commercial pipeline, Ameresco will require several weeks to tune the plant so that it can effectively process higher flows of landfill gas. During the testing and tuning phase, Ameresco is destroying RNG product gas in the TOX and enclosed flare. If Ameresco is required to conduct source testing prior to injecting product gas into the pipeline, the source test will not be representative of normal operations. The waste gas will contain a large volume of pipeline quality RNG which will create a different and likely cleaner emissions profile when combusted. PG&E pre-injection test requirements are primarily dictated by PG&E Rule 29 as well as PG&E Rule 21 . Ameresco must comply with these requirements prior to injecting RNG into the commercial pipeline. Until commercial injection is possible, the RNG will be destroyed in the TOX and enclosed flare at rates lower than the maximum operating rate, creating an emissions profile that is likely cleaner than would otherwise occur during normal operations. Ameresco is proactively taking steps to obtain a short variance until source testing can be completed. Ameresco is working as expeditiously as possible to complete the pre-injection test requirements and tuning to achieve normal operations. Source testing is scheduled for the week of September 23, 2024. This is the earliest that Ameresco believes the facility will operating with a suitable volume of RNG injection into the pipeline to test at or near the maximum operating rate. If Ameresco were required to comply with the current source test deadline, it would expend over $100,000 to conduct a test that would essentially be

meaningless in terms of air pollutant emissions measurements. A second test would need to be conducted after the plant begins commercial operation, doubling the source testing cost. The source testing deadline is 1,920 operating hours or 120 days from the date of initial operation, whichever comes first. By curtailing or terminating operations, Ameresco would only worsen the compliance deviation by delaying the completion of pre-injection testing and commercial operation. Further, it would not be possible to conduct source testing if the facility curtailed or terminated operations.

Requested Period of Variance: August 22, 2024 to November 20, 2024.

Estimated Excess Emissions: None estimated by the Applicant.

Fees collected this quarter: $6,391.00 in filing fees.

Status: Application for Short Variance filed by Applicant on August 12, 2024; Notice of Hearing (September 17, 2024) filed and issued August 13, 2024; Proposed Conditions submitted by Air District on September 16, 2024; hearing held on September 17, 2024; Order Granting Short Variance filed and issued on September 24, 2024.

THE HEARING BOARD ORDERED:

1. The Applicant is granted a Short Variance from Regulation 8, Rule 34, Section 412; Regulation 2, Rule 1, Section 307; and Permit Conditions 27707.12 and 27708.12 regarding the timing of the source testing of A-1 and A-2, subject to the terms herein.

2. The Applicant shall comply with the Conditions attached to the September 16, 2024 letter, attached to this Order as Attachment A, as well as with all applicable District regulations except to the extent explicitly subject to this Short Variance.

3. This Short Variance shall go into effect on the date upon which this Order is executed retroactive to August 22, 2024 and shall expire upon the earlier of the satisfactory completion of the source testing or November 20, 2024.

<u>Conditions</u>

1. Ameresco shall provide the following measurements on a weekly basis:

- *a. Untreated landfill gas at inlet to S-1 expressed as kSCF/day and MMBtu/day;*
- *b. Amount of renewable natural gas product expressed as MMBtu/day;*
  - *i. Ameresco should indicate the amount of renewable natural gas product being injected into the PG&E pipeline, the amount flared, and the amount of renewable natural gas product going to the thermal oxidizer.*
- *c. Thermal Oxidizer (A-1): PPRNG and Waste Gas expressed as kSCF/day and MMBtu/day;*
- *d. Enclosed Flare (A-2): PPRNG and Waste Gas expressed as kSCF/day and MMBtu/day; and*
- *e. Carbon Scrubber (A-3): PPRNG expressed as kSCF/day and MMBtu/day*

2. When reporting the information required by Sections 1.a. through 1.e. above, Ameresco shall indicate the location and identification number of the flow rate device where the sample reading was taken.

*3. Ameresco shall provide an analysis of sulfur compounds in the gas of A-3 as described in Authority to Construct condition No. 27707, Part 9.d. and condition No. 27708, Part 9.d. on a weekly basis. The waste gas to be analyzed shall be measured at the outlet of A-3. If the portable hydrogen sulfide analysis method is used, the TRS concentration shall be calculated by multiplying the measured hydrogen sulfide (H2S) concentration by 1.2 where (TRS = 1.2 * H2S).*

4. Ameresco shall send the District updates of the anticipated source test dates for sources A-1 and A-2 on a weekly basis.

5. Ameresco shall begin to provide the gas flow and heat input data, flow rate device information, sulfur analysis, and source test date updates (collectively, the "requested information") listed in Sections 1 through 4 above to the District on September 27, 2024. Ameresco shall continue to provide the requested information listed in Sections 1 through 4 above on a weekly basis thereafter.

6. Ameresco shall submit the requested information listed in Sections 1 through 4 above to the District via email to the following email addresses:
mkiffe@baaqmd.gov, akobayashi@baaqmd.gov, and mnishiki@baaqmd.gov.

Docket: 3754 – Redwood Landfill, Inc. – Request for Interim and Short Variance

Location: Marin County; City of Novato

Regulation(s): Regulation 2, Rule 1, Section 307 (Permits, General Requirements, Failure to Meet Permit Conditions); and Permit Conditions 25634, Section 5.a and 19867, Sections 16 and 18.c

Synopsis: Redwood Landfill and Recycling Center (the “Facility”) is an essential public service Class III landfill that is permitted for and has received non-hazardous municipal solid waste (MSW) since 1958. The Facility covers 420 acres, with 222.5 acres dedicated to waste disposal. Relevant to this variance request, the Facility includes two flares (A-51 and A-60), two landfill gas treatment systems (S-71 and A-80) and two internal combustion (IC) engines (S-64 and S-65) operated at the onsite landfill gas-to-energy plant (the “energy plant”). The Facility operates under an Air District Permit to Operate (PTO) which sets forth conditions for landfill operations, including operation of a landfill gas collection and control system (GCCS). LFG collected in the Facility’s GCCS is routed through one of two treatment systems (S-71 or A-80) to control total reduced sulfur (TRS) before the LFG is either routed to the energy plant engines S-64 and S-65, which supply power to the PG&E electrical grid, or to one of the Facility’s two enclosed flares (A-51 and A-60).

From Applicant:

On August 22, 2024, the Facility initiated two-day scheduled source tests for engines S- 64 and S-65. During the source test for S-64, the engine generator malfunctioned and could not maintain

operation long enough to complete testing. Petitioner determined that bearings in the engine's generator had failed, causing significant damage to the rotating shaft inside the generator. These issues resulted in the engine shutting down in the middle of the test. The S-64 generator has been removed and sent to the East Coast for repairs. Consequently, S-64 will be offline for several weeks.

During the testing for S-65, there was a power outage, requiring the test to be cancelled. It was also discovered that there were issues with the urea injection system used for NOx control on the engine.

On August 27, 2024, it was determined that the S-65 NOx control system was compromised to the point that the engine had to be shut down to avoid non-compliance with engine-related permit conditions.

With both energy plant engines offline, it was necessary to partially open the valve upstream of Flare A-60 (the "east side valve"), which is normally kept closed during routine operations. Opening the valve was necessary to maintain a vacuum on the east side of the GCCS and to prevent fugitive LFG from being emitted. The east side valve is only opened during unforeseen circumstances that threaten proper operation of the GCCS—such as this situation. The result of partially opening this valve is that both treated gas from the west side of the GCCS and untreated gas from the east side are being routed to control device A-60, causing flare inlet H2S concentrations to increase to approximately 500 ppmv and
potentially contributing to exceedances of the 350 ppmv annual average limit for TRS compounds (calculated as H2S) in collected LFG as stated in PTO Condition 19867, Section 18.c. Further, the routing of untreated LFG to the flare violates the requirement in PTO Condition 25634, Section 5.a. to route all flared gas through A-80. See id. at p. 40 (providing that "[w]hen the owner/operator uses A-80 to absorb H2S for SO2 control, the owner/operator shall route all of the [LFG] that goes to the flare through A-80").

On September 10, 2024, Petitioner had a technician from its NOx emission control system vendor, Johnson Matthey, onsite to evaluate S-65. It was determined that the engine's NOx emission control system could not be repaired immediately. Petitioner is awaiting a replacement catalyst and other components needed for full repair. S-65 is thus expected to be out of service for the next few weeks. Because there is no immediate way for Petitioner to operate the GCCS in compliance with the permit terms stated herein, variance coverage is requested.

As the exigent circumstances described could not have been anticipated in sufficient time to issue public notice, good cause exists for an interim variance to be granted. See Cal. Health & Safety Code § 42351(b) (providing that the Hearing Board may grant an interim variance for good cause stated in the order granting such a variance).

Separately, for operational and emission control flexibility, Petitioner has initiated a project to increase the treatment capacity of A-80 and to re-configure the GCCS so that gas from both east and west sides of the system can be routed through A-80 for treatment (the "A-80 upgrade project"). The A-80 upgrade project entails the addition of four (4) 10,000-lb. treatment vessels containing activated carbon, resulting in a significant increase of the system's treatment capacity. It also requires upgrades and reconfiguration of GCCS piping. To allow additional operational flexibility and gas treatment options in the event of future engine breakdowns, Petitioner further

plans to re-establish a preexisting line to serve as a connection point between the S-71 treatment system and the east side of the GCCS. Once re-established, this line will allow Petitioner to move LFG from the east side of the GCCS through the carbon vessels at S-71 before flaring at control device A-60, in case the A-80 treatment system is temporarily unavailable for maintenance or other reasons in the future.

Requested Period of Variance: September 13, 2024 to December 12, 2024, or upon approval and commissioning of the A-80 upgrade project, whichever is sooner.

Estimated Excess Emissions: Although initially there was an estimate of excess emissions, prior to the variance hearing it was determined there were no excess emissions. As a result, the charge of a violation of Permit Condition 19867 Section 18.c was dropped.

Fees collected this quarter: $11,721.00 in filing fees.

Status: Application for Interim and Short Variance filed by Applicant on September 13, 2024; Notice of Hearing for Interim Variance only (September 24, 2024), with Short Variance hearing to be held on a future date, filed and issued September 13, 2024; joint request for 14-day continuance of Hearing for Interim Variance only submitted by both parties on September 18, 2024 (approved by Hearing Board Chair); joint request for both the Interim and Short Variance hearings to be heard on October 8, 2024 submitted by both parties on September 27, 2024 (approved by Hearing Board Chair); Notice of Continued Hearings for both Interim and Short Variances (October 8, 2024) filed and issued on September 27, 2024; Interim and Short Variance hearings held October 8, 2024; Order Granting Short Variance filed and issued on October 21, 2024.

THE HEARING BOARD ORDERED:

The Petitioner is granted both an Interim and a Short Variance from Regulation 2, Rule 1, Sections 307 and from Permit Conditions 25634, Section 5.a and 19867, Section 16. Combined, the Variances cover the period from September 13, 2024 through December 12, 2024, or upon approval and commissioning of the A-80 upgrade project, whichever is earlier.

The Short Variance granted is subject to the following conditions set forth in modified Joint Exhibit 1 and replicated here:

1. *Redwood shall provide three analyses of sulfur compounds in the landfill gas.*
    a. *The first two analyses shall be of the landfill gas before it is abated by either S-71 or A-80 ("pre-abated landfill gas"). Two pre-abated landfill gas samples shall be drawn from locations upstream of both S-71 and A-80.*
    b. *The third analysis shall be of the landfill gas post-abatement. The post-abatement landfill gas to be analyzed shall be drawn from the sample point upstream from primary flare, A-60.*
    c. *All samples shall be drawn on the same calendar day and shall be drawn within seven (7) calendar days from the date the Variance Order is issued, while the S-64 and S-65 engines are offline and during the A-80 upgrade project while landfill gas is abated only by the existing 6,000-lb vessels in the A-80 treatment system and the existing vessels in the S-71 system.*
    d. *The samples shall be analyzed by laboratory testing and the test results shall*

be reported to the District within three (3) calendar days from the date that lab results are received.

2. *Redwood shall send the District weekly updates regarding the repair and operational status of S-64 and S-65. Redwood shall submit the first update within seven (7) calendar days from the date the Variance Order is issued and on a weekly basis thereafter or as requested by the District.*
3. *Redwood shall notify the District within 24 hours of S-64 and S-65 each returning to full operation.*
4. *Redwood shall record the position (e.g., "open" or "closed") of the East side valve and the S-71 valve whenever the position of the valves change, including the date and time of the change. Redwood shall begin recording the positions of the East side valve and S-71 valve – including dates and times of changes – within 24-hours of the issuance of the Variance Order. Redwood shall make these records available upon request by the District.*
5. *Redwood shall submit the requested information to the District via email to the following email addresses: lgriswold@baaqmd.gov, rmurray@baaqmd.gov, compliance@baaqmd.gov, and mnishiki@baaqmd.gov.*

Respectfully submitted,

/S/ Valerie J. Armento

Valerie J. Armento, Esq.
Chair, Hearing Board

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