

# Nitric Acid Production

## Subpart V, Greenhouse Gas Reporting Program

### OVERVIEW

Subpart V of the Greenhouse Gas Reporting Program (GHGRP) (40 CFR §§ 98.220 – 98.228) applies to any facility that produces nitric acid ( $\text{HNO}_3$ ) and meets the Subpart V source category definition. Some subparts have thresholds that determine applicability for reporting, and some do not. To decide whether your facility must report under this Subpart, please refer to 40 CFR § 98.221 and the GHGRP [Applicability Tool](#).

This Information Sheet is intended to help facilities reporting under Subpart V understand how the source category is defined, what greenhouse gases (GHGs) must be reported, how GHG emissions must be calculated and shared with EPA, and where to find more information.



## How is This Source Category Defined?

The nitric acid ( $\text{HNO}_3$ ) production source category consists of facilities that use one or more trains to produce  $\text{HNO}_3$  of any strength through the catalytic oxidation of ammonia ( $\text{NH}_3$ ).



## What GHGs Must Be Reported?

$\text{HNO}_3$  production facilities must report:

- Nitrous oxide ( $\text{N}_2\text{O}$ ) process emissions from each  $\text{HNO}_3$  train.

If multiple Greenhouse Gas reporting Program (GHGRP) source categories are co-located at a facility, the facility may need to report greenhouse gas (GHG) emissions under a different subpart. For example, facilities must report carbon dioxide ( $\text{CO}_2$ ),  $\text{N}_2\text{O}$ , and methane ( $\text{CH}_4$ ) emissions from each stationary fuel combustion unit under Subpart C (General Stationary Fuel Combustion Sources), found at 40 CFR §§ 98.30 – 98.38. Please refer to the relevant information sheet for a summary of the rule requirements for any other source categories located at the facility.



## How Must GHG Emissions Be Calculated?

$\text{HNO}_3$  production facilities must calculate  $\text{N}_2\text{O}$  emissions for each  $\text{HNO}_3$  train using one of the following two options:

- Calculate  $\text{N}_2\text{O}$  process emissions using Equation V-4.
  - Perform an annual performance test to measure the  $\text{N}_2\text{O}$  concentration and the volumetric flow rate from the absorber tail gas vent and the  $\text{HNO}_3$  production rate during the test.
  - Adjust the  $\text{N}_2\text{O}$  emissions to account for the amount of  $\text{N}_2\text{O}$  removed by the abatement device (e.g., nonselective catalytic reduction), if applicable, using the appropriate equation (Equation V-3a, Equation V-3b, Equation V-3c, or Equation V-3d). Facilities that use  $\text{N}_2\text{O}$  abatement devices (such as nonselective catalytic reduction) after the test point must determine a destruction factor

for the abatement device, the percent of time the abatement device operated, and the percentage of the vent stream that was directed to the abatement device. The destruction efficiency can be determined through process knowledge or test data or can be based on information specified by the abatement device manufacturer.

- Calculate the site-specific emission factor using the adjusted N<sub>2</sub>O process emissions and the HNO<sub>3</sub> production rate measured during the performance test.
- Directly measure N<sub>2</sub>O emissions using an EPA-approved alternative method to the site-specific emission factor.
  - All new alternative methods and any changes to a previously approved method must be approved by the Administrator prior to being used. Once approved an alternative method may be used in subsequent years provided no changes are made to the method.

A checklist for data that must be monitored is available here: [Subpart V Monitoring Checklist](#).



## What Information Must Be Reported?

In addition to the information required by the General Provisions in Subpart A, found at 40 CFR § 98.3(c), each HNO<sub>3</sub> production train must report the following information:

- Annual process N<sub>2</sub>O emissions from each HNO<sub>3</sub> train (metric tons (tonnes)).
- Annual process N<sub>2</sub>O emissions combined from all HNO<sub>3</sub> trains at the facility (tonnes).
- Annual HNO<sub>3</sub> production from the HNO<sub>3</sub> facility (tons, 100 percent acid basis).
- Number of HNO<sub>3</sub> trains.
- Number of different abatement technologies per train (if applicable).
- Types of abatement technologies used (if applicable).
- The date of installation for each type of abatement technology used (if applicable).
- Type of HNO<sub>3</sub> process used for each HNO<sub>3</sub> train (low, medium, high, or dual pressure).
- Number of times in the reporting year that missing data procedures were followed to measure HNO<sub>3</sub> production (months).
- Annual percent N<sub>2</sub>O emission reduction for all HNO<sub>3</sub> trains combined.

If a performance test was conducted and a site-specific emission factor was calculated, the following information must also be reported for each HNO<sub>3</sub> train:

- Test method used for the performance test.
- Number of times in the reporting year that a performance test had to be repeated.

If an Administrator approved alternative method was used to determine N<sub>2</sub>O process emissions, each annual report must include the following:

- Name of alternative method.
- Description of alternative method.
- Request date.
- Approval date.

Facilities using the site-specific emission factor method must enter certain data into the GHGRP *Inputs Verifier Tool* (IVT), which uses the data to calculate the GHG emissions and check for errors. The data entered in IVT are not collected by EPA.



## What Records Must Be Maintained?

Reporters are required to retain records that pertain to their annual GHGRP report for at least three years after the date the report is submitted. Please see the [Subpart A Information Sheet](#) and 40 CFR § 98.3(g) for general recordkeeping requirements. Specific recordkeeping requirements for Subpart V are listed at 40 CFR § 98.227.



## When and How Must Reports be Submitted?

Reporters must submit their annual GHGRP reports for the previous calendar year to the EPA by March 31<sup>st</sup>, unless the 31<sup>st</sup> falls on a Saturday, Sunday, or federal holiday, in which case reports are due on the next business day. Annual reports must be submitted electronically using the [electronic Greenhouse Gas Reporting Tool \(e-GGRT\)](#), the GHGRP's online reporting system. For facilities required to use the e-GGRT IVT, reporters must enter required data into the e-GGRT IVT, which includes inputs to emission equations for which reporting is not required. IVT uses these data to calculate the equation results.

Each report may be prepared by either a designated representative, an alternate designated representative or agent(s) of the owner or operator. The report must be signed by a designated representative of the owner or operator, certifying under penalty of law that the report has been prepared in accordance with the requirements of the rule. Additional information on setting up user accounts, registering a facility, and submitting annual reports is available on the [GHGRP Help webpage](#).



## When Can a Facility Stop Reporting?

A facility may discontinue reporting under several scenarios, which are summarized in Subpart A (found at 40 § CFR 98.2(i)) and the [Subpart A Information Sheet](#).



## For More Information

For additional information on Subpart V, visit the [Subpart V webpage](#). For additional information on the GHGRP, please visit the [GHGRP website](#), which includes additional information sheets, [data](#) previously reported to the GHGRP, [training materials](#), and links to Frequently Asked Questions ([FAQs](#)). For questions that cannot be answered through the GHGRP website, please contact us at: [GHGreporting@epa.gov](mailto:GHGreporting@epa.gov).

*This Information Sheet is provided solely for informational purposes. It does not replace the need to read and comply with the regulatory text contained in the rule. Rather, it is intended to help reporting facilities and suppliers understand key provisions of the GHGRP. It does not provide legal advice; have a legally binding effect; or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits with regard to any person or entity.*