



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW
ATLANTA, GEORGIA 30303-8960

July 25, 2023

Mr. Jack Mann
Diversified Vapor Technologies, LTD
840 Lawrence Road, Suite B
Kemah, Texas 77565

Dear Mr. Mann:

This letter is in response to your letter dated June 29, 2023, requesting an alternative monitoring procedure (AMP) and stack testing waiver for portable thermal oxidizing units (TOUs) used by Diversified Vapor Technologies (DVT) on a temporary basis to control hydrogen sulfide (H₂S) emissions during degassing of tanks, vessels, and pipes at petroleum refineries in Region 4.¹ DVT's AMP covers refineries subject to Title 40, Code of Federal Regulations (C.F.R.) Part 60, Subpart J (Standards of Performance for Petroleum Refineries) and Subpart Ja (Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007). On July 5, 2023, the Environmental Protection Agency requested additional information from you and received the information from your consultant, PEI, on the same day. Based upon our review, the EPA conditionally approves DVT's AMP and grants a performance testing waiver for degassing activities that use the temporary TOUs at refineries located in Region 4 states, as explained in the remainder of this letter, and further delineated in the enclosure to this letter.

DVT performs degassing services for tanks, vessels, and pipes at petroleum refineries. The use of the TOUs to combust vapors that are refinery fuel gas vent streams results in the TOUs being considered fuel gas combustion devices subject to either New Source Performance Standards (NSPS) Subpart J or Subpart Ja, depending on the refinery-specific requirements. NSPS Subparts J and Ja prohibit the owner or operator of a fuel gas combustion device from burning vent gas generated at a petroleum refinery that contains hydrogen sulfide (H₂S) in excess of the following limits:

1. 230 milligrams H₂S per dry standard cubic meter (mg/dscm), per 40 C.F.R. § 60.104(a)(1).
2. 162 parts per million by volume (ppmv) H₂S determined hourly on a 3-hour rolling average basis, and 60 ppmv H₂S determined daily on a 365-day successive calendar day rolling average basis, per 40 C.F.R. § 60.102a(g)(1)(ii).

NSPS Subparts J and Ja require the owner or operator of a fuel gas combustion device to install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) to monitor and record the concentration of H₂S in the fuel gases before being burned in a combustion device, per 40 C.F.R. §§ 60.105(a)(4) and 60.107a(a)(2). Since DVT's TOUs are used on a temporary basis at each facility, DVT contends that installation of H₂S CEMS(s) would not be economically feasible and would be technically impractical to implement.

¹ The AMP approval is limited to states within the EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee).

Based on the information provided, the EPA agrees that, for the specific portable and temporary combustion devices used, as described in your request, it is impractical to require monitoring via an H₂S CEMS as specified by NSPS Subparts J and Ja. Therefore, in accordance with 40 C.F.R. § 60.13(i), the EPA conditionally approves DVT's AMP. In addition, based on DVT's proposed alternate testing protocol to be used during each degassing event, the EPA waives performance testing pursuant to 40 C.F.R. § 60.8(b)(4). Our conditional approval is limited to the monitoring of H₂S for the operations described in DVT's AMP as delineated in the enclosure to this letter, and does not alter DVT's or a particular refinery's obligations to meet all other applicable NSPS requirements, including, but not limited to, the following NSPS general provisions:

1. The requirement to maintain and operate affected facilities and associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions, per 40 C.F.R. § 60.11(d); and,

2. The prohibition against concealing emissions which would otherwise constitute a violation of an applicable standard, including the use of gaseous diluents to achieve compliance with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere, per 40 C.F.R. § 60.12.

This conditional approval is based upon prior consultation with the EPA's Office of Air Quality Planning and Standards and the EPA's Office of Enforcement and Compliance Assurance and is consistent with similar approvals issued by the EPA. This conditional approval will automatically expire on the effective date of any change to NSPS Subparts J or Ja that directly affects the requirements to monitor H₂S concentrations in fuel gases burned in portable combustion devices. In addition, if DVT's use of the TOUs during degassing operations changes from the representations made in the AMP request, this approval will become null and void. Furthermore, if an affected refinery's operations change such that the sulfur content of the off-gas vent streams increases beyond levels specified in the enclosure to this letter, then the refinery must document the change(s) so that DVT may follow appropriate steps in either 40 C.F.R. §§ 60.105(b)(3)(i)-(iii) or 60.107a(b)(3)(i)-(iii), based upon refinery-specific requirements.

If you have any questions about this conditional approval, please contact Tracy Watson of my staff at (404) 562-8998 or by email at watson.marion@epa.gov.

Sincerely,

CAROLINE
CAROLINE FREEMAN
Digitally signed by
Date: 2023.07.25
19:42:18 -04:00

Caroline Y. Freeman

Director

Air and Radiation Division

Enclosure

cc: Thomas Haney, PEI
Maria Malave, EPA OECA
Brenda Shine EPA OAQPS

ENCLOSURE

Alternative Monitoring Procedure and Performance Testing Waiver Evaluation for Hydrogen Sulfide in Vapors Combusted in a Portable Thermal Oxidizer Units During Degassing of Tanks, Vessels, and Piping at Various Petroleum Refineries

Diversified Vapor Technologies (DVT), LTD, proposed an alternative monitoring procedure (AMP) in a letter to the U.S. EPA Region 4 dated June 29, 2023, for monitoring hydrogen sulfide (H₂S) in vapors that are combusted in portable thermal oxidizer units (TOUs). Under the AMP, DVT will perform degassing of tanks, vessels, and piping at various refineries located in Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee) using the temporary TOUs as an emission control device. Since DVT's TOUs will combust vapors that may be considered refinery fuel gas, the TOUs are combustion devices subject to New Source Performance Standards (NSPS) for Petroleum Refineries, Title 40, Code of Federal Regulations (C.F.R.), Part 60, Subpart Ja. While the TOUs are subject to NSPS Ja, the incoming fuel gas streams from degassing at various refineries may be subject to either NSPS J or Ja. Since the TOUs are portable units that are used on a temporary basis and are not permanent equipment owned or operated by the petroleum refineries, the EPA agrees that it is not economically feasible and is technically impractical to install H₂S continuous emission monitoring system (CEMS) as currently required under NSPS Subparts J or Ja. Additionally, in accordance with DVT's alternate testing protocol, the EPA waives the requirement to conduct performance testing for each degassing event, consistent with 40 C.F.R. § 60.8(b)(4).

Based upon DVT's representations of the degassing operations that will be covered by the AMP, the operation of the TOUs, and other information furnished in the company's AMP request of June 29, 2023, the following conditions must be met as part of this AMP approval:

1. Each refinery where DVT conducts degassing operations shall provide DVT the following information:
 - (i) A list of the tanks, vessels and piping where degassing operations occur.
 - (ii) A site plan diagram showing the locations and orientation of the tanks, vessels, and piping where degassing operations will occur, and the locations where DVT may locate the TOU and other equipment necessary for the degassing operations.
 - (iii) The names and titles of responsible refinery individuals who will review and approve degassing grab sample records and log sheets for the refinery.
 - (iv) A list of the materials stored in each tank, vessel, or piping area, and Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) for each material.
 - (v) A list of operating restrictions, if any, to ensure that degassing operations conform to special conditions in the refinery's air permits.
 - (vi) If applicable, a copy of the refinery's AMP for degassing operations that includes the use of portable control and combustion devices.
2. DVT shall use a portable H₂S meter to determine the concentration of H₂S entering each DVT portable TOU (i.e., a "grab sample"). The portable meters must be capable of measuring H₂S concentrations from 0-200 parts per million by volume (ppmv) with a resolution of 1 ppmv. Each grab sample shall be taken at the inlet of the TOU. As an alternative, H₂S length of stain colorimetric tubes may be used in place of the portable H₂S meter (Dräger Tube Hydrogen Sulfide 1/D 1-200 ppmv or equivalent). DVT shall record on the sample forms if length of stain colorimetric tubes are used in place of the portable meter.

3. For each discrete degassing event, DVT shall collect a grab sample (the "initial grab sample") for H₂S within 30 minutes of startup of the TOU. No monitoring is required during operating periods when the TOU does not combust gases generated by degassing and cleaning events.²
4. If the initial grab sample indicates an H₂S concentration less than or equal to 162 ppmv, then the inlet gas stream is deemed to meet the H₂S limits of NSPS J and Ja, and no further monitoring is required for that discrete degassing event.
5. If the initial grab sample indicates a H₂S concentration more than 162 ppmv, then for that discrete degassing event, the inlet gas stream is deemed to have exceeded the 230 milligrams H₂S per dry standard cubic meter (mg/dscm) limit specified in 40 C.F.R. § 60.104(a)(1) and the 162 ppmv limit specified in 40 C.F.R. § 60.102a(g)(1)(ii). DVT has a scrubber which it may use to further reduce the H₂S concentration of such a vent gas stream. After implementation of scrubbing or other concentration reduction measures, DVT must conduct additional testing to demonstrate compliance with the H₂S limits specified in 40 C.F.R. §§ 60.104(a)(1) and 60.102a(g)(1)(ii), by collecting and averaging three valid grab samples as follows:³
 - i. The initial grab sample;
 - ii. a grab sample taken between 61 and 120 minutes after startup of the TOU; and,
 - iii. a grab sample taken between 121 and 180 minutes after startup of the TOU.
6. DVT shall record the results of each grab sample, the key activities completed with each degassing operation, and other relevant information, on the forms included in the AMP request. DVT shall keep the records of all grab samples and degassing events for at least five years.
7. Within 5 business days after each discrete degassing event, DVT shall provide the owner or operator of the petroleum refinery where the discrete degassing event is performed the results of each grab sample, as well as a list of all dates and times when any grab sample indicated an H₂S concentration exceeded 162 ppmv. The purpose of this reporting requirement is to provide the owner or operator of the petroleum refinery with the data necessary for inclusion in excess emission reports and monitoring system performance reports required by 40 C.F.R. § 60.7(c).
8. Vapors from degassing operations shall be vented only to TOUs which are in full operation as described in the AMP petition.
9. Refineries must comply with the other applicable requirements of NSPS Subpart J or Ja that apply to the refinery fuel gas when PEI conducts degassing operations. The use of DVT's TOUs for control of H₂S and other refinery fuel gas vent stream pollutants at processes other than the degassing operations represented is not covered or authorized by this conditional AMP.
10. DVT shall follow its internal Standard Operating Procedures (SOP) for operation of the TOUs, as furnished by PEI, DVT's consultant, on July 5, 2023. DVT shall review and update the SOP at least once annually to ensure consistency with requirements of the AMP conditional approval, current air permits and authorizations, and applicable federal/state air emission rules.

² For example, sampling would not be required during time periods that commercially purchased propane is combusted for the purposes of heating up the TOUs to operating temperature prior to treatment of degassing and cleaning emissions, or during equipment cool down after the devices are no longer needed to treat emissions from degassing and cleaning events.

³ DVT can use this alternative averaging method of demonstrating compliance only if three valid grab samples are taken as specified and within the designated time periods.