

South Coast Air Quality Management District

Statement of Basis - DRAFT

Proposed Title V Renewal Permit

(Issued for Public Notice – Date)

Facility Name: Air Products and Chemicals, Inc.
Facility ID: 3417
SIC Code: 2813
Equipment Location: 23300 South Alameda Street
Carson, California 90810

Application #: 548463
Application Submittal Date: 03/08/2013

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1. Introduction and Scope of Permit

Title V is a national operating permit program for air pollution sources. Facilities subject to Title V must obtain a Title V permit and comply with specific Title V procedures to modify the permit. This permit replaces the facility's other existing permits. Title V does not necessarily include any new requirements for reducing emissions. It does, however, include new permitting, noticing, recordkeeping, and reporting requirements.

Pursuant to Title V of the federal Clean Air Act and AQMD Rule 3004(f), a Title V permit shall expire five years from the date of issuance unless such permit has been renewed. Accordingly, each facility is required to submit a Title V renewal application and request the AQMD to renew their Title V permit. The proposed permit incorporates updates to the facility information provided in the facility's Title V renewal application and all rules and regulations that are currently applicable to the facility.

The AQMD implements Title V through Regulation XXX – Title V Permits, adopted by the AQMD Governing Board in order to comply with EPA's requirement that local air permitting authorities develop a Title V program. Regulation XXX was developed with the participation of the public and affected facilities through a series of public workshops, working group meetings, public hearings and other meetings.

The Title V major source threshold for a particular pollutant depends on the attainment status of the pollutant in the South Coast Air Basin. The Basin is in attainment with federal standards for NO₂, SO₂, CO and PM-10¹. The status for PM-2.5 and ozone is nonattainment and extreme nonattainment, respectively. The status for lead (for Los Angeles County only) is nonattainment.

A Title V permit renewal is proposed for the hydrogen production operations of Air Products and Chemicals, Inc., located at 23300 South Alameda Street in Carson, California. This facility is referred to as the Air Products Carson Plant. It is subject to Title V requirements because it is a major source for NO_x and VOC. Current federal regulations for NSPS (New Source Performance Standards) and NESHAP (National Emission Standards for Hazardous Air Pollutants) do not apply to the operations of this facility.

2. Facility Description

This is an existing facility applying for a Title V permit renewal that is in the business of hydrogen production. The facility operates one heater with a selective catalytic reduction (SCR) control device, one aqueous ammonia storage tank, one elevated flare, and other equipment directly involved in the core hydrogen production operations.

The facility operations can be basically characterized by the following processes: feed compression and preheating; feed desulfurization by hydrogenation; hydrogen production by steam-hydrocarbon reforming process; CO conversion by high temperature shift reaction; and hydrogen purification by pressure-swing adsorption (PSA). This facility only uses commercial-quality natural gas and steam, produced from treated water, to produce the desired hydrogen product. Commercial-quality natural gas and PSA purge gas are burned in the heater (reformer) to provide the required heat for the process. Hydrogen product is delivered by pipeline and sold to local refineries that are governed under separate Title V permits. Air Products and Chemicals, Inc. owns and operates another hydrogen plant in neighboring city Wilmington, which will be issued its own Title V renewal.

3. Construction and Permitting History

Permits to construct for initial construction of the Air Products Carson Plant were issued to Air Products and Chemicals, Inc. in September of 1998. The facility has been in continuous operation since late 1999. The initial Title V permit was issued to the facility on September 4, 2008. In addition to annual administrative permit revisions to update the facility's RECLAIM Annual Emission Allocations, the following permit revisions have been issued to the facility since the initial TV permit issuance:

¹PM10 has been re-designated from 'Serious Nonattainment' to 'In Attainment' by the EPA effective July 26, 2013. Additional information can be obtained at <http://www.gpo.gov/fdsys/pkg/FR-2013-06-26/html/2013-15145.htm>

Revision Date	Permit Action	Section
October 16, 2009	Minor Permit Revision to incorporate new heat exchanger to preheat PSA purge gas feed to reformer heater and rerouting SCR flue gas to a new heating coil.	H
February 24, 2011	Administrative Permit Revision to update Responsible Official and convert Permit to Construct to Permit to Operate. Minor Permit Revision to incorporate approved R1118 Flare Monitoring and Recording Plan in Section I.	A, D, I
October 21, 2011	Administrative Permit Revision to convert Permits to Construct to Permits to Operate and make rule tagging changes to affected permit conditions.	D
January 1, 2013	Administrative Permit Revision to clarify the RTC hold requirements of Rule 2005 with the addition of permit condition I298.1	D
March 8, 2013	Administrative Permit Revision to convert Permit to Construct to Permit to Operate	D

4. Regulatory Applicability Determinations

Applicable legal requirements for which this facility is required to comply have been determined and are identified in the Title V permit (for example, Section D, E and H). Applicability determination details (i.e., determinations made by the District with respect to what legal requirements apply to a specific piece of equipment, process, or operation) can be found in the Engineering Evaluations associated with the pre and post initial Title V permit the AQMD issued for this facility. This facility is not subject to any NSPS or NESHAP² requirements.

The facility is generally subject to 40CFR68 – Chemical Accident Prevention Provisions. The requirements of this regulation are reflected in the Title V permit (i.e. facility level condition F24.1).

5. Monitoring and Operational Requirements

Applicable monitoring and operational requirements for which the facility is required to comply are identified in the Title V permit (for example, Sections D, F, and J and Appendix B of the proposed Title V permit). Discussion of applicable monitoring and operational requirements can be found in the Engineering Evaluations. All periodic monitoring requirements were developed using strict adherence to the following applicable guidance documents: SCAQMD Periodic Monitoring Guidelines for Title V Facilities (November 1997) and CAPCOA/CARB/EPA Region IX Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP (June 1999).

Compliance Assurance Monitoring (CAM) requirements of 40 CFR Part 64 do not apply to any of the permitted emission sources at this facility as summarized in the following table and as detailed below:

²Although the facility submitted its Notification of Compliance for 40 CFR63, Subpart VVVVVV – NESHAP for Chemical Manufacturing Area Sources (CMAS) to EPA on October 29, 2012, the EPA has subsequently determined this CMAS rule does not apply to the catalyst change out activities at the Air Products Carson Plant. A copy of the applicability determination by the EPA on June 24, 2013 is attached for reference.

CAM Applicability Determinations for Equipment with Control Devices

Emissions Unit	Subject to emission limitation or standard?	Uses control device to comply with emission limitation or standard?	Pre-control emissions greater than major source threshold?	Meets any of the exemptions listed in §64.2(b)?	Subject to CAM requirements?
Reformer Furnace, D30	Yes – 5 ppmv NO _x (BACT)	Yes – SCR	Yes	Yes – §64.2(b)(vi); equipped with CEMS	No
Deaerator Vessel, D24	No – Exempt per Rule 1189(b)(5)	Yes – firebox of D30	No	--	No – does not meet three part test for CAM applicability
PSA purge gas/syngas vents from hydrogen plant	Yes – 2,000 ppmv CO (Rule 407)	Yes – flare	No	--	No

NO_x emissions from the Reformer Furnace D30 are subject to a BACT emission limit and are controlled by venting to an SCR. Pre-control emissions of NO_x are greater than the major source threshold. However, compliance with the NO_x emission limit is already monitored via a continuous compliance determination method as defined in §64.1 (a RECLAIM NO_x CEMS) as specified by a Part 70 Title V permit (existing permit condition D82.1). Therefore, CAM requirements of 40 CFR Part 64 are not applicable per the exemption in §64.2(b)(vi).

ROG emissions from deaerator vessel D24 are exempted from the definition of ‘process vent’ pursuant to District Rule 1189(b)(5) as this stream is vented to the fire box of the reformer furnace where a minimum temperature of 1400°F is maintained. Hence, it is not subject to the ROG emission limit in SIP-approved Rule 1189 or any other pollutant specific limit. Without being subject to any emissions limit or standard, CAM applicability does not apply.

CO emissions from the venting of syngas and PSA purge gas from the hydrogen plant during periods of planned startups and shutdowns are subject to an emission limit in SIP-approved Rule 407 and are controlled by venting to the elevated flare C33. However, pre-control emissions of CO are only 14 tons per year, less than the 50 tons per year major source threshold for CO in the South Coast Air Basin. Therefore, CAM requirements are not applicable per the applicability requirements in §64.2(a)(3).

6. Permit Features

Permit Shield

A permit shield is an optional part of a Title V permit that gives the facility an explicit protection from requirements that do not apply to the facility. A permit shield is a provision in a permit that states that compliance with the conditions of the permit shall be deemed compliant with all identified regulatory requirements. To incorporate a permit shield into the Title V permit involves submission of applications for change of conditions for each equipment affected by the

permit shield. Permit shields are addressed in Rule 3004 (c). This facility has not applied for a permit shield for any of its equipment.

Alternate Operating Scenarios

An alternative operating scenario (AOS) is a set of provisions and conditions in a permit that allows the operator to switch back and forth between alternative modes of operation without submitting an application for a permit revision before each switch. However, each AOS must be evaluated for compliance with AQMD rules and regulations and applicable State and Federal requirements. AOS is addressed in Rule 3005 (j). This facility has not applied for an AOS for any of its equipment.

Streamlining Requirements

Some emission units may be subject to multiple requirements which are closely related or redundant. The conditions may be streamlined to simplify the permit conditions and compliance. Emission limits, work practice standards, monitoring, recordkeeping, and reporting requirements may be streamlined. Compliance with a streamlined condition will be deemed compliant with the underlying requirements whether or not the emission unit is actually in compliance with the specific underlying requirement. This facility has not applied for any streamlined condition.

7. Summary of Emissions and Health Risks

**Criteria Pollutant Emissions
Annual Reported Emissions for Calendar Year 2012**

Pollutant	Emissions (tons/year)
CO	18.024
NOx	19.403
VOC	15.033
SOx	0.324
PM	9.134

**Toxic Air Contaminants Emissions (TACs)
Annual Reported Emissions for Calendar Year 2012**

The Following TACs Were Reported	Emissions (lbs/yr)
Ammonia	13107.854
Benzene*	89.745
Formaldehyde*	558.752
Naphthalene*	8.280
PAHs, total, with components not reported*	2.464

Source: AQMD “Facility Information Detail” (FIND) database, available at http://www3.aqmd.gov/webappl/fim/prog/emission.aspx?fac_id=3417

*These TACS are also Hazardous Air Pollutants (HAPs), Section 112, 1990 Clean Air Act Amendments. Total HAPs reported are 659.241 lbs/yr

Health Risk from Toxic Air Contaminants

The facility is exempt from performing a Health Risk Assessment under the Air Toxics Information and Assessment Act (AB2588 program) because of its low priority score.

8. Compliance History

As noted, the hydrogen plant has been in constant operation since late 1999. The plant has been subject to both self-reporting requirements and AQMD inspections. There have been no citizens complaints filed, one (1) Notice to Comply, and five (5) Notices of Violation issued in the last three years. These compliance issues have all been resolved. Further information regarding the facility's compliance status is available on the internet under the AQMD's "Facility Information Detail" (FIND) database at http://www3.aqmd.gov/webappl/fim/prog/emission.aspx?fac_id=3417

9. Compliance Certification

By virtue of the Title V permit application and issuance of this permit, the reporting frequency for compliance certification for the facility shall be annual.

10. Comments

There were no significant changes in this permit since the initial issuance of the Title V permit.