TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY SIGNIFICANT PERMIT No. 104692
TO OPERATING PERMIT No. 97526

I. INTRODUCTION

This Class II Significant Permit Revision (SPR) No. 104692 to Operating Permit No. 97526 authorizes Linde Gas & Equipment, Inc. (Linde), the Permittee, to install a nitrogen dioxide (NO_2) transfill scrubber and vessel with a connected blower to collect residual gas from package during the NO_2 transfill operation.

A. Company Information

Facility Name:	Linde Gas & Equipment, Inc.
Mailing Address:	P.O. Box 6157
	Kingman, Arizona 86401
Facility Location:	3426 W. Griffith Road
	Kingman, Arizona 86401

B. Attainment Classification

The facility is located in Mohave County that is in attainment or unclassified for all criteria air pollutants.

II. PROCESS DESCRIPTION

A. Process Equipment

This SPR authorizes Linde Gas & Equipment, Inc., the Permittee, to add a new NO_2 transfill operation for package leak detection during maintenance. This process will manage packages containing nitrogen dioxide (NO_2) and tetroxide (N_2O_4). When a leak is detected, the leaking package will be connected to the manifold system and the nitrogen gas (N_2) will be used to push the NO_2 and N_2O_4 from the original leaked package into an empty one. Following the transfer, additional N_2 will be used to purge any residual NO_2 and N_2O_4 from both the container and the system. Any remaining gas that cannot be transferred will be directed to the proposed scrubber. Lastly, any empty packages returned to the facility will be connected to the system to remove residual NO_2 and N_2O_4 before routing them to the scrubber.

B. Control Devices

This SPR authorizes the installation of the following equipment:

1. One (1) scrubber and vessel with maximum capacity of 4,888 gallons, identified as Equipment ID NTS-1; and

2. One (1) scrubber blower with a maximum capacity of 5,000 standard cubic feet per minutes (SCFM), also identified as Equipment ID NTS-1.

III. LEARNING SITE EVALUATION

In accordance with ADEQ's Environmental Permits and Approvals near Learning Sites Policy, the Department is required to conduct an evaluation to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter schools and private schools in K-12 levels, and all planned sites for schools approved by the Arizona Schools Facilities. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

The facility is not within 2 miles of a learning site and thus, this permitting action is exempt from a learning site evaluation.

IV. COMPLIANCE HISTORY

A. Report Reviews

During the permit term, the facility received one (1) physical inspection and submitted three (3) compliance certifications. One (1) formal enforcement case was generated in response to the physical inspection. The case is detailed in Section III.B below:

Case ID No. 214942

A Notice of Opportunity to Correct (NOC) was issued to Linde on August 29, 2023 as the facility conducted demolition without inspecting for asbestos which violated Arizona Administrative (A.A.C.) R18-2-1101(A)(8) / 40 Code of Federal Regulation (CFR) § 61.145(a). The requested information was received and this case was closed on September 9, 2023.

B. Performance Tests

During this permit term, the following performance tests were conducted, and the results are shown in Table 1:

Table 1: Performance Test Results

Emission Unit	Pollutant	Date of Test	Results of Performance Test
VES-1	Arsine	05/02/2023-05/04/2023	Passed
VES-1	Arsine	04/30/2024-05/02/2024	Passed

V. EMISSIONS

The proposed changes would result in emissions of NO_2. Emissions from the proposed changes were calculated using the NO_2 concentration at the scrubber outlet in accordance with the facility's design objective which was derived from a custom made scrubber to provide operational flexibility. The facility's PTE is provided in Table 2 below:

Table 2: Potential to Emit (tpy)

Pollutant	Emissions (tons per year)			Permitting Exemption Threshold (tons per year)	Minor NSR Triggered?
	Pre-Revision	Post-Revision	Difference		
PM_{10}	0.17	0.17	0.00	7.5	No
$PM_{2.5}$	0.07	0.07	0.00	5	No
NO_x	1.53	2.62	+1.09	20	No
SO_2	0.21	0.21	0.00	20	No
VOCs	2.81	2.81	0.00	20	No
CO	0.45	0.45	0.00	50	No
Pb	0.00	0.00	0.00	0.3	No
HAPs	0.21	0.00	0.00	N/A	No

VI. MINOR NEW SOURCE REVIEW (NSR)

Minor new source review is required if the emissions of any physical change or change in the method of an operation of an emission unit or stationary source increases the PTE of any regulated minor NSR pollutant by an amount equal to or greater than its permitting exemption threshold (PET). As shown in Table 2 above, the emissions increase resulted from this SPR is below the PET. Thus, this facility is not subject to minor NSR requirements.

VII. VOLUNTARILY ACCEPTED EMISSION LIMITATION

The permit contains the following voluntarily accepted emission limitation:

A. NO_2 Transfill Operation

The facility has accepted a voluntary emission limit to control the concentration of NO_2 to less than 6.5 ppm/s at the outlet of the NO_2 transfill scrubber to avoid triggering minor new source review. The limit will be incorporated into the permit No. 104692.

VIII. APPLICABLE REGULATIONS

Table 3 identifies applicable regulations that were added during this SPR.

Table 3: Applicable Regulations

Unit	Control Device	Rule	Discussion
NO_2 Transfill Operation	Scrubber	A.A.C. R18-2-730.D, -F, -G	These standards are applicable to the NO_2 Transfill Operation which has been identified as unclassified sources.

IX. PREVIOUS PERMIT REVISIONS AND CONDITIONS

A. Previous Permit Revisions

The facility has not made any permit revision to Permit No. 97526 during the previous permit term.

B. Changes to Current Renewal

Table 4 addresses the changes made to the sections and conditions from Permit No. 97526:

Table 4: Previous Permit Conditions

Section No.	Determination			Comments
	Added	Revised	Deleted	
Att. "A" Section XII			X	Excess Emissions, Permit Deviations, and Emergency Reporting: Deleted Subsection C - Emergency Provisions to represent the most recent template language.
Att. "B" Section I	X			Facility-Wide Requirements: Added Subsection A - Applicability to represent the most recent template language.
Att. "B" Section I		X		Facility-Wide Requirements: Revised Subsection C - Opacity to represent the most recent permit condition.
Att. "B" Section I	X			Facility Wide Requirements: Added Subsection F to represent the most recent template language.
Att. "B" Section IV	X			NO_2 Transfill Operations: Added a new section to include specific permit conditions for the proposed scrubber installation.
Att. "C" Section XIII	X			NO_2 Transfill Scrubber: Added a new section to include the operation and maintenance plan for the proposed scrubber installation.
Att. "D"		X		Equipment List: Revised to include the equipment information provided for the proposed scrubber installation.

X. MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

Table 5 contains an inclusive but not an exhaustive list of the monitoring, recordkeeping and reporting requirements prescribed by this SPR. The table below is intended to provide insight to the public for how the facility is required to demonstrate compliance with the emission limits in the permit. Records are required be kept for a minimum of five (5) years as outlined in Section XII of Attachment "A" of the permit.

Table 5: Permit No. 104692

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
NO_2 Transfill Operation	NO_2	$\leq$ 6.5 ppm/s	Conduct performance testing after initial setup and at least once during the permit term	Keep data and test reports for monitoring.	Report test results. Submit excess emissions and deviations reports if applicable.
	N/A	N/A	Record the operating parameter of NO_2 transfill scrubber	Keep records of operating parameter and all maintenance activities of NO_2 transfill scrubber	Submit reports of all excursions of NO_2 transfill scrubber operating parameter alone with the compliance certifications.

XI. LIST OF ABBREVIATIONS

A.A.C. ..... Arizona Administrative Code
ADEQ ..... Arizona Department of Environmental Quality
CFR ..... Code of Federal Regulations
CO ..... Carbon Monoxide
CO_2 ..... Carbon Dioxide
EPA ..... Environmental Protection Agency
g ..... Gram
HAP ..... Hazardous Air Pollutant
hp ..... Horsepower
hr ..... Hour
IC ..... Internal Combustion
in.w.g ..... inches of water gauge
KW ..... Kilowatt
NO_X ..... Nitrogen Oxides
NO_2 ..... Nitrogen Dioxide
N_2O ..... Nitrous Oxide
N_2O_4 ..... Tetroxide
NSPS ..... New Source Performance Standards
O_3 ..... Ozone
Pb ..... Lead
PM ..... Particulate Matter
PM_{10} ..... Particulate Matter less than 10 µm nominal aerodynamic diameter
$PM_{2.5}$ ..... Particulate Matter less than 2.5 µm nominal aerodynamic diameter
ppb ..... parts per billion
ppm ..... parts per million
PTE ..... Potential to Emit
SCFM ..... Satndard Cubic Feet Per Minute
sec ..... Seconds
SO_2 ..... Sulfur Dioxide Significant Impact Levels
TPY ..... Tons per Year
VOC ..... Volatile Organic Compound
yr ..... Year