

Fact Sheet



For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-03900004-2015 (Group 1 of 2)**

Application Received: **April 28, 2014**

Plant Identification Number: **03-054-039-00004**

Permittee: **Union Carbide Corporation**

Facility Name: **Technology Park Operations**

Mailing Address: **P.O. Box 8361, South Charleston, West Virginia 25303**

Physical Location: South Charleston, Kanawha County, West Virginia
UTM Coordinates: 438.7 km Easting • 4,245.5 km Northing • Zone 17
Directions: From Charleston take I-64 east toward Huntington. Take Kanawha Turnpike exit. Travel west approximately 1/2 mile to the Technology Park Operations.

Facility Description

This renewal permit (Group 1 of 2) provides requirements for the research and development activities conducted at the facility. Another permit (Group 2 of 2) provides requirements pertaining to facility support activities, operations related to Environmental Operations, and Shared Services/Energy Systems. The research and development groups provide experimental, analytical, and engineering support for the development of new products, process technology for manufacturing, and support for existing products and processes. The primary SIC and NAICS codes for this facility are 2869 and 325199, respectively.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Facility Wide Potential Emissions	2013 Facility Wide Actual Emissions
Carbon Monoxide (CO)	38	8.10
Nitrogen Oxides (NO _x)	11	1.49
Particulate Matter (PM _{2.5})	1	< 0.01
Particulate Matter (PM ₁₀)	1	< 0.01
Total Particulate Matter (TSP)	1	0.01
Sulfur Dioxide (SO ₂)	0.1	< 0.01
Volatile Organic Compounds (VOC)	128	65.55

PM₁₀ is a component of TSP.

Hazardous Air Pollutants	Facility Wide Potential Emissions	2013 Facility Wide Actual Emissions
Total Haps	7.2	2.53

Some of the above HAPs may be counted as PM or VOCs.

Title V Program Applicability Basis

This facility has the potential to emit over 100 TPY of VOC's, Due to this facility's potential to emit over 100 tons per year of criteria pollutant, Union Carbide Corporation's Technology Park Operations is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	Particulate matter and opacity limits for indirect heat exchangers.
	45CSR6	Open burning prohibited.
	45CSR7	Particulate matter and opacity limits for manufacturing sources.
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Permits for Construction, Modification, Relocation, etc.
	45CSR16	Standards of Performance for New Stationary Sources

	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	45CSR34	Emission Standards for HAPs pursuant to 40 C.F.R. Parts 61 and 63.
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. 60, Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
	40 C.F.R. 63, Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)
	40 C.F.R. Part 82, Subpart F	Ozone depleting substances
State Only:	45CSR4	No objectionable odors.
	45CSR21, Section 40	Control of VOCs

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit <i>(if any)</i>
R13-1858	09/28/1995	
CO-R21-97-36	10/16/1997	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

Determinations and Justifications

This is a second renewal of the Title V permit. The following changes have been made to the most recent version of this Permit:

General Changes:

R13-0463B has been removed from Section 1.2 of the Permit. This part of the facility has been demolished. There were no specific requirements from this NSR Permit in the previous Title V Permit. R13-2272B has been removed from Section 1.2 of the Permit. This R13 Permit was made inactive on September 30, 2005. There were no specific requirements from this R13 Permit in the previous Title V Permit. R13-1322A has been removed from Section 1.2 of the Permit. R13-1322A is no longer applicable. Permitted equipment was demolished prior to March 2010. There were no specific requirements from this R13 Permit in the previous Title V Permit.

Buildings 740, 770, and 771 Laboratories were removed from this Permit. They are no longer under the ownership or operational control of UCC. Storage Tanks PST1 and PST2 are out of service and have been removed from this Permit. The Emission Unit Description of Emission Unit RXNS has been changed from “Co-Catalyst Storage” to “Process Additives Storage/Feed Vessels”. Building 774 (Bldg 774), Building 773 Emergency Generator (EG9), Bulk Gas Area Emergency Generator (EG13), and Natural Gas Fueled Boilers (SB1, SB2, and SB3) have been added to the equipment table.

Emergency Generator EG10 is no longer under the ownership/operational control of UCC. This unit has been removed from Condition 3.7.2.4. Emergency Generator EG13 has replaced EG10 and was added to Condition 3.7.2.4. The Emission Unit Description for EG11 in Condition 3.7.2.4 has been changed from “West Bulk Gas” to “Portable Natural Gas or”. Condition 3.7.2.6 has been revised to note that there are no engines subject to 40CFR60 Subpart IIII under UCC ownership/operational control at the Tech Park Operations. Condition 3.7.2.7 has been revised to identify that emergency generators EG6 and EG11 are not stationary emergency generators, that they were manufactured before July 1, 2008 and therefore are not subject to 40CFR60 Subpart JJJJ. Stationary emergency generator EG9 was manufactured prior to July 1, 2008 and is not subject to this rule. Stationary emergency generator EG13 was installed after July 1, 2008 and is subject to this rule. Condition 3.7.2.8 has been added to note that 40CFR63 Subpart JJJJJ does not apply since the Permittee uses natural gas as fuel for the boilers. Condition 3.7.2.9 has been added to note that 40CFR60 Subpart Dc does not apply because the maximum design heat input for boilers SB1, SB2, and SB3 are below 10 MMBTU/hr. Condition 3.7.2.10 has been added to note that 40CFR63 Subpart VVVVVV does not apply as the PRD Pilot Plant is exempt because it is a research and development facility.

45CSR2 – To Prevent and Control Particulate Air Pollution From Combustion of Fuel in Indirect Heat Exchangers

The Permittee has three 3.3 MMBtu/hr Natural Gas Boilers (SB1, SB2, and SB3). They are subject to the 10% opacity limit of 45CSR§2-3.1. This is given in Condition 5.1.19. As each of the boilers are less than 10 MMBTU/hr, 45CSR§2-11.1 exempts them from Sections 4, 5, 6, 8, and 9 of Rule 2. Since the boilers only burn natural gas, which is a clean burning fuel, no monitoring would appear necessary to show compliance with the 10% opacity limit.

40 C.F.R. Part 63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

The emergency generator EG9 is subject to 40 CFR 63, Subpart ZZZZ.

This engine is classified as an existing emergency spark ignition engine rated at less than 500 HP at an Area Source of HAPs. The engine is covered by 40 CFR 63, Subpart ZZZZ as follows:

- The engine must comply with the requirements in 40 C.F.R. §63.6603(a) and Table 2d to this subpart. These requirements were added as condition 6.1.1.a.
- This engine must comply with the continuous compliance requirements & general requirements in 40 C.F.R. §§63.6605 and 63.6640. These requirements were added as conditions 6.1.1.b and d, 6.1.2, 6.5.2, and 6.5.3.
- This engine must comply with the general provisions of 40 CFR part 63. Except per 40 C.F.R. §63.6645(a)(5), the following do not apply: §§63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), and 63.9(b)-(e), (g) and (h). This requirement was added as condition 6.1.1.c.
- This engine must be operated in compliance with the monitoring, installation, collection, operation, and maintenance requirements of 40 C.F.R. §§ 63.6625(e), (f), (h), and (j). These requirements were added as conditions 6.1.1.a, d, e, and f.
- This engine must be operated in compliance with the recordkeeping requirements of 40 C.F.R. §§63.6655(a), (b), (d), (e), and (f). These requirements were added as condition 6.4.1.

Emergency generator EG13 is subject to 40 CFR 63 Subpart ZZZZ. However, according to 40 CFR §63.6590(c)(1), a new stationary RICE located at an area source must meet the requirements of 40 CFR 63 Subpart ZZZZ by meeting the requirements of 40 CFR 60 Subpart JJJJ.

40 C.F.R. Part 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

The emergency generator EG13 is subject to 40 CFR 60, Subpart JJJJ.

This engine is classified as an emergency engine that burns propane and is rated at 30 hp @ 3,600 rpm. The engine is covered by 40 CFR 60, Subpart JJJJ as follows:

- The engine is certified to the emission standards in 40 C.F.R. §60.4231(c) and the Permittee shall operate and maintain the emergency engine according to the manufacturer's emission-related written instructions and keep records of conducted maintenance. This is given in Condition 7.1.1.
- The Permittee shall operate the emergency engine less than 100 hours per calendar year for maintenance and testing, emergency demand response, and operation in non-emergency situations. The Permittee may operate the emergency engine up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year. This is given in Condition 7.1.2.
- The Permittee must keep records of all notifications and maintenance, along with documentation that the engine is certified to meet the emission standards. This is given in Condition 7.4.1.
- The permittee is required to install a non-resettable hour meter and to maintain records of the hours of operation. These requirements are given in Conditions 7.1.3 and 7.4.2.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

1. **40 C.F.R. Part 63 Subparts F, G, and H – National Emission Standards for Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry.** The permittee's facility is a research and development facility. As such, the facility is exempt from the requirements of Subparts F, G, and H, in accordance with the exemption provided at 40 C.F.R. §63.100(j)(1).
2. **40 C.F.R. Part 64 – Compliance Assurance Monitoring (CAM)**
 In accordance with 40 C.F.R. §64.2(b)(1)(vi), CAM does not apply to any emission unit emitting VOC to the Polyolefins R&D flare 73F due to the fact that a continuous compliance determination method is already specified by current Title V permit R30-03900004-2010, condition 5.2.1. This condition requires continuous monitoring and recording of flare temperature in order to demonstrate compliance with the VOC limits (4.16 pph and 18.2 tpy) of condition 5.1.4.
3. **45CSR10 – To Prevent and Control Air Pollution from the Emission of Sulfur Oxides.** The emission units in the following table are not subject to 45CSR10:

Emission Unit ID	Description of Emission Unit	Rationale for Non-applicability of 45CSR10
EG6	Portable Building 773 Gasoline-fired Emergency Generator, approximately 10-hp	Internal combustion engines, including gas turbines and emergency generators, are not subject to 45CSR10 as per Director's verbal guidance.
EG9	Building 773 Natural gas-fired Emergency Generator, 45-kW (equiv. to 60-hp)	Internal combustion engines, including gas turbines and emergency generators, are not subject to 45CSR10 as per Director's verbal guidance.
EG11	Portable Natural Gas or Propane-fired Emergency Generator, 13 kW (equiv. to 17.4-hp)	Internal combustion engines, including gas turbines and emergency generators, are not subject to 45CSR10 as per Director's verbal guidance.

Emission Unit ID	Description of Emission Unit	Rationale for Non-applicability of 45CSR10
EG13	West Bulk Gas Propane-fired Emergency Generator, 13 kW (30 hp @ 3,600 rpm)	Internal combustion engines, including gas turbines and emergency generators, are not subject to 45CSR10 as per Director's verbal guidance.

The Natural Gas Boilers (SB1, SB2, and SB3) are each less than 10 MMBTU/hr. 45CSR§10-10.1 exempts them from Sections 3 and 6 through 8 of 45CSR10. Therefore there are no applicable requirements from this rule.

4. **40 C.F.R. Part 63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.** This MACT applies to stationary RICE, which according to §63.6675 is not mobile. According to the application, the generators identified by Emission Unit IDs EG6 and EG11 are moveable by hand and do not stay in one location for more than 12 months; therefore, this regulation does not apply to these generators.
5. **40 C.F.R. Part 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.** This regulation applies to compression ignition internal combustion engines constructed after July 11, 2005 (cf. 40 C.F.R. §60.4200(a)(2)) and is not applicable to Technology Park Operations as there are no stationary compression ignition internal combustion engines under UCC ownership/operational control at the Technology Park Operations.
6. **40 C.F.R. Part 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.** This regulation applies to stationary spark ignition internal combustion engines manufactured or constructed on or after the various dates specified in 40 C.F.R. §§60.4230(a)(1) through (5). Emergency generators EG6 and EG11 are portable emergency generators manufactured before July 1, 2008 and therefore are not subject to this rule. Emergency Generator EG9 is a stationary generator manufactured prior to July 1, 2008 and has not been modified or reconstructed, therefore EG9 is not subject to 40CFR60 Subpart JJJJ. Emergency Generator EG13 was installed after July 1, 2008 and is subject to 40CFR60 Subpart JJJJ.
7. **40 C.F.R. Part 63 Subpart JJJJJJ – NESHAP for Hazardous Air Pollutants from Industrial, Commercial and Institutional Boilers Area Sources.** This regulation does not apply because the boiler fuel is natural gas (§63.11195(e)).
8. **40 C.F.R. Part 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.** The regulation does not apply to the natural gas fired boilers (SB1, SB2, and SB3) because the maximum design heat input is less than 10 MM BTU/hr.
9. **40 C.F.R. Part 63 Subpart VVVVVV – NESHAP from Chemical Manufacturing Area Sources.** The regulation does not apply as 40CFR§63.11494(c)(3) specifically exempts research and development facilities as defined by the Clean Air Act Section 112(c)(7). By letter dated December 6, 2012 from Mr. John A. Benedict, Director of WVDAQ, it was determined that the PRD Pilot Plant retained its “research or laboratory facility” classification as denoted by Section 112(c)(7) of the 1990 Clean Air Act Amendments and shall remain exempt from Part 63 National Emission Standards for Hazardous Air Pollutants for the selling of scrap resin.

Request for Variances or Alternatives

None

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: June 12, 2015
Ending Date: July 13, 2015

Point of Contact

All written comments should be addressed to the following individual and office:

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Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Response to Comments (Statement of Basis)

On June 24, 2015 the Permittee requested that the facility name be changed from "Technology Park" to "Technology Park Operations". The previous Permit listed the Facility name as "Technology Park, South Charleston". As the Permittee requested the facility name in Box 2 of the general application, the facility name has been changed to "Technology Park Operations" in the fact sheet and Permit. The Permittee also asked that Condition 6.1.1.e be changed from "The permittee shall install a non-resettable hour meter is one is not already installed" to "The permittee shall install a non-resettable hour meter if one is not already installed." This has been changed in the final Permit.